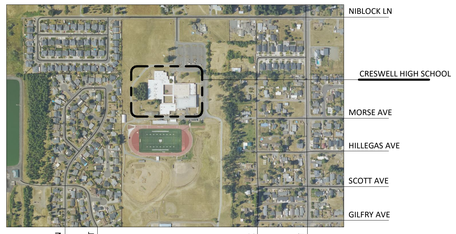
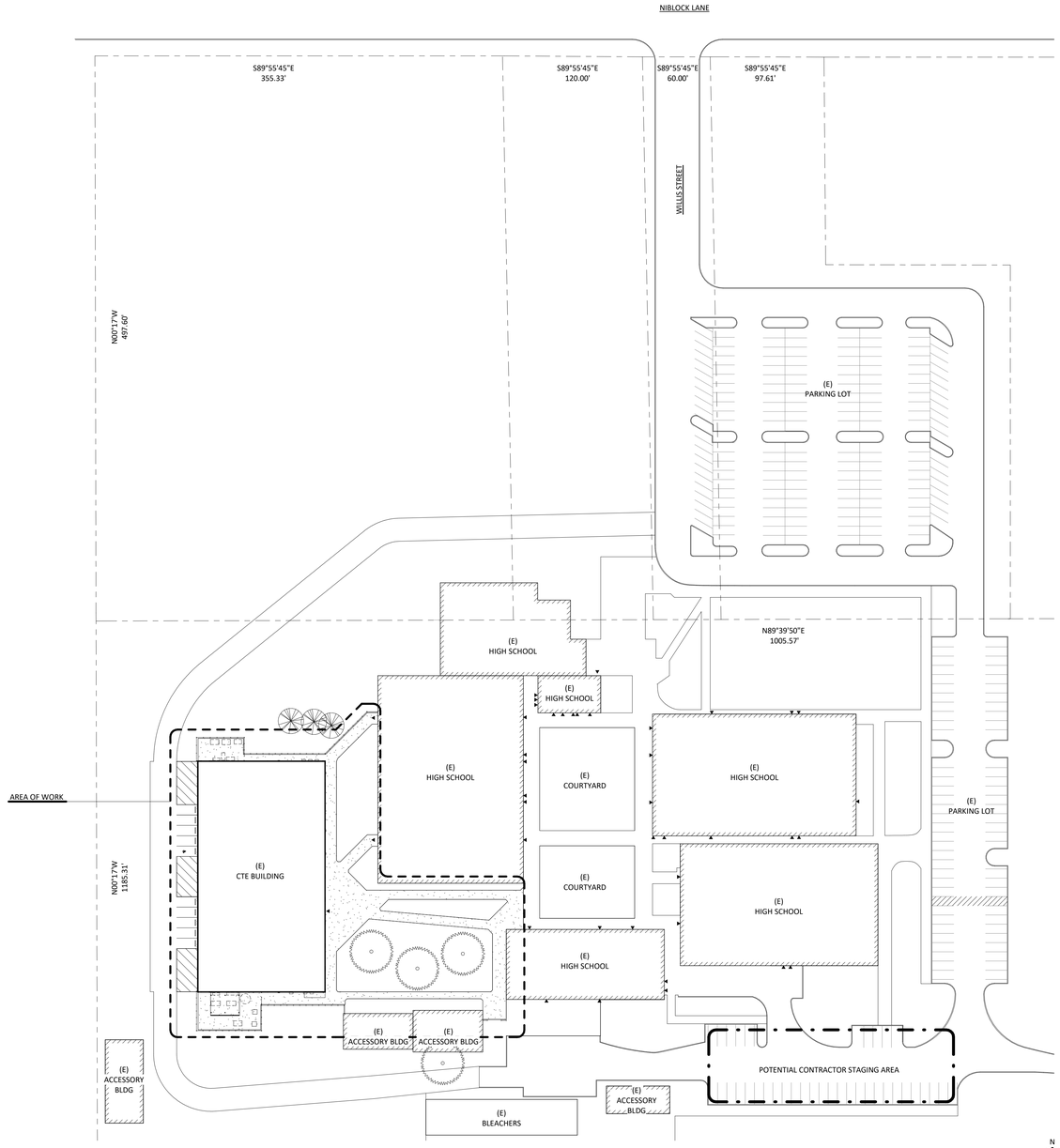
CRESWELL HIGH SCHOOL CTE BUILDING INTERIOR IMPROVEMENT



VICINITY MAP
NOT TO SCALE

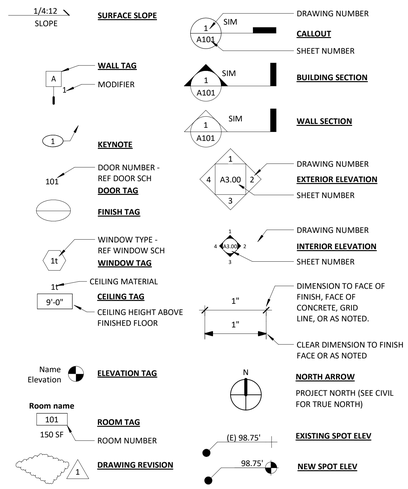


1 OVERALL SITE PLAN
1" = 50'-0"

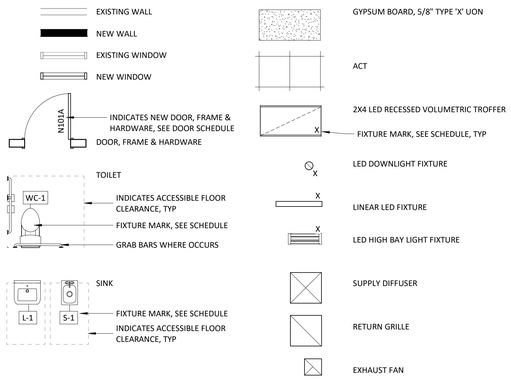
GENERAL NOTES

1. BRING CONFLICTS & INCONSISTENCIES WITHIN PROJECT DOCUMENTS AND/OR FIELD CONDITIONS TO ATTENTION OF ARCHITECT BEFORE PROCEEDING WITH WORK.
2. DO NOT SCALE DRAWINGS. COORDINATE DIMENSIONS SHOWN ON DRAWINGS WITH ACTUAL FIELD MEASUREMENTS. NOTIFY ARCHITECT OF DISCREPANCIES.
3. CLEAN CONSTRUCTION CAVITIES PRIOR TO ENCLOSING WITH (N) MATERIALS, INCLUDING ABOVE CEILINGS & WITHIN STUD CAVITIES.
4. INTERIOR DIMENSIONS ARE TO FACE OF FINISH, UON – FIELD VERIFY.
5. LOCATE AND PROTECT EXISTING UTILITIES, WHETHER INDICATED IN DRAWINGS OR NOT.
6. CEILING HEIGHTS ARE RELATIVE TO FINISH FLOOR, UON.
7. COORDINATE LOCATIONS OF IN-WALL ITEMS TO AVOID BACK TO BACK INSTALLATION.
8. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND COORDINATION OF SUBCONTRACTORS WORK, COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS, ACCURATE LOCATION OF STRUCTURAL MEMBERS, AND OPENINGS FOR MECHANICAL, ELECTRICAL, AND MISCELLANEOUS EQUIPMENT.
9. PROVIDE BACKING, BLOCKING, OR STRAPPING AS REQUIRED FOR GRAB BARS, SHELVING, EQUIPMENT, HANDRAILS, ACCESSORIES, AND CABINETS.
10. SEE STRUCTURAL FOR REQUIRED SPECIAL INSPECTIONS.
11. SEE CIVIL, STRUCTURAL, ELECTRICAL, MECHANICAL, PLUMBING FOR ADDITIONAL WORK NOT INDICATED ON THESE DRAWINGS.
12. VERIFY EQUIPMENT SIZE, LOCATION, AND QUANTITY WITH OWNER.
13. DO NOT ANCHOR ITEMS TO DUCTWORK, PIPING OR CEILING GRID.
14. PERMANENTLY LABEL RATED OPENINGS AND SAFETY GLAZING WITH THE MANUFACTURER'S NAME AND TEST APPROVAL INFORMATION.
15. PROVIDE FIRE-RESISTIVE JOINT SYSTEMS, FIRE BLOCKS, DRAFT STOPS, AND FIRESTOP SYSTEMS IN ACCORDANCE WITH OSSC CH. 7 & OFC WHERE FIRE RATED ASSEMBLIES INDICATED.
16. PROVIDE GALVANIC ISOLATION BETWEEN DISSIMILAR METALS .

SYMBOL LEGEND



LEGEND



GMA ARCHITECTS
860 West Park Street / Ste 300
Eugene / Oregon / 97401
p 541.344.9157
gma-arch.com

REGISTERED ARCHITECT
JOSEPH E. MOORE
EUGENE, OREGON
6033
STATE OF OREGON

PROJECT INFORMATION

SITE ADDRESS
CRESWELL HIGH SCHOOL
33390 NIBLOCK LANE
CRESWELL, OR 97426

MAP + TAXLOT
MAP: 19031511
TAXLOT: 00100

OWNER'S REPRESENTATIVE:
CRESWELL SCHOOL DISTRICT 40
998 WEST A STREET
CRESWELL, OR 97426
TEL: (541) 895-6000

ARCHITECT:
GMA ARCHITECTS
860 W. PARK STREET
EUGENE, OREGON 97401
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ATTN: JOSEPH E MOORE, AIA, PRINCIPAL
EMAIL: JMOORE@gma-arch.com

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MECHANICAL	
M001	HVAC LEGEND, NOTES, & SCHEDULES
M100	HVAC OVERALL BUILDING PLAN
M120	HVAC FLOOR PLAN
ELECTRICAL	
E-1	ELECTRICAL PLAN

CRESWELL HIGH SCHOOL CTE BUILDING
INTERIOR IMPROVEMENT
33390 NIBLOCK LN, CRESWELL OR 97426
CONSTRUCTION DOCUMENTS

JOB NO: 26767
ISSUE DATE: 18 NOV 2026

COVER

G100

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GENERAL NOTES

1. SURVEY PROVIDED BY KPFF, DATED AUGUST 29, 2025. ELEVATIONS ARE BASED ON NAVD 88 (GEOID 12A). ELEVATION WAS ESTABLISHED THROUGH A GPS OBSERVATION ON CONTROL POINT NO. 1 USING THE OREGON REAL-TIME GPS NETWORK (ORGN).
2. CONSTRUCTION LAYOUT (ALL ACTUAL LINES AND GRADES) SHALL BE STAKED BY A PROFESSIONAL SURVEYOR, REGISTERED IN THE STATE OF OREGON, BASED ON COORDINATES, DIMENSIONS, BEARINGS, AND ELEVATIONS, AS SHOWN, ON THE PLANS.
3. PROJECT CONTROL SHALL BE FIELD VERIFIED AND CHECKED FOR RELATIVE HORIZONTAL POSITION PRIOR TO BEGINNING CONSTRUCTION LAYOUT. SEE PROJECT SURVEY FOR CONTROL INFORMATION.
4. PROJECT CONTROL SHALL BE FIELD VERIFIED AND CHECKED FOR RELATIVE VERTICAL POSITION BASED ON THE BENCHMARK STATED HEREON, PRIOR TO BEGINNING CONSTRUCTION LAYOUT.
5. WHEN DIMENSIONS AND COORDINATE LOCATIONS ARE REPRESENTED - DIMENSIONS SHALL HOLD OVER COORDINATE LOCATION. NOTIFY THE CIVIL ENGINEER OF RECORD IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES.
6. BUILDING SETBACK DIMENSIONS FROM PROPERTY LINES SHALL HOLD OVER ALL OTHER CALLOUTS. PROPERTY LINES AND ASSOCIATED BUILDING SETBACKS SHALL BE VERIFIED PRIOR TO CONSTRUCTION LAYOUT.
7. CONTRACTOR SHALL PRESERVE AND PROTECT FROM DAMAGE ALL EXISTING MONUMENTATION DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND PAYING FOR THE REPLACEMENT OF ANY MONUMENTS DAMAGED OR REMOVED DURING CONSTRUCTION. NEW MONUMENTS SHALL BE REESTABLISHED BY A LICENSED SURVEYOR.
8. SOME SITE DEMOLITION AND UTILITY RELOCATION HAS BEEN PERFORMED. SURVEY MAY NOT BE COMPLETE OR ACCURATE. CONTRACTOR TO VERIFY EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ENGINEER PRIOR TO BEGINNING CONSTRUCTION.
9. CONTRACTOR TO REFERENCE SOILS REPORT BY PBS DATED OCTOBER 4, 2023 FOR THE SITE SOILS CONDITIONS.
10. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THESE PLANS, THE PROJECT SPECIFICATIONS AND THE APPLICABLE REQUIREMENTS OF THE 2024 OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE 2023 OREGON PLUMBING SPECIALTY CODE AND REQUIREMENTS OF THE CITY OF CRESWELL.
11. THE COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES AND REGULATIONS. ALL PERMITS, LICENSES AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES FOR THE EXECUTION AND COMPLETION OF WORK SHALL BE SECURED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.
12. ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503) 232-1987). (MODIFY AS NECESSARY FOR OUT OF STATE WORK.) EXCAVATORS MUST NOTIFY ALL PERTINENT COMPANIES OR AGENCIES WITH UNDERGROUND UTILITIES IN THE PROJECT AREA AT LEAST 48 BUSINESS-DAY HOURS, BUT NOT MORE THAN 10 BUSINESS DAYS PRIOR TO COMMENCING AN EXCAVATION, SO UTILITIES MAY BE ACCURATELY LOCATED.
13. THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION ONLY AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. CONTRACTOR SHALL VERIFY ELEVATIONS, PIPE SIZE, AND MATERIAL TYPES OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WITH CONSTRUCTION AND SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF KPFF CONSULTING ENGINEERS, 72 HOURS PRIOR TO START OF CONSTRUCTION TO PREVENT GRADE AND ALIGNMENT CONFLICTS.
14. THE ENGINEER OR OWNER IS NOT RESPONSIBLE FOR THE SAFETY OF THE CONTRACTOR OR HIS CREW. ALL O.S.H.A. REGULATIONS SHALL BE STRICTLY ADHERED TO IN THE PERFORMANCE OF THE WORK.
15. TEMPORARY AND PERMANENT EROSION CONTROL MEASURES SHALL BE IMPLEMENTED. THE CONTRACTOR SHALL ADHERE TO CITY OF CRESWELL FOR MINIMUM EROSION CONTROL MEASURES. THE ESC FACILITIES SHOWN IN THESE PLANS ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT LEAVE THE SITE.
16. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL ROADWAYS, KEEPING THEM CLEAN AND FREE OF CONSTRUCTION MATERIALS AND DEBRIS, AND PROVIDING DUST CONTROL AS REQUIRED.
17. TRAFFIC CONTROL SHALL BE PROVIDED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN TO CRESWELL SCHOOL DISTRICT FOR REVIEW AND APPROVAL PRIOR TO COMMENCING CONSTRUCTION.
18. CONTRACTOR SHALL MAINTAIN ALL UTILITIES TO THE SCHOOL BUILDING AT ALL TIMES DURING CONSTRUCTION.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING ALL WORK WITH THE OWNER.

CONSTRUCTION NOTES

EARTHWORKS

1. ALL SUBGRADE AND BACKFILL BELOW THE PROPOSED STRUCTURE MUST BE APPROVED IN THE FIELD BY A GEOTECHNICAL ENGINEER.
2. SUBGRADE AND TRENCH BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698. FLOODING OR JETTING THE BACKFILLED TRENCHES WITH WATER IS NOT PERMITTED.
3. TRENCH BEDDING AND BACKFILL SHALL BE AS SHOWN ON THE PIPE BEDDING AND BACKFILL DETAIL, THE PROJECT SPECIFICATIONS AND AS REQUIRED IN THE SOILS REPORT.
4. WITH THE APPROVAL OF THE ENGINEER, PROOF-ROLL TESTING OF SUBGRADE AND/OR AGGREGATE BASE MAY BE SUBSTITUTED FOR OTHER COMPACTION TESTING.
5. CONTRACTOR SHALL PREVENT SEDIMENTS AND SEDIMENT LADEN WATER FROM ENTERING THE STORM DRAINAGE SYSTEM.

DEMOLITION

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND DISPOSAL OF EXISTING AC, CURBS, SIDEWALKS AND OTHER SITE ELEMENTS WITHIN THE SITE AREA IDENTIFIED IN THE PLANS.
2. EXCEPT FOR MATERIALS INDICATED TO BE STOCKPILED OR TO REMAIN ON OWNER'S PROPERTY, CLEARED MATERIALS SHALL BECOME CONTRACTOR'S PROPERTY, REMOVED FROM THE SITE, AND DISPOSED OF PROPERLY.
3. ITEMS INDICATED TO BE SALVAGED SHALL BE CAREFULLY REMOVED AND DELIVERED STORED AT THE PROJECT SITE AS DIRECTED BY THE OWNER.
4. ALL LANDSCAPING, PAVEMENT, CURBS AND SIDEWALKS, BEYOND THE IDENTIFIED SITE AREA, DAMAGED DURING THE CONSTRUCTION SHALL BE REPLACED TO THEIR ORIGINAL CONDITION OR BETTER.
5. CONCRETE SIDEWALKS SHOWN FOR DEMOLITION SHALL BE REMOVED TO THE NEAREST EXISTING CONSTRUCTION JOINT.
6. SAWCUT STRAIGHT MATCHLINES TO CREATE A BUTT JOINT BETWEEN THE EXISTING AND NEW PAVEMENT.

UTILITIES

1. ADJUST ALL INCIDENTAL STRUCTURES, MANHOLES, VALVE BOXES, CATCH BASINS, FRAMES AND COVERS, ETC. TO FINISHED GRADE.
2. CONTRACTOR SHALL ADJUST ALL EXISTING AND/OR NEW FLEXIBLE UTILITIES (WATER, TV, TELEPHONE, ELEC., ETC.,) TO CLEAR ANY EXISTING OR NEW GRAVITY DRAIN UTILITIES (STORM DRAIN, SANITARY SEWER, ETC.,) IF CONFLICT OCCURS.
3. CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE INSTALLATION OF OR ADJUSTMENT TO GAS, ELECTRICAL, POWER AND TELEPHONE SERVICE.
4. BEFORE BACKFILLING ANY SUBGRADE UTILITY IMPROVEMENTS CONTRACTOR SHALL SURVEY AND RECORD MEASUREMENTS OF EXACT LOCATION AND DEPTH AND SUBMIT TO ENGINEER AND OWNER.
5. ALL WORK TO CONFORM TO THE 2023 OREGON PLUMBING SPECIALTY CODE.

STORM AND SANITARY

1. CONNECTIONS TO EXISTING STORM AND SANITARY SEWERS SHALL CONFORM TO THE 2024 OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 00490, "WORK ON EXISTING SEWERS AND STRUCTURES".
2. BEGIN LAYING STORM DRAIN AND SANITARY SEWER PIPE AT THE LOW POINT OF THE SYSTEM, TRUE TO GRADE AND ALIGNMENT INDICATED WITH UNBROKEN CONTINUITY OF INVERT. THE CONTRACTOR SHALL ESTABLISH LINE AND GRADE FOR THE STORM AND SANITARY SEWER PIPE USING A LASER.
3. ALL ROOF DRAIN AND CATCH BASIN LEADERS SHALL HAVE A MINIMUM SLOPE OF 2 PERCENT UNLESS NOTED OTHERWISE IN THE PLANS.
4. ALL HORIZONTAL CONNECTIONS TO THE SANITARY OR STORM SEWERS SHALL BE OF THE 'WYE' BRANCH TYPE.

WATER

1. ALL WATER AND FIRE PROTECTION PIPE SHALL HAVE A MINIMUM 36-INCH COVER TO THE FINISH GRADE.
2. ALL WATER AND FIRE PRESSURE FITTINGS SHALL BE PROPERLY RESTRAINED WITH THRUST BLOCKS PER DETAIL.
3. ALL WATER MAIN / SANITARY SEWER CROSSINGS SHALL CONFORM TO THE OREGON STATE HEALTH DEPARTMENT REGULATIONS, CHAPTER 333.

SEPARATION STATEMENT

ALL WATER MAIN CROSSINGS SHALL CONFORM TO THE OREGON STATE HEALTH DEPARTMENT, CHAPTER 333. WATER MAINS SHALL CROSS OVER SANITARY SEWERS WITH A 18" MINIMUM CLEARANCE BETWEEN OUTSIDE DIAMETERS OF PIPE WITH ALL PIPE JOINTS EQUIDISTANT FROM CROSSING. HORIZONTAL SEPARATION BETWEEN WATER MAINS AND SANITARY SEWERS IN PARALLEL INSTALLATIONS SHALL BE 10'. MAINTAIN 12" MINIMUM VERTICAL DISTANCE FOR ALL OTHER UTILITY CROSSINGS AND 12" HORIZONTAL PARALLEL DISTANCE. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN THE MINIMUM 10' HORIZONTAL SEPARATION, THE WATER MAIN SHALL BE LAID ON A SEPARATE SHELF IN THE TRENCH 18" INCHES ABOVE THE SEWER.

ABBREVIATIONS

AD	AREA DRAIN	OVH/OH	OVERHEAD
APPROX.	APPROXIMATE	P/L	PROPERTY LINE
B	BOLLARD	PED	PEDESTRIAN
BLDG	BUILDING	PP	POWER POLE
CL	CENTERLINE	PUE	PUBLIC UTILITY EASEMENT
CMP	CORRUGATED METAL PIPE	PVC	POLYVINYL CHLORIDE
CMU	CONCRETE MASONRY UNIT	PVMT	PAVEMENT
CO	CLEANOUT	PVT	PRIVATE
CONC.	CONCRETE	R	RIM
COTG	CLEANOUT TO GRADE	RD	ROOF DRAIN
CP	CONTROL POINT	ROW	RIGHT-OF-WAY
Δ	DELTA	S	SLOPE (FT/FT)
D/W	DRIVEWAY	SD	STORM DRAIN
DIA.,Ø	DIAMETER	SHT	SHEET
DIP	DUCTILE IRON PIPE	SS	SANITARY SEWER
E	EASTING	ST	STREET
EXIST./EX.	EXISTING	STA	STATION
FDC	FIRE DEPARTMENT CONNECTION	STD	STANDARD
FF	FINISH FLOOR ELEVATION	S/W	SIDEWALK
FG	FINISH GRADE	TC	TOP OF CURB
FH	FIRE HYDRANT	TD	TRENCH DRAIN
FL	FLOWLINE	TG	TOP OF GROUND
GB	GRADE BREAK	TP	TOP OF PAVEMENT
GV	GATE VALVE	TRANS.	TRANSFORMER
H	HEIGHT	TYP	TYPICAL
HP	HIGH POINT	UG	UNDERGROUND
ID	INSIDE DIAMETER	UGE	UNDERGROUND ELECTRIC
IE	INVERT ELEVATION	UNO	UNLESS NOTED OTHERWISE
INV	INVERT	W	WATER
IRR.	IRRIGATION	W/	WITH
MIN	MINIMUM	WCR	WHEEL CHAIR RAMP
N	NORTHING	WM	WATER METER
OD	OUTSIDE DIAMETER	WV	WATER VALVE
OF	OUTFALL		

NOTICE TO EXCAVATORS:
ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0100. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER.
(NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503)-232-1987).

POTENTIAL UNDERGROUND FACILITY OWNERS

Call before you dig.

Oregon 811 UTILITY NOTIFICATION CENTER or 800-332-2344

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C3.0	HORIZONTAL CONTROL & PAVING PLAN
C4.0	UTILITY PLAN
C5.0	GRADING PLAN
C6.0	CIVIL DETAILS

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800 Willamette Street, Suite 400
Eugene, OR 97401
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F: 541.684.4909
www.kpff.com

STAMP
REGISTERED PROFESSIONAL ENGINEER
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OREGON
MAY 29, 2014
ANNA LUTTRELL BACKUS
EXPIRATION DATE: 12/31/2027

REVISION	DATE	DESCRIPTION

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DRAWN BY:	MAR
CHECKED BY:	AB
PLOT DATE:	11/17/26 1:34pm
PLOTTED BY:	ABackus
DWG NAME:	2500127-01CV.dwg
TAB NAME:	C1.0

33390 Nilsbock Lane, Creswell, Oregon

CRESWELL HIGH SCHOOL - CTE BUILDING

CIVIL NOTES & ABBREVIATIONS

SHEET NO.
C1.0

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Plotted: 11/17/26 at 1:34pm By: ABackus
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CONSTRUCTION SPECIFICATIONS

EARTH MOVING

1.1 SUBMITTALS

A. PRODUCT DATA

B. AGGREGATE SIEVE ANALYSIS

C. GROWING MEDIA (AT LEAST 14 DAYS IN ADVANCE OF CONSTRUCTION).

1.2 PROJECT CONDITIONS

A. UTILITY LOCATOR SERVICE: NOTIFY UTILITY LOCATOR SERVICE FOR AREA WHERE PROJECT IS LOCATED BEFORE BEGINNING EARTH MOVING OPERATIONS.

B. EXISTING UTILITIES: DO NOT INTERRUPT UTILITIES SERVICE FACILITIES OCCUPIED BY OWNER OR OTHER UNLESS PERMITTED IN WRITING BY ENGINEER AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY UTILITY SERVICE ACCORDING TO REQUIREMENT INDICATED.

C. SITE INFORMATION: RESEARCH PUBLIC UTILITY RECORDS AND VERIFY EXISTING UTILITY LOCATIONS PRIOR TO ORDERING ANY MATERIAL. NOTIFY THE ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE FOUND IN THE PROJECT SURVEY.

1.3 SOIL MATERIALS

D. GENERAL: PROVIDE BORROW SOIL MATERIALS WHEN SUFFICIENT SATISFACTORY SOIL MATERIALS ARE NOT AVAILABLE FROM EXCAVATIONS.

E. SATISFACTORY SOILS: SOIL CLASSIFICATION GROUPS GW, GP, GM, SW, SP, AND SM ACCORDING TO ASTM D 2487, OR A COMBINATION OF THESE GROUPS; FREE OF ROCK OR GRAVEL LARGER THAN 3 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION, AND OTHER DELETERIOUS MATTER.

F. UNSATISFACTORY SOILS: SOIL CLASSIFICATION GROUPS GC, SC, CL, ML, OL, CH, MH, OH, AND PT ACCORDING TO ASTM D 2487, OR A COMBINATION OF THESE GROUPS.

9. UNSATISFACTORY SOILS ALSO INCLUDE SATISFACTORY SOILS NOT MAINTAINED WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT AT TIME OF COMPACTION.

D. BASE COURSE: USE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION 3/4-INCH-0-INCH BASE AGGREGATE.

E. ENGINEERED FILL: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; ASTM D 2940; WITH AT LEAST 90 PERCENT PASSING A 3-INCH SIEVE AND NOT MORE THAN 12 PERCENT PASSING A NO. 200 SIEVE.

F. BEDDING COURSE: USE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION 3/4-INCH-0-INCH BASE AGGREGATE.

G. DRAINAGE COURSE: NARROWLY GRADED MIXTURE OF WASHED CRUSHED STONE, OR CRUSHED OR UNCRUSHED GRAVEL; ASTM D 448; COARSE-AGGREGATE GRADING SIZE 67; WITH 100 PERCENT PASSING A 1-1/2-INCH SIEVE AND 0 TO 5 PERCENT PASSING A NO. 8 SIEVE.

H. BACKFILL AND FILL:

1. SATISFACTORY SOIL MATERIALS

2. INITIAL TRENCH BACKFILL:USE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION 3/4-INCH-0-INCH BASE AGGREGATE

I. DRAINAGE FILL: ANGULAR, GRANULAR MATERIAL WITH A MAXIMUM PARTICLE SIZE OF 2 INCHES AND SHALL MEET OREGON STANDARD SPECIFICATION 00430.11. THE MATERIAL SHALL BE FREE OF ROOTS, ORGANIC MATERIAL, AND OTHER UNSUITABLE MATERIALS; HAVE LESS THAN 2 PERCENT PASSING THE NO. 200 SIEVE (WASHED ANALYSIS); AND HAVE AT L3AST TWO MECHANICALLY FRACTURED FACES.

J. GROWING MEDIA: A LOOSE AND FRIABLE MATERIAL BLEND OF LOAMY SOIL, SAND AND COMPOST THAT IS 30-40 PERCENT COMPOST (BY VOLUME) AND MEET THE FOLLOWING HER CRITERIA:

1. PARTICLE GRADATION: A SIEVE ANALYSIS OF THE COMPLETE BLENDED MATERIAL SHALL BE CONDUCTED PER ASTM C117/C136, AASHTO T11/T27, OR ASTM D422/D140 AND MEET THE FOLLOWING GRADATION CRITERIA:

SIEVE SIZE	PERCENT PASSING
1 INCH	100
#4	75-100
#10	40-100
#40	15-50
#100	5-25
#200	5-15

THE BLEND SHALL HAVE A COEFFICIENT OF UNIFORMITY (D60*D10) EQUAL TO OR GREATER THAN 6 TO ENSURE IT IS WELL GRADED.

2. ACIDITY: PH OF THE BLENDED MATERIAL SHALL BE TESTED AND BE BETWEEN 6 AND 8.

3. COMPOST: THE COMPOST SHALL BE DERIVED FROM PLANT MATERIAL AND PROVIDED BY A MEMBER OF THE US COMPOSTING COUNCIL SEAL OF TESTING ASSURANCE (STA) PROGRAM. SEE WWW. COMPSOTINGCOUNCIL.ORG FOR A LIST OF LOCAL PROVIDERS. THE COMPOST SHALL BE A RESULT OF BIOLOGICAL DEGRADATION AND TRANSFORMATION OF PLANT-DERIVED MATERIALS UNDER CONDITIONS DESIGNED TO PROMOTE AEROBIC DECOMPOSITION. THE MATERIAL SHALL BE WELL COMPOSTED, FREE OF VIABLE WEED SEEDS, AND STABLE WITH REGARD TO OXYGEN CONSUMPTION AND CARBON DIOXIDE GENERATION. THE COMPOST SHALL HAVE NO VISIBLE FREE WATER AND PRODUCE NO DUST WHEN HANDLED. IT SHALL MEET THE FOLLOWING CRITERIA, AS REPORTED BY THE US COMPOSTING COUNCIL STA COMPOST TECHNICAL DATA SHEET PROVIDED BY THE VENDOR.

3.1. 100 PERCENT OF THE MATERIAL MUST PASS THROUGH A 1/2 INCH SCREEN.
3.2. THE PH OF THE MATERIAL SHALL BE BETWEEN 6 AND 8.
3.3. MANUFACTURED INSERT MATERIAL (PLASTIC, CONCRETE, CERAMICS, METAL, ETC.) SHALL BE LESS THAN 1.0 PERCENT BY WEIGHT.
3.4. THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 30 AND 70 PERCENT (DRY WEIGHT BASIS).
3.5. SOLUBLE SALT CONTENT SHALL BE LESS THAN 6.0 MMHOS/CM.
3.6. MATURITY INDICATOR SHALL BE GREATER THAN 80 PERCENT FOR GERMINATION AND VIGOR.
3.7. STABILITY SHALL BE 'STABLE' TO 'VERY STABLE'.
3.8. CARBON/NITROGEN (C/N) RATIO SHALL BE LESS THAN 25:1.
3.9. TRACE METALS TEST RESULT = 'PASS.'

4. BLEND: THE MATERIAL SHALL BE WELL MIXED AND HOMOGENOUS. IT SHALL BE FREE OF WOOD PIECES, PLASTICS, AND OTHER FOREIGN MATTER. THERE SHALL BE NO VISIBLE FREE WATER.

5. INFILTRATION: THE BLENDED MATERIAL SHALL HAVE A MINIMUM INFILTRATION RATE OF 2 INCHES PER HOUR. CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A 2 QUART SAMPLE FOR INITIAL TESTING.

K. CONTROLLED DENSITY FILL (CDF), ALSO REFERRED TO AS :CONTROLLED LOW STRENGTH MATERIAL (CLSM): HIGHLY FLOWABLE, LEAN CONCRETE MIX OF FLY ASH, CEMENT, FINE AGGREGATES, WATER AND ADMIXTURES MEETING THE FOLLOWING OTHER CRITERIA:

1. PORTLAND CEMENT: ASTM C150, TYPE I OR II.

2. AGGREGATES: NON-EXPANSIVE OR REACTIVE WITH 100 PERCENT PASSING A 3/8-INCH SIEVE AND LESS THAN 10 PERCENT PASSING THE NO. 200 SIEVE. AGGREGATES SHALL MEET THE REQUIREMENTS OF ASTM C33.

3. FLY ASH: CONFORM TO ASTM C618, CLASS F UNLESS OTHERWISE APPROVED.

4. WATER: POTABLE.

5. ADMIXTURES: AS NECESSARY TO IMPROVE FLOWABILITY WITHOUT SEGREGATION.

6. COMPRESSIVE STRENGTH: CDF SHALL ATTAIN A 28-DAY COMPRESSIVE STRENGTH OF 100 PSI - 200 PSI.

L. DECOMPOSED GRANITE: 4" DEEP 1/4" MINUS DECOMPOSED GRANITE COMPACTED IN TWO LIFTS OVER FILTER FABRIC OVER COMPACT SUBGRADE.

1.4 ACCESSORIES

A. DETECTABLE WARNING TAPE: ACID- AND ALKALI-RESISTANT, POLYETHYLENE FILM WARNING TAPE MANUFACTURED FOR MARKING AND IDENTIFYING UNDERGROUND UTILITIES, A MINIMUM OF 6 INCHES WIDE AND 4 MILS THICK, CONTINUOUSLY INSCRIBED WITH A DESCRIPTION OF THE UTILITY, WITH METALLIC CORE ENCASED IN A PROTECTIVE JACKET FOR CORROSION PROTECTION, DETECTABLE BY METAL DETECTOR WHEN TAPE IS BURIED UP TO 30 INCHES DEEP; COLORED TO COMPLY WITH LOCAL PRACTICE OR REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION OR AS FOLLOWS:

1. RED: ELECTRIC.

2. YELLOW: GAS, OIL, STEAM, AND DANGEROUS MATERIALS.

3. ORANGE: TELEPHONE AND OTHER COMMUNICATIONS.

4. BLUE: WATER SYSTEMS.

5. GREEN: SEWER SYSTEMS.

B. TRACER WIRE: 12 AWG MINIMUM SOLID COPPER INSULATED HIGH MOLECULAR WEIGHT POLYETHYLENE (HMW PE) TRACER WIRE OR APPROVED EQUAL. THE TRACER WIRE INSULATION SHALL BE GREEN FOR SEWER PIPE AND BLUE FOR WATERLINES AND BE A MINIMUM OF 45 MIL. THICK. JOINTS OR SPLICES SHALL BE WATERPROOF. THE WIRE SHALL BE RATED FOR 30 VOLT.

C. IMPERMEABLE LINER: PVC OR PDPE GEO-MEMBRANE TEXTURED ON ONE SIDE, 30 MIL (/076MM) MINIMUM.

D. DRAINAGE FABRIC: NONWOVEN GEOTEXTILE, SPECIFICALLY MANUFACTURED AS A DRAINAGE GEOTEXTILE; MADE FROM POLYOLEFIN, POLYESTERS, OR POLYAMIDES' AND WITH THE FOLLOWING PROPERTIES DETERMINED ACCORDING TO ASTM D 4759 AND REFERENCED STANDARD TEST METHODS:

1. GRAB TENSILE STRENGTH: 115 LBF MINIMUM ASTM D 4632.

2. TEAR STRENGTH: 40 LBF MINIMUM; ASTM D 4533.

3. PUNCTURE STRENGTH: 220 LBF MINIMUM; ASTM D 6241.

4. APPARENT OPENING SIZE: NO. 40 MAXIMUM; ASTM D 4751.

5. PERMITTIVITY: 0.5 SEC^{-1} MINIMUM: ASTM D 4491.

2.1 PREPARATION

A. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT, AND OTHER HAZARDS CREATED BY EARTH MOVING OPERATIONS. PROVIDE PROTECTIVE INSULATING MATERIALS AS NECESSARY.

B. PREVENT SURFACE WATER AND GROUND WATER FROM ENTERING EXCAVATIONS, FROM PONDING ON PREPARED SUBGRADES, AND FROM FLOODING PROJECT SITE AND SURROUNDING AREA.

C. PROTECT SUBGRADES AND FOUNDATION SOILS FROM FREEZING TEMPERATURES AND FROST. REMOVE TEMPORARY PROTECTION BEFORE PLACING SUBSEQUENT MATERIALS.

D. PROTECT SUBGRADES FROM SOFTENING, UNDERMINING, WASHOUT, AND DAMAGE BY RAIN OR WATER ACCUMULATION.

E. PROTECT ALL AREAS DESIGNATED TO BE INFILTRATION FACILITIES FROM FOOT OR EQUIPMENT TRAFFIC AND SURFACE WATER RUNOFF. DO NOT USE PROPOSED INFILTRATION FACILITIES TO DISPOSE OF SURFACE WATER RUNOFF DURING CONSTRUCTION. UNDER NO CIRCUMSTANCES SHALL MATERIAL AND EQUIPMENT BE STORED ON TOP OF THE INSTALLATION AREA. CONTRACTOR SHALL NOT BACKFILL FACILITY UNTIL ENGINEER HAS INSPECTED IT AND SIGNED OFF.

2.2 EXCAVATION

A. UNCLASSIFIED EXCAVATION: EXCAVATE TO SUBGRADE ELEVATIONS REGARDLESS OF THE CHARACTER OF SURFACE AND SUBSURFACE CONDITIONS ENCOUNTERED. UNCLASSIFIED EXCAVATED MATERIALS MAY INCLUDE ROCK, SOIL MATERIALS, AND OBSTRUCTIONS. NO CHANGES IN THE CONTRACT SUM OR THE CONTRACT TIME WILL BE AUTHORIZED FOR ROCK EXCAVATION OR REMOVAL OF OBSTRUCTIONS WITHOUT PRIOR APPROVAL BY THE ENGINEER.

1. IF EXCAVATED MATERIALS INTENDED FOR FILL AND BACKFILL INCLUDE UNSATISFACTORY SOIL MATERIALS AND ROCK, REPLACE WITH SATISFACTORY SOIL MATERIALS.

2.3 EXCAVATION FOR STRUCTURES

A. EXCAVATE TO INDICATED ELEVATIONS AND DIMENSIONS WITHIN A TOLERANCE OF PLUS OR MINUS 1 INCH. IF APPLICABLE, EXTEND EXCAVATIONS A SUFFICIENT DISTANCE FROM STRUCTURES FOR PLACING AND REMOVING CONCRETE FORMWORK, FOR INSTALLING SERVICES AND OTHER CONSTRUCTION, AND FOR INSPECTIONS.

1. EXCAVATIONS FOR FOOTINGS AND FOUNDATIONS: DO NOT DISTURB BOTTOM OF EXCAVATION. EXCAVATE BY HAND TO FINAL GRADE JUST BEFORE PLACING CONCRETE REINFORCEMENT. TRIM BOTTOMS TO REQUIRED LINES AND GRADES TO LEAVE SOLID BASE TO RECEIVE OTHER WORK.

2.4 EXCAVATION FOR WALKS AND PAVEMENTS

A. EXCAVATE SURFACES UNDER WALKS AND PAVEMENTS TO INDICATED L;INES, CROSS SECTIONS, ELEVATIONS, AND SUBGRADE.

2.5 EXCAVATION FOR UTILITY TRENCHES

A. EXCAVATE TRENCHES TO INDICATED GRADIENTS, LINES, DEPTHS, AND ELEVATIONS.

B. EXCAVATE TRENCHES TO UNIFORM WIDTHS TO PROVIDE THE FOLLOWING CLEARANCE ON EACH SIDE OF PIPE OR CONDUIT. EXCAVATE TRENCH WALLS VERTICALLY FROM TRENCH BOTTOM TO 12 INCHES HIGHER THAN TOP OF PIPE OR CONDUIT UNLESS OTHERWISE INDICATED.

1. CLEARANCE: 6 INCHES EACH SIDE OF PIPE OR CONDUIT.

C. TRENCH BOTTOMS: EXCAVATE AND SHAPE TRENCH BOTTOMS TO PROVIDE UNIFORM BEARING AND SUPPORT OF PIPES AND CONDUIT. SHAPE SUBGRADE AND BEDDING COURSE TO PROVIDE CONTINUOUS SUPPORT OF BELLS, JOINTS, AND BARRELS OF PIPES AND FOR JOINTS, FITTINGS AND BODIES OF CONDUITS. REMOVE PROJECTING STONES AND SHARP OBJECTS ALONG TRENCH SUBGRADE.

1. EXCAVATE TRENCHES 6 INCHES DEEPER THAN ELEVATION REQUIRED IN ROCK OR OTHER UNYIELDING BEARING MATERIAL, 4 INCHES DEEPER ELSEWHERE, TO ALLOW FOR BEDDING COURSE. HAND EXCAVATE FOR BELL OF PIPES.

2. EXCAVATE UTILITY STRUCTURES TO PROVIDE 6 INCHES CLEARANCE (ENLARGE AS NEEDED) TO ALLOW FOR COMPACTION OF BACKFILL MATERIAL.

2.6 SUBGRADE INSPECTION

A. PROOF-ROLL SUBGRADE WITH A PNEUMATIC-TIRED DUMP TRUCK TO IDENTIFY SOFT POCKETS AND AREAS OF EXCESS YIELDING. DO NOT PROOF-ROLL WET OR SATURATED SUBGRADES. DO NOT PROOF-ROLL SUBGRADE IN INFILTRATION FACILITIES.

B. SOFT POCKETS AND AREAS OF EXCESS YIELDING THAT HAVE BEEN IDENTIFIED SHALL BE SCARIFIED AND MOISTENED OR AERATED, OR REMOVED AND REPLACED WITH SUITABLE SOIL MATERIALS TO THE DEPTH REQUIRED. RE-COMPACT AND RETEST UNTIL SPECIFIED COMPACTION IS OBTAINED.

C. RECONSTRUCT SUBGRADES DAMAGED BY FREEZING TEMPERATURES, FROST, RAIN, ACCUMULATED WATER, OR CONSTRUCTION ACTIVITIES, AS DIRECTED BY ENGINEER, WITHOUT ADDITIONAL COMPENSATION

2.7 UNAUTHORIZED EXCAVATION

C. FILL UNAUTHORIZED EXCAVATION UNDER FOUNDATIONS OR WALL FOOTINGS BY EXTENDING BOTTOM ELEVATION OF CONCRETE FOUNDATION OR FOOTING TO EXCAVATION BOTTOM, WITHOUT ALTERING TOP ELEVATION. LEAN CONCRETE FILL WITH 28-DAY COMPRESSIVE STRENGTH 2500 PSI, MAY BE USED WHEN APPROVED BY ENGINEER.

1. FILL UNAUTHORIZED EXCAVATIONS UNDER OTHER CONSTRUCTION, PIPE, OR CONDUITS AD DIRECTED BY ENGINEER

2.8 STORAGE OF SOUL MATERIALS

D. STOCKPILE BORROW SOIL MATERIALS AND EXCAVATED SATISFACTORY SOIL MATERIALS WITHOUT INTERMIXING. PLACE, GRADE, AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WINDBLOWN DUST.

1. STOCKPILE SOIL MATERIALS AWAY FROM EDGE OF EXCAVATIONS. DO NOT STORE WITHIN DRIP LINE OF REMAINING TREES.

2.9 BACKFILLS AND FILLS

A. BACKFILL: PLACE AND COMPACT BACKFILL IN EXCAVATIONS PROMPTLY, BUT NOT BEFORE COMPLETING THE FOLLOWING:

1. CONSTRUCTION BELOW FINISH GRADE INCLUDING, WHERE APPLICABLE, DAMPPROOFING, WATERPROOFING, AND PERIMETER INSULATION.

2. SURVEYING LOCATIONS OF UNDERGROUND UTILITIES FOR RECORD DOCUMENTS.

3. INSPECTING AND TESTING UNDERGROUND UTILITIES.

4. REMOVING CONCRETE FORMWORK.

5. REMOVING TRASH AND DEBRIS.

6. REMOVING TEMPORARY SHORING AND BRACING, AND SHEETING.

7. INSTALLING PERMANENT OR TEMPORARY HORIZONTAL BRACING ON HORIZONTALLY SUPPORTED WALLS.

2.10 UTILITY TRENCH BEDDING

A. PLACE BEDDING ON SUBGRADE FREE OF MUD, FROST, SNOW, OR ICE.

B. PLACE AND COMPACT BEDDING COURSE ON TRENCH BOTTOMS AND WHERE IDICATED. SHAPE BEDDING COURSE TO PROVIDE CONTINUOUS SUPPORT FOR BELLS, JOINTS, AND BARRELS OF PIPES AND FOR JOINTS, FITTINGS AND BODIES OF CONDUITS.

2.11 UTILITY TRENCH BACKFILL

A. TRENCHES UNDER FOOTINGS: BACKFILL TRENCHES EXCAVATED UNDER FOOTINGS WITH SATISFACTORY SOIL OR APPROVED BACKFILL TO WITHIN 18 INCHES FROM THE BOTTOM OF FOOTINGS ELEVATION; FILL REMAINING TRENCH EXCAVATION WITH CONCRETE UP TO THE ELEVATION OF BOTTOM OF FOOTINGS. CONCRETE IS SPECIFIED IN "CAST-IN-PLACE CONCRETE."

B. PLACE AND COMPACT INITIAL TRENCH BACKFILL MATERIAL, FREE OF PARTICLES LARGER THAN 1 INCH IN ANY DIMENSION, TO A HEIGHT OF 12 INCHES OVER THE PIPE OR CONDUIT.

1. CAREFULLY COMPACT INITIAL BACKFILL UNDER PIPE HAUNCHES AND COMPACT EVENLY UP ON BOTH SIDES AND ALONG THE FULL LENGTH OF PIPING OR CONDUIT TO AVOID DAMAGE OR DISPLACEMENT OF PIPING OR CONDUIT. COORDINATE BACKFILLING WITH UTILITIES TESTING.

C. PLACE AND COMPACT FINAL BACKFILL OF SATISFACTORY SOIL TO FINAL SUBGRADE ELEVATION.

D. INSTALL WARNING TAPE DIRECTLY ABOVE UTILITIES, 12 INCHES BELOW FINISHED GRADE, EXCEPT 6 INCHES BELOW SUBGRADE UNDER PAVEMENTS AND SLABS.

E. INSTALL TRACER WIRE IN A CONTINUOUS FASHION ABOVE THE UTILITY IN SUCH A MANNER AS TO BE ABLE TO PROPERLY TRACE UTILITY LINES WITHOUT LOSS OR DETERIORATION OF SIGNAL OR WITHOUT THE TRANSMITTED SIGNAL MIGRATING OFF THE TRACER WIRE. BRING TRACER WIRE TO THE SURFACE AT EVERY BOX, VAULT, DRAINAGE STRUCTURE, OR MANHOLE.

2.12 DRAINAGE FILL

A. COMPACTION OF THE NATIVE SOIL SUBGRADE SHOULD BE LIMITED IN ORDER TO PREVENT A REDUCTION THE PERMEABILITY OF THE SOIL.

1. WHERE EROSION OF SUBGRADE HAS CAUSED ACCUMULATION OF FINE MATERIALS AND/OR SURFACE PONDING, THIS MATERIAL SHALL BE REMOVED WITH LIGHT EQUIPMENT AND UNDERLYING SOILS SCARIFIED TO A MINIMUM DEPTH OF 3 INCHES WITH A YORK RAKE OR EQUIVALENT AND LIGHT TRACTOR.

2. WHERE SUBGRADE HAS BEEN COMPACTED DUE TO CONSTRUCTION TRAFFIC, SUBGRADE SHALL BE SCARIFIED OR REMOVED TO A DEPTH SUFFICIENT TO MATCH THE NATURALLY OCCURRING INSITU STATE. ADD ADDITIONAL BASE COURSE MATERIAL TO MEET DESIGN GRADES AT NO COST TO THE OWNER.

3. BRING SUBGRADE OF BASE COURSE TO LINE, GRADE AND ELEVATIONS INDICATED. FILL AND LIGHTLY REGRADE ANY AREAS DAMAGED BY EROSION, PONDING, OR TRAFFIC COMPACTION BEFORE THE PLACING OF STONE.

B. PLACE DRAINAGE GEOTEXTILE OVER PREPARED SUBGRADE, OVERLAPPING ENDS AND EDGES AT LEAST 12 INCHES. SECURE IN PLACE TO PREVENT WRINKLING

C. PLACE DRAINAGE FILL AND COMPACT BY TAMPING WITH A PLATE VIBRATOR, AND SCREED TO DEPTH INDICATED. FOR DRAINAGE FILL THAT EXCEEDS 8 INCHES IN COMPACTED THICKNESS, PLACE FILL IN LAYERS OF EQUAL THICKNESS, WITH NO COMPACTED LAYER MORE THAN 8 INCHES OR LESS THAN 4 INCHES THICK.

D. PLACE DRAINAGE GEOTEXTILE OVER COMPACTED DRAINAGE FILL, OVERLAPPING ENDS AND EDGES AT LEAST 12 INCHES.

2.13 SOIL FILL

A. PLOW, SCARIFY, BENCH, OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SO FILL MATERIAL WILL BOND WITH EXISTING MATERIAL.

B. PLACE AND COMPACT INITIAL TRENCH BACKFILL MATERIAL, FREE OF PARTICLES LARGER THAN 1 INCH

1. UNDER GRASS AND PLANTED AREAS, USE SATISFACTORY SOIL MATERIAL.

2. UNDER WALKS AND PAVEMENTS, USE SATISFACTORY SOIL MATERIAL.

3. UNDER STEPS AND RAMPS, USE ENGINEERED FILL.

4. UNDER FOOTINGS AND FOUNDATIONS, USE ENGINEERED FILL.

5. UNDER AND AROUND UTILITY STRUCTURES, USE ENGINEERED FILL.

2.14 SOIL MOISTURE CONTROL

A. UNIFORMLY MOISTEN OR AERATE SUBGRADE AND EACH SUBSEQUENT FILL OR BACKFILL SOIL LAYER BEFORE COMPACTION TO WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT.

1. DO NOT PLACE BACKFILL OR FILL SOIL MATERIAL ON SURFACES THAT ARE MUDDY, FROZEN, OR CONTAIN FROST OR ICE.

2. REMOVE AND REPLACE, OR SCARIFY AND AIR DRY, OTHERWISE SATISFACTORY SOIL MATERIAL THAT EXCEEDS OPTIMUM MOISTURE CONTENT BY 3 PERCENT AND IS TOO WET TO COMPACT TO SPECIFIED DRY UNIT WEIGHT.

2.15 COMPACTION OF SOIL BACKFILLS AND FILLS

B. PLACE BACKFILL AND FILL SOIL MATERIALS IN LAYERS NOT MORE THAN 8 INCHES LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.

C. PLACE BACKFILL AND FILL SOIL MATERIALS EVENLY ON ALL SIDES OF STRUCTURES TO REQUIRED ELEVATIONS, AND UNIFORMLY ALONG THE FULL LENGTH OF EACH STRUCTURE.

D. COMPACT SOIL MATERIALS TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 1557:

1. UNDER STRUCTURES, BUILDING SLABS, STEPS, AND PAVEMENTS, SCARIFY AND RECOMPACT TOP 12 INCHES OF EXISTING SUBGRADE AND EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT 95 PERCENT.

2. UNDER WALKWAYS, SCARIFY AND RECOMPACT TOP 6 INCHES BELOW SUBGRADE AND COMPACT EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT 92 PERCENT.

3. UNDER TURF OR UNPAVED AREAS, SCARIFY AND RECOMPACT TOP 6 INCHES BELOW SUBGRADE AND COMPACT EACH LAYER OF BACKFILL OR FILL SOIL MATERIAL AT 85 PERCENT.

4. FOR UTILITY TRENCHES, COMPACT EACH LAYER OF INITIAL AND FINAL BACKFILL SOIL MATERIAL AT 95 PERCENT.

2.16 GRADING

A. GENERAL: UNIFORMLY GRADE AREAS TO A SMOOTH SURFACE, FREE OF IRREGULAR SURFACE CHANGES. COMPLY WITH COMPACTION REQUIREMENTS AND GRADE TO CROSS SECTIONS, LINES, AND ELEVATIONS INDICATED.

2.17 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

A. PLACE SUBBASE COURSE AND BASE COURSE ON SUBGRADES FREE OF MUD, FROST, SNOW, OR ICE.

B. ON PREPARED SUBGRADE, PLACE SUBBASE COURSE AND BASE COURSE UNDER PAVEMENTS AND WALKS AS FOLLOWS:

1. SHAPE SUBBASE COURSE AND BASE COURSE TO REQUIRED CROWN ELEVATIONS AND CROSS-SLOPE GRADES.

2. PLACE SUBBASE COURSE AND BASE COURSE THAT EXCEEDS 6 INCHES IN COMPACTED THICKNESS IN LAYERS OF EQUAL THICKNESS, WITH NO COMPACTED LAYER MORE THAN 6 INCHES THICK OR LESS THAN 3 INCHES THICK.

3. COMPACT SUBBASE COURSE AND BASE COURSE AT OPTIMUM MOISTURE CONTENT TO REQUIRED GRADES, LINES, CROSS SECTIONS, AND THICKNESS TO NOT LESS THAN 95 PERCENT OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 698 OR ASTM D 1557.

2.18 FIELD QUALITY CONTROL

A. TESTING AGENCY: CONTRACTOR WILL ENGAGE A QUALIFIED GEOTECHNICAL ENGINEERING TESTING AGENCY TO PERFORM TESTS AND INSPECTIONS.

B. ALLOW TESTING AGENCY TO INSPECT AND TEST SUBGRADES AND EACH FILL OR BACKFILL LAYER. PROCEED WITH SUBSEQUENT EARTH MOVING ONLY AFTER TEST RESULTS FOR PREVIOUSLY COMPLETED WORK COMPLY WITH REQUIREMENTS.

C. FOOTING SUBGRADE: AT FOOTING SUBGRADES, AT LEAST ONE TEST OF EACH SOIL STRATUM WILL BE PERFORMED TO VERIFY DESIGN BEARING CAPACITIES. SUBSEQUENT VERIFICATION AND APPROVAL OF OTHER FOOTING SUBGRADES MAY BE BASED ON A VISUAL COMPARISON OF SUBGRADE WITH TESTED SUBGRADE WHEN APPROVED BY ARCHITECT.

D. TESTING AGENCY WILL TEST COMPACTION OF SOILS IN PLACE ACCORDING TO ASTM D 1556, ASTM D 2167, ASTM D 2922, ASTM D 2937, AS APPLICABLE. TESTS WILL BE PERFORMED AT THE FOLLOWING LOCATIONS AND FREQUENCIES:

1. PAVED AND BUILDING SLAB AREAS: AT SUBGRADE AND AT EACH COMPACTED FILL AND BACKFILL LAYER, AT LEAST ONE TEST FOR EVERY 2000 SQ. FT. OR LESS OF PAVED AREA OR BUILDING SLAB, BUT IN NO CASE FEWER THAN THREE TESTS.

2. FOUNDATION WALL BACKFILL: AT EACH COMPACTED BACKFILL LAYER, AT LEAST ONE TEST FOR EACH 100 FEET OR LESS OF WALL LENGTH, BUT NO FEWER THAN TWO TESTS.

3. TRENCH BACKFILL: AT EACH COMPACTED INITIAL AND FINAL BACKFILL LAYER, AT LEAST ONE TEST FOR EACH 150 FEET OR LESS OF TRENCH LENGTH, BUT NO FEWER THAN TWO TESTS.

E. WITH THE APPROVAL OF THE ENGINEER, PROOF-ROLL TESTING OF SUBGRADE AND/OR AGGREGATE BASE MAY BE SUBSTITUTED FOR OTHER COMPACTION TESTING.

F. WHEN TESTING AGENCY REPORTS THAT SUBGRADES, FILLS, OR BACKFILLS HAVE NOT ACHIEVED DEGREE OF COMPACTION SPECIFIED, SCARIFY AND MOISTEN OR AERATE, OR REMOVE AND REPLACE SOIL MATERIALS TO DEPTH REQUIRED; RECOMPACT AND RETEST UNTIL SPECIFIED COMPACTION IS OBTAINED.

2.19 PROTECTION

A. PROTECTING GRADED AREAS: PROTECT NEWLY GRADED AREAS FROM TRAFFIC, FREEZING, AND EROSION. KEEP FREE OF TRASH AND DEBRIS.

B. REPAIR AND REESTABLISH GRADES TO SPECIFIED TOLERANCES WHERE COMPLETED OR PARTIALLY COMPLETED SURFACES BECOME ERODED, RUTTED, SETTLED, OR WHERE THEY LOSE COMPACTION DUE TO SUBSEQUENT CONSTRUCTION OPERATIONS OR WEATHER CONDITIONS.

C. WHERE SETTLING OCCURS BEFORE PROJECT CORRECTION PERIOD ELAPSES, REMOVE FINISH SURFACING,. BACKFILL WITH ADDITIONAL SOIL MATERIAL, COMPACT, AND RECONSTRUCT SURFACING.

1. RESTORE APPEARANCE, QUALITY, AND CONDITION OF FINISHED SURFACING TO MATCH ADJACENT WORK, AND ELIMINATE EVIDENCE OF RESTORATION TO GREATEST EXTENT POSSIBLE.

D. WEATHER PERMITTING AND AS APPROVED, STORMWATER INFILTRATION FACILITY PLANTS SHALL BE INSTALLED AS SOON AS POSSIBLE AFTER PLACING AND GRADING THE GROWING MEDIA IN ORDER TO MINIMIZE EROSION AND FURTHER COMPACTION.

2.20 DISPOSAL OF SURPLUS AND WASTE MATERIALS

B. REMOVE SURPLUS SATISFACTORY SOIL AND WASTE MATERIALS, INCLUDING UNSATISFACTORY SOIL, TRASH, AND DEBRIS, AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.

CONCRETE PAVING

1.1 SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED

B. DESIGN MIXTURES: FOR EACH CONCRETE PAVING MIXTURE. INCLUDE ALTERNATE DESIGN MIXTURES WHEN CHARACTERISTICS OF MATERIALS, PROJECT CONDITIONS, WEATHER, TEST RESULTS, OR OTHER CIRCUMSTANCES WARRANT ADJUSTMENTS.

C. MATERIAL CERTIFICATES: SIGNED BY MANUFACTURERS CERTIFYING THAT EACH OF THE FOLLOWING MATERIALS COMPILES WITH REQUIREMENTS:

1. CEMENTITIOUS MATERIALS.

2. ADMIXTURES.

3. CURING COMPOUNDS.

4. APPLIED FINISH MATERIALS.

5. BONDING AGENT OR EPOXY ADHESIVE.

6. JOINT FILLERS

D. MINUTES OF PREINSTALLATION CONFERENCE.

1.2 QUALITY ASSURANCE

A. READY-MIX-CONCRETE MANUFACTURER QUALIFICATIONS: A FIRM EXPERIENCED IN MANUFACTURING READY-MIXED CONCRETE PRODUCTS AND THAT COMPILES WITH ASTM C 94/C 94M REQUIREMENTS FOR PRODUCTION FACILITIES AND EQUIPMENT.

1. MANUFACTURER CERTIFIED ACCORDING TO NRMCA'S "CERTIFICATION OF READY MIXED CONCRETE PRODUCTION FACILITIES."

B. TESTING AGENCY QUALIFICATIONS: AN INDEPENDENT AGENCY QUALIFIED ACCORDING TO ASTM C 1077 AND ASTM E329 FOR TESTING INDICATED, AS DOCUMENTED ACCORDING TO ASTM E 548.

1. PERSONNEL CONDUCTING FIELD TESTS SHALL BE QUALIFIED AS ACI CONCRETE FIELD TESTING TECHNICIAN, GRADE 1, ACCORDING TO ACI CP-01 OR AN EQUIVALENT CERTIFICATION PROGRAM.

C. ACI PUBLICATIONS: COMPLY WITH ACI 301 UNLESS OTHERWISE INDICATED.

D. CONCRETE TESTING SERVICE: ENGAGE A QUALIFIED INDEPENDENT TESTING AGENCY TO PERFORM MATERIAL EVALUATION TESTS AND TO DESIGN CONCRETE MIXTURES.

E. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE TO COMPLY WITH REQUIREMENTS IN DIVISION 01 SECTION "PROJECT MANAGEMENT AND COOR

CONSTRUCTION SPECIFICATIONS

1.3 PROJECT CONDITIONS

A. TRAFFIC CONTROL: MAINTAIN ACCESS FOR VEHICULAR AND PEDESTRIAN TRAFFIC AS REQUIRED FOR OTHER CONSTRUCTION ACTIVITIES.

2.1 CONCRETE MATERIALS

A. CEMENTITIOUS MATERIAL: USE THE FOLLOWING CEMETITIOUS MATERIALS, OF SAME TYPE, BRAND, AND SOURCE THROUGHOUT PROJECT:

1. PORTLAND CEMENT: ASTM C 150, GRAY PORTLAND CEMENT TYPE II.
   a. FLY ASH: ASTM C 618, CLASS C.
   b. GROUND GRANULATED BLAST-FURNACE SLAG: ASTM C 989, GRADE 100 OR 120.

B. NORMAL-WEIGHT AGGREGATES: ASTM C 33, CLASS 4S OR CLASS 4M, UNIFORMLY GRADED. PROVIDE AGGREGATES FROM A SINGLE SOURCE.

1. MAXIMUM COARSE AGGREGATE SIZE: 1.5 INCH NOMINAL.
2. FINE AGGREGATE: FREE OF MATERIALS WITH DELETERIOUS REACTIVITY TO ALKALI IN CEMENT.

C. WATER: POTABLE AND COMPLYING WITH ASTM C 94/C 94M.

D. AIR-ENTRAINING ADMIXTURE: ASTM C 260.

E. CHEMICAL ADMIXTURES: ADMIXTURES CERTIFIED BY MANUFACTURER TO BE COMPATIBLE WITH OTHER ADMIXTURES AND TO CONTAIN NOT MORE THAN 0.1 PERCENT WATER-SOLUBLE CHLORIDE IONS BY MASS OF CEMENTITIOUS MATERIAL.

1. WATER-REDUCING ADMIXTURE: ASTM C 494/C 494M, TYPE A.
2. WATER-REDUCING AND RETARDING ADMIXTURE: ASTM C494/C 494M, TYPE D.
3. HIGH-RANGE, WATER-REDUCING ADMIXTURE: ASTM C 494/C494M, TYPE F.

2.2 CURING MATERIALS

A. ABSORPTIVE COVER: AASHTO M 182, CLASS 3, BURLAP CLOTH MADE FROM JUTE OR KENAF, WEIGHING APPROXIMATELY 9 OZ./SQ. YD. DRY OR COTTON MATS.

B. MOISTURE-RETAINING COVER: ASTM C171, POLYETHYLENE FILM OR WHITE BURLAP-POLYETHYLENE SHEET.

C. WATER: POTABLE.

D. EVAPORATION RETARDER: WATERBORNE, MONOMOLECULAR, FILM FORMING, MANUFACTURED FOR APPLICATION TO FRESH CONCRETE.

E. CLEAR, WATERBORNE, MEMBRANE-FORMING CURING COMPOUND: ASTM C 309, TYPE 1, CLASS B, DISSIPATING.

F. WHITE, WATERBORNE, MEMBRANE-FORMING CURING COMPOUND: ASTM C 309, TYPE 2, CLASS B, DISSIPATING.

2.3 RELATED MATERIALS

A. JOINT FILLERS: ASTM D 1751, ASPHALT-SATURATED CELLULOSIC FIBER IN PREFORMED STRIPS.

B. EPOXY BONDING ADHESIVE: ASTM C 881, TWO-COMPONENT EPOXY RESIN, CAPABLE OF HUMID CURING AND BONDING TO DAMP SURFACES, OF CLASS SUITABLE FOR APPLICATION TEMPERATURE AND OF GRADE REQUIREMENT.

2.4 CONCRETE MIXTURES

A. PREPARE DESIGN MIXTURES, PROPORTIONED ACCORDING TO ACI 301, WITH THE FOLLOWING PROPERTIES:

1. COMPRESSIVE STRENGTH (28 DAYS): 4000 PSI.
2. MAXIMUM WATER-CEMENTITIOUS MATERIALS RATIO AT POINT OF PLACEMENT: 0.45.
3. SLUMP LIMIT: 4 INCHES, PLUS OR MINUS 1 INCH.
4. AIR CONTENT: 5-1/2 PERCENT PLUS OR MINUS 1.5 PERCENT FOR I-INCH NOMINAL MAXIMUM AGGREGATE SIZE.
   a. WHEN FREQUENCY OF TESTING WILL PROVIDE FEWER THAN FIVE COMPRESSIVE-STRENGTH TESTS FOR EACH CONCRETE MIXTURE, TESTING SHALL BE CONDUCTED FROM AT LEAST FIVE RANDOMLY SELECTED BATCHES OR FROM EACH BATCH IF FEWER THAN FIVE ARE USED.
5. SLUMP: ASTM C 143/C 143M; ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.
6. AIR CONTENT: ASTM C 231, PRESSURE METHOD; ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX.

B. USE A QUALIFIED TESTING AGENCY FOR PREPARING AND REPORTING PROPOSED CONCRETE MIXTURE DESIGNS FOR THE TRIAL BATCH METHOD.

C. CHEMICAL ADMIXTURES: USE ADMIXTURES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

2.5 CONCRETE MIXING

A. READY-MIXED CONCRETE: MEASURE, BATCH, AND MIX CONCRETE MATERIALS AND CONCRETE ACCORDING TO ASTM C94/C 94M AND ASTM C 1116/C 1116M. FURNISH BATCH CERTIFICATES FOR EACH BATCH DISCHARGED AND USED IN THE WORK.

1. WHEN TEMPERATURE IS BETWEEN 85 DEG F AND 90 DEG F, REDUCE MIXING AND DELIVERY TIME FROM 1-1/2 HOURS TO 75 MINUTES; WHEN AIR TEMPERATURE IS ABOVE 90 DEG F, REDUCE MIXING AND DELIVERY TIME TO 60 MINUTES.

2.6 STEEL REINFORCEMENT

A. REINFORCING BARS: ASTM A 615/A 615M, GRADE 60; DEFORMED.

3.1 EXAMINATION AND PREPARATION

A. EXAMINE EXPOSED SUBGRADES AND SUBBASE SURFACES FOR COMPLIANCE WITH REQUIREMENTS FOR DIMENSIONAL, GRADING AND ELEVATION TOLERANCES.

B. PROOF-ROLL PREPARE SUBBASE SURFACE BELOW CONCRETE PAVING TO IDENTIFY SOFT POCKETS AND AREAS OF EXCESS YIELDING.

1. COMPLETELY PROOF-ROLL SUBBASE IN ONE DIRECTION. LIMIT VEHICLE SPEED TO 3 MPH.
2. PROOF-ROLL WITH A LOADED 10-WHEEL TANDEM-AXLE DUMP TRUCK WEIGHING NOT LESS THAN 15 TONS.
3. SUBBASE WITH SOFT SPOTS AND AREAS OF PUMPING OR RUTTING EXCEEDING DEPTH OF 1/2 INCH REQUIRE CORRECTION ACCORDING TO REQUIREMENTS IN DIVISION 31 SECTION "EARTH MOVING."

C. REMOVE LOOSE MATERIAL FROM COMPACTED SUBBASE SURFACES IMMEDIATELY BEFORE PLACING CONCRETE.

D. PROCEED WITH CONCRETE PAVEMENT OPERATIONS ONLY AFTER NONCONFORMING DCONDITIONS HAVE BEEN CORRECTED AND SUBGRADE IS READY TO RECEIVE PAVEMENT.

E. EDGING: AFTER INITIAL FLOATING, TOOL EDGES OF PAVING, GUTTERS, CURBS, AND JOINTS IN CONCRETE WITH AN EDGING TOOL TO A 1/4-INCH RADIUS. REPEAT TOOLING OF EDGES AFTER APPLYING SURFACE FINISHES. ELIMINATE EDGING-TOOL MARKS ON CONCRETE SURFACES.

3.2 CONCRETE PLACEMENT

A. INSPECTION: BEFORE PLACING CONCRETE, INSPECT AND COMPLETE FORMWORK INSTALLATION, STEEL REINFORCEMENT, AND ITEMS TO BE EMBEDDED OR CAST IN. NOTIFY OTHER TRADES TO PERMIT INSTALLATION OF THEIR WORK.

B. REMOVE SNOW, ICE OR FROST FROM SUBBASE SURFACE AND REINFORCEMENT BEFORE PLACING CONCRETE. DO NOT PLACE CONCRETE ON FROZEN SURFACES.

C. MOISTEN SUBBASE TO PROVIDE A UNIFORM DAMPENED CONDITION AT TIME CONCRETE IS PLACED. DO NOT PLACE CONCRETE AROUND MANHOLES OR OTHER STRUCTURES UNTIL THEY ARE AT REQUIRED FINISH ELEVATION AND ALIGNMENT.

D. COMPLY WITH ACI 301 REQUIREMENTS FOR MEASURING, MIXING, TRANSPORTING, PLACING, AND CONSOLIDATING CONCRETE.

E. DO NOT ADD WATER TO CONCRETE DURING DELIVERY OR AT PROJECT SITE.

F. DO NOT ADD WATER TO FRESH CONCRETE AFTER TESTING.

G. CONSOLIDATE CONCRETE ACCORDING TO ACI 301 BY MECHANICAL VIBRATING EQUIPMENT SUPPLEMENTED BY HAND SPADING, RODDING, OR TAMPING.

1. CONSOLIDATE CONCRETE ALONG FACE OF FORMS AND ADJACENT TO TRANSVERSE JOINTS WITH AN INTERNAL VIBRATOR, KEEP VIBRATOR AWAY FROM JOINT ASSEMBLIES, REINFORCEMENT, OR SIDE FORMS. USE ONLY SQUARE-FACED SHOVELS FOR HAND SPREADING AND CONSOLIDATION. CONSOLIDATE WITH CARE TO PREVENT DISLOCATING REINFORCEMENT, DOWELS, AND JOINT DEVICES.

H. PLACE CONCRETE IN TWO OPERATIONS; STRIKE OFF INITIAL POUR FOR ENTIRE WIDTH OF PLACEMENT AND TO THE REQUIRED DEPTH BELOW FINISH SURFACE. LAY WELDED WIRE FABRIC OR FABRICATED BAR MATS IMMEDIATELY IN FINAL POSITION. PLACE TOP LAYER OF CONCRETE, STRIKE OFF, AND SCREED.

1. REMOVE AND REPLACE CONCRETE THAT HAS BEEN PLACED FOR MORE THAN 15 MINUTES WITHOUT BEING COVERED BY TOP LAYER, OR USE BONDING AGENT IF APPROVED BY ARCHITECT.

I. DEPOSIT AND SPREAD CONCRETE IN A CONTINUOUS OPERATION BETWEEN TRANSVERSE JOINTS. DO NOT PUSH OR DRAG CONCRETE INTO PLACE OR USE VIBRATOR TO MOVE CONCRETE INTO PLACE.

J. SCREED PAVING SURFACE WITH A STRAIGHTEDGE AND STRIKE OFF.

K. COMMENCE INITIAL FLOATING USING BULL FLOATS OR DARBIES TO IMPART AN OPEN-TEXTURED AND UNIFORM SURFACE PLANE BEFORE EXCESS MOISTURE OR BLEED WATER APPEARS ON THE SURFACE. DO NOT FURTHER DISTURB CONCRETE SURFACES BEFORE BEGINNING FINISHING OPERATIONS OR SPREADING SURFACE TREATMENTS.

M. WHEN ADJOINING PAVEMENT LANES ARE PLACED IN SEPARATE POURS, DO NOT OPERATE EQUIPMENT ON CONCRETE UNTIL PAVEMENT HAS ATTAINED 85 PERCENT OF ITS -DAY COMPRESSIVE STRENGTH.

N. COLD-WEATHER PLACEMENT: COMPLY WITH ACI 306.1 AND AS FOLLOWS, PROTECT CONCRETE WORK FROM PHYSICAL DAMAGE OR REDUCED STRENGTH THAT COULD BE CAUSED BY FROST, FREEZING ACTIONS, OR LOW TEMPERATURES.

1. WHEN AIR TEMPERATURE HAS FALLEN TO OR IS EXPECTED TO FALL BELOW 40 DEG F, UNIFORMLY HEAT WATER AND AGGREGATES BEFORE MIXING TO OBTAIN A CONCRETE MIXTURE TEMPERATURE OF NOT LESS THAN 50 DEG F AND NOT MORE THAN 80 DEG F AT POINT OF PLACEMENT.
2. DO NOT USE FROZEN MATERIALS OR MATERIALS CONTAINING ICE OR SNOW.
3. DO NOT USE CALCIUM CHLORIDE, SALT, OR OTHER MATERIALS CONTAINING ANTIFREEZE AGENTS OR CHEMICAL ACCELERATORS UNLESS OTHERWISE SPECIFIED AND APPROVED IN MIX DESIGNS.

O. HOT WEATHER PLACEMENT: COMPLY WITH ACI 301 AND AS FOLLOWS WHEN HOT-WEATHER CONDITIONS EXIST:

1. COOL INGREDIENTS BEFORE MIXING TO MAINTAIN CONCRETE TEMPERATURE BELOW 90 DEG F AT TIME OF PLACEMENT. CHILLED MIXING WATER OR CHOPPED ICE MAY BE USED TO CONTROL TEMPERATURE, PROVIDED WATER EQUIVALENT OF ICE IS CALCULATED TO TOTAL AMOUNT OF MIXING WATER. USING LIQUID NITROGEN TO COOL CONCRETE IS CONTRACTOR'S OPTION.
2. COVER STEEL REINFORCEMENT WITH WATER-SOAKED BURLAP SO STEEL TEMPERATURE WILL NOT EXCEED AMBIENT AIR TEMPERATURE IMMEDIATELY BEFORE EMBEDDING IN CONCRETE. FOG-SPRAY FORMS, STEEL REINFORCEMENT, AND SUBGRADE JUST BEFORE PLACING CONCRETE. KEEP SUBGRADE MOISTURE UNIFORM WITHOUT STANDING WATER, SOFT SPOTS, OR DRY AREAS.
3. FOG-SPRAY FORMS, STEEL REINFORCEMENT,A ND SUBGRADE JUST BEFORE PLACING CONCRETE. KEEP SUBGRADE MOISTURE UNIFORM WITHOUT STANDING WATER, SOFT SPOTS, OR DRY AREAS.

3.3 FLOAT FINISHING

A. GENERAL: DO NOT ADD WATER TO CONCRETE SURFACES DURING FINISHING OPERATIONS.

B. BLOAT FINISH: BEGIN THE SECOND FLOATING OPERATION WHEN BLEED-WATER SHEEN HAS DISAPPEARED AND CONCRETE SURFACE HAS STIFFENED SUFFICIENTLY TO PERMIT OPERATIONS. FLOAT SURFACES TO TRUE PLANS. CUT DOWN HIGH SPOTS AND FILL LOW SPOTS. REFLOAT SURFACE IMMEDIATELY TO UNIFORM GRANULAR TEXTURE.

1. MEDIUM-TO-COARSE-TEXTURED BROOM FINISH: PROVIDE A COARSE FINISH BY STRIATING FLOAT-FINISHED CONCRETE SURFACE 1/16 TO 1/8 INCH DEEP WITH A STIFF-BRISTLED BROOM, PERPENDICULAR TO LINE OF TRAFFIC.

C. EDGING: TOOL EDGES OF PAVEMENT, GUTTERS, CURBS, AND JOINTS IN CONCRETE AFTER INITIAL FLOATING WITH AN EDGING TOOL TO A 1/4 INCH RADIUS. REPEAT TOOLING OF EDGES AFTER APPLYING SURFACE FINISHED. ELIMINATE TOOL MARKS ON CONCRETE SURFACES.

3.4 CONCRETE PROTECTION AND CURING

A. GENERAL: PROTECT FRESHLY PLACED CONCRETE FORM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES.

B. COMPLY WITH ACI 306.1 FOR COLD-WEATHER PROTECTION.

C. EVAPORATION RETARDER: APPLY EVAPORATION RETARDER TO CONCRETE SURFACES IF HOT, DRY, OR WINDY CONDITIONS CAUSE MOISTURE LOSS APPROACHING 0.2 LB/SQ. FT X H BEFORE AND DURING FINISHING OPERATIONS. APPLY ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AFTER PLACING, SCREEDING, AND BULL FLOATING OR DARBYING CONCRETE BUT BEFORE FLOAT FINISHING.

D. BEGIN CURING AFTER FINISHING CONCRETE BUT NOT BEFORE FREE WATER HAS DISAPPEARED FROM CONCRETE SURFACE.

E. CURING METHODS: CURE CONCRETE BY MOISTURE CURING, MOISTURE-RETAINING-COVER CURING, CURING COMPOUND OR A COMBINATION OF THESE AS FOLLOWS.

1. MOIST CURING: KEEP SURFACES CONTINUOUSLY MOIST FOR NOT LESS THAN SEVEN DAYS WITH THE FOLLOWING MATERIALS:
   a. WATER
   b. CONTINUOUS WATER-FOG SPRAY.
   c. ABSORPTIVE COVER, WATER SATURATED AND KEPT CONTINUOUSLY WET. COVER CONCRETE SURFACES AND EDGES WITH 12-INCH LAP OVER ADJACENT ABSORPTIVE COVERS.
2. MOISTURE-RETAINING-COVER CURING: COVER CONCRETE SURFACES WITH MOISTURE-RETAINING COVER FOR CURING CONCRETE, PLACED IN WIDEST PRACTICABLE WIDTH, WITH SIDES AND ENDS LAPPED AT LEAST 12 INCHES AND SEALED BY WATERPROOF TAPE OR ADHESIVE. IMMEDIATELY REPAIR ANY HOLES OR TEARS DURING CURING PERIOD USING COVER MATERIAL AND WATERPROOF TAPE.
3. CURING COMPOUND: APPLY UNIFORMLY IN CONTINUOUS OPERATION BY POWER SPRAY OR ROLLER ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. RECOAT AREAS SUBJECTED TO HEAVY RAINFALL WITHIN THREE HOURS AFTER INITIAL APPLICATION. MAINTAIN CONTINUITY OF COATING AND REPAIR DAMAGE DURING CURING PERIOD.

3.5 PAVING TOLERANCES

A. COMPLY WITH TOLERANCES IN ACI 117 AS FOLLOWS:

1. ELEVATION: 1/4 INCH.
2. THICKNESS: PLUS 3/8 INCH, MINUS 1/4 INCH.
3. SURFACE: GAP BELOW 10-FOOT-LONG, UNLEVELED STRAIGHTEDGE NOT TO EXCEED 1/4 INCH.
4. JOINT SPACING: 1/2 INCH.
5. CONTRACTION JOINT DEPTH: PLUS 1/8 INCH.
6. JOINT WIDTH: PLUS 1/8 INCH, NO MINUS.
7. LATERAL ALIGNMENT AND SPACING OF TIE BARS AND DOWELS: 1/4 INCH.
8. VERTICAL ALIGNMENT OF TIE BARS AND DOWELS: 1/4 INCH.
9. ALIGNMENT OF TIE-BAR END RELATIVE TO LINE PERPENDICULAR TO PAVEMENT EDGE: 1/2 INCH.
10. ALIGNMENT OF DOWEL-BAR END RELATIVE TO LINE PERPENDICULAR TO PAVEMENT EDGE: LENGTH OF DOWEL 1/4 INCH PER 12 INCHES.

3.6 FIELD QUALITY CONTROL

A. TESTING AGENCY: ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM FIELD TESTS AND INSPECTIONS AND PREPARE TEST REPORTS.

B. TESTING SERVICES: TESTING OF COMPOSITE SAMPLES OF FRESH CONCRETE OBTAINED ACCORDING TO ASTM C 172 SHALL BE PERFORMED ACCORDING TO THE FOLLOWING REQUIREMENTS:

1. TESTING FREQUENCY: OBTAIN AT LEAST 1 COMPOSITE SAMPLE FOR EACH 5000 SQ. FT. OR FRACTION THEREOF OF EACH CONCRETE MIX PLACED EACH DAY.
   a. WHEN FREQUENCY OF TESTING WILL PROVIDE FEWER THAN FIVE COMPRESSIVE-STRENGTH TESTS FOR EACH CONCRETE MIXTURE, TESTING SHALL BE CONDUCTED FROM AT LEAST FIVE RANDOMLY SELECTED BATCHES OR FROM EACH BATCH IF FEWER THAN FIVE ARE USED.
2. SLUMP: ASTM C 143/C 143M; ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.
3. AIR CONTENT: ASTM C 231, PRESSURE METHOD; ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX.
4. CONCRETE TEMPERATURE: ASTM C 1064; ONE TEST HOURLY WHEN AIR TEMPERATURE IS 40 DEG F AND BELOW AND WHEN 80 DEG F AND ABOVE, AND ONE TEST FOR EACH COMPOSITE SAMPLE.
5. COMPRESSION TEST SPECIMENS: ASTM C 31/C 31M; CAST AND LABORATORY CURE ONE SET OF THREE STANDARD CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE.
6. COMPRESSIVE-STRENGTH TESTS: ASTM C 39/C 39M; TEST 1 SPECIMEN AT 7 DAYS AND 2 SPECIMENS AT 28 DAYS.
   a. A COMPRESSIVE-STRENGTH TEST SHALL BE THE AVERAGE COMPRESSIVE STRENGTH FROM 2 SPECIMENS OBTAINED FROM SAME COMPOSITE SAMPLE AND TESTED AT 28 DAYS.

C. STRENGTH OF EACH CONCRETE MIX WILL BE SATISFACTORY IF AVERAGE OF ANY 3 CONSECUTIVE COMPRESSIVE-STRENGTH TESTS EQUALS OR EXCEEDS SPECIFIED COMPRESSIVE STRENGTH AND NO COMPRESSIVE-STRENGTH TEST VALUE FALLS BELOW SPECIFIED COMPRESSIVE STRENGTH BY MORE THAN 500 PSI.

D. APPROVED HAND TOOLS:

1. THE PAVEMENT MUST BE COMPACTED USING A RISER STRIP UNLESS THE SCREED USED PROVIDES ENOUGH COMPACTION THAT NO LOSS OF ELEVATION OCCURS AFTER SECONDARY "CROSS ROLLING".
2. AN APPROVED PERVIOUS CONCRETE "CROSS" ROLLER CAPABLE OF APPLYING A MINIMUM WEIGHT OF 40 LBS/LF.
3. A STEEL "STATIC" ROLLER WEIGHING A MINIMUM OF 40 LBS/LF, FITTED WITH HANDLES ON EACH END, CAPABLE OF SPANNING THE FULL WIDTH OF THE FRESH PLACEMENT IS ALLOWED BUT ONLY IF RISER STRIPS ARE USED TO STRIKE OFF THE FRESHLY PLACED MIX HIGHER THAN FINISHED GRADE AND COMPACTED BACK TO FINAL GRADE IMMEDIATELY AFTER THE RISER STRIPS ARE REMOVED.
4. USE OF ASPHALT ROLLERS OR PLATE COMPACTORS ARE NOT ALLOWED, UNLESS IT CAN BE DEMONSTRATED THAT THEY WILL NOT SEAL THE VOIDS, PREVENT RAVELING AND DO NOT RESULT IN UNEVEN SURFACES. USE OF SUCH TOOLS MUST BE APPROVED IN WRITING BY THE DESIGN PROFESSIONAL OF RECORD.
5. A WEIGHTED STEEL OR MAGNESIUM FLOAT MAY BE USED IN CONJUNCTION WITH OTHER HAND TOOLS TO REMOVE ROLLER MARKS AND IMPROVE THE APPEARANCE OF THE PAVEMENT SURFACE PROVIDED IT DOES NOT SEAL THE SURFACE OR REDUCE THE PERMEABILITY BELOW ACCEPTABLE RATES OF INFILTRATION.
6. HAND FLOATS AND OTHER TOOLS TYPICAL TO CONCRETE FINISHING MAY BE USED BUT ONLY IF THEY DO NOT SEAL THE SURFACE, REDUCE PERMEABILITY BELOW ACCEPTABLE RATES OF INFILTRATION, OR RESULT IN A SLIPPERY SURFACE TEXTURE.
7. WALKING EDGERS, DEEP JOINTERS, AND HAND EDGERS WITH SPECIFIED RADIUS. IF NO RADIUS IS SPECIFIED THE INSTALLER MAY USE EITHER A ½-INCH OR 5/8-INCH RADIUS AS LONG AS ALL EDGERS USED ON THE JOB MATCH.
8. DEEP JOINTERS, PERVIOUS "PIZZA" STYLE CUTTERS MAY BE USED AS LONG AS THE JOINT RADIUS LEAVED NO TORN OR RAGGED EDGES. DEEP GROOVE JOINTERS SHOULD NOT BE USED TO "FINISH" THE JOINT RADIUS, SINCE DEEP GROOVERS OFTEN LEAVE RAGGED OR TORN EDGES. TOUCH UP MAY BE NECESSARY TO DRESS THE EDGE AFTER DEEP GROOVING WITH STEEL GROOVERS OR HAND TOOLS.
9. GROOVER, A STEEL TOOL WITH A GROOVE CAST OR ATTACHED, MAY BE USED TO TOUCH UP EDGES AFTER DEEP JOINTING. USE OF ALUMINUM GROOVERS IS NOT RECOMMENDED UNLESS THE INSTALLER CAN DEMONSTRATE THE TOOL DOES NOT RESULT IN TORN SURFACES OR RADIUS EDGES.

E. PLACING, COMPACTION, JOINTING, AND FINISHING PROCESS:

1. NOTE: PERVIOUS CONCRETE IS READY FOR COMPACTION, JOINTING AND FINISHING IMMEDIATELY AFTER PLACING.
2. PERVIOUS MATERIALS SHALL BE PLACED ON THE GROUND AS CLOSE AS POSSIBLE TO ITS FINAL LOCATION. AVOID PILING AND DRAGGING INTO PLACE WHEN POSSIBLE.
3. IMMEDIATELY AFTER PLACEMENT AND BEFORE SCREEDING, WORKMEN SHALL COMPACT THE EDGES WITHIN FOUR (4) INCHES OF THE EDGE BY STEPPING ON THE FRESH PERVIOUS CONCRETE. AVOID CONTAMINATING THE SURFACE WITH DIRTY BOOTS. IF DIRT IS TRANSFERRED TO THE COMPACTED EDGE, REMOVE THE CONTAMINATED MIX FROM THE GRADE.
4. TAKE CARE TO ACCURATELY STRIKE OFF THE SURFACE USING A "RISER STRIP" THAT ALLOWS FOR COMPACTION TO FINAL GRADE.
5. IMMEDIATELY AFTER INITIAL STRIKE OFF, REMOVE THE RISER STRIP AND COMPACT TO GRADE USING A STATIC ROLLER AND/OR AN APPROVED PERVIOUS CROSS ROLLER.
   5.1. CONTROL (CONTRACTION) JOINTS SHALL BE INSTALLED AT INTERVALS OF A MAXIMUM OF 15 FEET OR AS INDICATED BY PLANS. THEY SHALL BE INSTALLED AT A DEPTH OF ¼ THE THICKNESS OF THE PAVEMENT.
   5.2. THE LARGER HORIZONTAL DIMENSION OF A SLAB PANEL SHALL NOT EXCEED 125% OF THE SMALL DIMENSION.
   5.3. THE ANGLE BETWEEN TWO INTERSECTING JOINTS SHALL BE BETWEEN 80 AND 100 DEGREES.
   5.4. ALIGN JOINTS OF ADJACENT PAVEMENT PANELS.
   5.5. JOINTS SHALL INTERSECT PAVEMENT FREE EDGES AT 90-DEGREE ANGLES AND SHALL EXTEND STRAIGHT FOR A MINIMUM OF 1-1/2 FEET FROM THE PAVEMENT EDGE WHERE POSSIBLE.
   5.6. TRANSVERSE CONSTRUCTION JOINTS SHALL BE INSTALLED WHENEVER PLACING IS SUSPENDED A SUFFICIENT LENGTH OF TIME THAT CONCRETE MAY BEGIN TO HARDEN. IF CONTRACTOR ATTEMPTS TO "BLEND" A FRESH POUR INTO AN EARLIER POUR "RAVELING" WILL OCCUR. MINIMIZE THE TIME BETWEEN LOADS TO REDUCE THIS "ACCIDENTAL COLD JOINT".
   5.7. ISOLATION (EXPANSION) JOINTS WILL NOT BE USED EXCEPT WHEN PAVEMENT IS ABUTTING SLABS OR OTHER ADJOINING STRUCTURES. EXTEND THE ISOLATION JOINTS THROUGH THE FULL DEPTH OF THE PAVEMENT. FILL THE ENTIRE ISOLATION JOINT WITH ISOLATION JOINT MATERIAL.
   5.8. IF TRANSVERSE OR ISOLATION JOINTS ARE USED, OR WHERE PERVIOUS CONCRETE MEETS IMPERVIOUS PAVEMENT, EXTRA COMPACTION MAY BE NECESSARY.
6. DEEP GROOVE CONTRACTION JOINTS MUST BE INSTALLED IMMEDIATELY AFTER COMPACTION, UNLESS THE INSTALLER CHOOSES TO WET CUT THE CONTRACTION JOINTS IN THREE STEPS:
   6.1. DEEP GROOVE IMMEDIATELY AFTER SCREEDING.
   6.2. COMPACT WITH STATIC ROLLER.
   6.3. TOUCH UP RADIUS WITH STEEL GROOVER AFTER COMPACTION TO DRESS THE RADIUS.
7. UNLESS CONTRACTION JOINTS ARE TO BE SAWN, ALL WET CUT JOINTS AND EDGES SHALL BE TOOLED INTO THE PAVEMENT WITHOUT DELAY. TIME IS OF THE ESSENCE. JOINTING WITHOUT DELAY AIDS IN THE EASE OF INSTALLATION AND THE DURABILITY OF THE TOOLED EDGE.
8. ALL WET CUT EDGES AND COLD JOINT EDGES MUST HAVE AN APPROVED ½-INCH OR 5/8-INCH RADIUS EDGER UNLESS OTHERWISE SPECIFIED. A RADIUS EDGE IS ALSO REQUIRED NEXT TO CURBS AND NEXT TO SAWN JOINTS.
9. IF THE SURFACE OR EDGES ARE "TORN" OR NOT OTHERWISE UNIFORM, IMMEDIATELY ADD FRESH MATERIAL TO CORRECT THE APPEARANCE. DO NOT ADD MATERIAL AFTER THE "SHEEN" HAS LEFT THE SURFACE. WORKING WITH PARTIALLY SET PASTE (MATTE APPEARANCE AS OPPOSED TO WET METALLIC) OR UN-COMPACTED SURFACE MATERIAL WILL WEAKEN THE BOND AND INCREASE THE CHANCE OF RAVELING.
10. AFTER CROSS ROLLING THE SURFACE A WEIGHTED FINISHING TOOL MAY BE USED TO REMOVE ROLLER MARKS (IF ANY) AND TO TOUCH UP THE SURFACE.
11. AVOID OVER-FINISHING OF THE SURFACE TO PROTECT SURFACE PERMEABILITY. IF MATERIAL NEEDS TO BE ADDED OR REMOVED, MAKE CHANGES IMMEDIATELY AND RE-SCREED AS NEEDED.
12. COLD JOINTS SHOULD BE AVOIDED IF POSSIBLE.
   12.1. IF A DELAY OCCURS THAT LASTS LONG ENOUGH THAT THE CONCRETE IS NO LONGER WORKABLE (METALLIC SHEEN IS LOST), INSTALL A HEADER AND CREATE A TRANSVERSE CONSTRUCTION JOINT, COMPACT THE EDGE OF THE NEW JOINT.
   12.2. IF THE MIX IS CUT BACK TO A SCHEDULED JOINT, EXCESS CONCRETE MUST BE REMOVED TO ALLOW AT LEAST THREE (3) INCHES OF FRESH MIX ON THE SURFACE. USE A STRAIGHT EDGE AND EDGING TOOL TO MAKE A TOOLED RADIUS EDGES AT THE NEW JOINT.
   12.3. DURING SHORT DELAYS, COVER THE PAVEMENT, INCLUDING THE FACE OF THE NEW EDGE, WITH PLASTIC UNTIL FRESH CONCRETE ARRIVES.
   12.4. USE OF A SURFACE STABILIZING AGENT IS ENCOURAGED DURING DELAYS. STABILIZERS MAY BE REAPPLIED AS LONG AS THE PASTE IS NOT DAMAGED.
13. SAWED JOINTS (ONLY IF APPROVED BY THE DESIGN PROFESSIONAL OF RECORD):
   13.1. IF APPROVED BY THE DESIGN PROFESSIONAL OF RECORD, SAW CUTTING SHOULD BEGIN AS SOON AS THE PAVEMENT HAS HARDENED SUFFICIENTLY TO PREVENT RAVELING AND UNCONTROLLED CRACKING.
   13.2. A DELAY IN SAW CUTTING FRESH PERVIOUS CONCRETE MAY BE ALLOWED UP TO SEVEN DAYS IF THE PAVEMENT IS PLACED OR WET CUT IN SECTIONS 20 FEET BY 40 FEET ON CENTER OR SMALLER.
   13.3. IF PLASTIC IS REMOVED FOR SAW CUTTING IN LESS THAN SEVEN DAYS, THE ENTIRE SURFACE OF THE PAVEMENT MUST BE SATURATED BEFORE REPLACING THE PLASTIC TO REHYDRATE FOR CURING.
   13.4. DUST CREATED BY DRY CUT PAVEMENTS MUST BE REMOVED IMMEDIATELY, WITHOUT ALLOWING DUST TO ACCUMULATE ON THE SURFACE FOR ANY LENGTH OF TIME AFTER CUTTING, BY VACUUM OR USE A LEAF BLOWER WITH THE HOSE OR VACUUM INTAKE NOZZLE LOCATED WITHIN THREE FEET OF THE BLADE.
   13.5. SLURRY CREATED BY WET CUTTING MUST BE THOROUGHLY FLUSHED OR VACUUMED FROM THE SURFACE BEFORE THE WATER IN THE SLURRY STARTS TO DRY.
14. TOLERANCES:
   14.1. CONSTRUCT PAVEMENT TO COMPLY WITH THE FOLLOWING TOLERANCES:
   14.1.1. ELEVATION: +3/4 INCH – 0 INCH
   14.1.2. THICKNESS: +1-1/2 INCH – 1/4 INCH
   14.1.3. CONTRACTION JOINT DEPTH: +1/4 INCH – 0 INCH
   14.1.4. SURFACE: IN ANY DIRECTION, THE GAP BELOW A 10-FEET UNLEVEL STRAIGHTEDGE SHALL NOT EXCEED 1/2-INCH.

D. CURING MATERIALS AND PROCEDURES:

1. PROPER CURING PROCEDURES REQUIRE THAT FRESH PERVIOUS CONCRETE CURING MUST BEGIN WITHIN TWENTY (20) MINUTES AFTER PLACEMENT. IN DRY OR WINDY CONDITIONS. CURING MUST BE STARTED SOONER AND PLACING SHOULD BE SUSPENDED IF THE WET METALLIC SHEEN CANNOT BE MAINTAINED LONG ENOUGH TO COMPLETE FINISHING OPERATIONS.
2. THE PAVEMENT SURFACE MUST BE COVERED WITH SIX-MILLIMETER POLYETHYLENE PLASTIC SHEETING OR THICKER OR AS APPROVED BY THE DESIGN PROFESSIONAL OF RECORD.
3. BLACK OR CLEAR SHEETING MAY BE USED BUT MAINTAIN THE SAME TYPE THROUGHOUT THE PROJECT.
4. THE SHEETING SHALL OVERLAP ALL EXPOSED EDGES AT LEAST 15-INCHES AND SHALL BE SECURED, WITHOUT USING DIRT OR STONES SMALLER THAN THE AGGREGATE IN THE MIX, TO SECURELY ANCHOR THE PLASTIC FOR ALL WEATHER CONDITIONS.
5. SHEETING WITH UNREPAIRED HOLES OR RIPS WILL NOT BE ALLOWED.
6. A FOG OR LIGHT MIST MAY BE SPRAYED USING A LOW OR MEDIUM SOLID HYDRATION-STABILIZING AGENT. APPLY WITH A PRESSURE SPRAYER ABOVE THE SURFACE AS NEEDED DURING HIGH TEMPERATURE, HIGH WIND, AND LOW HUMIDITY.
7. LIQUID CURING COMPOUNDS ARE NOT ALLOWED AS A REPLACEMENT FOR CURING PLASTIC. SURFACE TREATMENTS FOR CURING OR OTHER APPROVED PURPOSES ARE ALLOWED IN CONJUNCTION WITH CURING PLASTIC.
8. INTERNALLY CURED MIXED, IF APPROVED AND USED, MUST STILL BE COVERED WITH PLASTIC SHEETING FOR A MINIMUM NUMBER OF HOURS AS DIRECTED BY THE MIX DESIGN. IF THE MIX DESIGN DOES NOT SPECIFICALLY STATE THAT IT IS INTERNALLY CURED, ASSUME THAT IT IS NOT.
9. PREVENTION OF "TIGER STRIPING" (UNEVEN SURFACE DISCOLORATION FROM UNEVEN CURING CAUSED BY WRINKLES AND FOLDS

CONSTRUCTION SPECIFICATIONS

C. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO CLEAN, REPAIR AND TOUCH-UP, OR REPLACE WHEN DIRECTED, PAVEMENT WHICH HAS BEEN SOILED, DISCOLORED, OR DAMAGED BY OTHER TRADES PRIOR TO SUBSTANTIAL COMPLETION.

3.3 REPAIRS

A. REMOVE AND REPLACE PAVEMENT SECTIONS THAT FAIL TO MEET STANDARDS ESTABLISHED AND APPROVED BY THE OWNER. UNLESS OTHERWISE AUTHORIZED BY THE DESIGN PROFESSIONAL OF RECORD, REMOVE THE ENTIRE SECTION AT NO EXPENSE TO OWNER AT THE NEAREST JOINT.

B. PATCHING SMALL AREAS MAY BE ALLOWED IF THE INSTALLER USES THE EXACT MIX DESIGN WITH THE SAME INGREDIENTS AND CEMENT SUPPLIER AND CAN DEMONSTRATE THE PATCH WILL MATCH THE APPEARANCE AND PERFORMANCE OF THE EXISTING PAVEMENT AFTER THE REPLACEMENT PAVEMENT HAS CURED. MINOR COLOR DIFFERENCES ARE TO BE EXPECTED AND ARE NOT A BASIS FOR REJECTING PATCHING.

C. IF THE PAVEMENT HAS BEEN CLOGGED WITH CONSTRUCTION DEBRIS OR OTHER SEDIMENT, CLEAN THE PAVEMENT AND RETEST. IF THE PAVEMENT IS SLOW DRAINING BECAUSE OF IMPROPER MIX DESIGN OR INSTALLATION TECHNIQUES, REMOVE AND REPLACE THE SECTION OF PAVEMENT THAT IS NOT COMPLIANT WITH THE SPECIFICATIONS AT THE NEAREST JOINT AT NO COST TO THE OWNER.

3.4 MAINTENANCE/CLEANING AFTER CONSTRUCTION AND ACCEPTANCE OF WORK

A. THE OWNER IS RESPONSIBLE FOR ALL MAINTENANCE AFTER CONSTRUCTION AND PROJECT WORK ACCEPTANCE. THE CONTRACTOR MUST SUPPLY THE OWNER WITH A COPY OF THE PERVIOUS CONCRETE OWNER'S MANUAL AND MAINTENANCE GUIDE.

3.5 TESTING

A. IF LABORATORY TESTING IS SPECIFIED, IT SHALL BE COMPLETED BY AN ACCREDITED LABORATORY OR AS APPROVED BY THE DESIGN PROFESSIONAL.

3.6 ACCEPTANCE

A. COMPLETED WORK THAT MEETS THE STANDARDS APPROVED IN THE SAMPLE PANEL SHALL BE APPROVED.

SEE SHEET C911 FOR CONTINUATION

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OREGON
MAY 29, 2015
ANNA LUTTRELL BACKUS
EXPIRATION DATE: 12/31/2027

REVISION	DATE	DESCRIPTION

JOB No.:	2500127
DESIGNED BY:	MAR
DRAWN BY:	MAR
CHECKED BY:	AB
PLOT DATE:	11/17/26 1:35pm
PLOTTED BY:	ABackus
DWG NAME:	2500127-01CV.dwg
TAB NAME:	C2.2

33390 Nisbock Lane, Creswell, Oregon

CRESWELL HIGH SCHOOL - CTE BUILDING

CIVIL SPECIFICATIONS

SHEET NO.

C2.2

24x36

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SHEET NOTES

1. ALL DIMENSIONS ARE TO FACE OF CURB OR FACE OF WALL.
2. ALL SIDEWALK PAVEMENT JOINTS SHALL BE CONSTRUCTED PER DETAIL 2/C6.0

KEY NOTES

#	DESCRIPTION	DETAIL REF.
1	SAWCUT LINE	
2	RAMP WITH HANDRAILS	7/C6.0
3	SITE FENCE. SEE ARCHITECTURAL PLAN.	
4	CONVEYANCE SWALE	6/C6.0
5	MOW BAND. SEE ARCHITECTURAL PLAN.	

SHEET LEGEND

- PROPERTY LINE
- SAWCUT LINE
- GRADE BREAK
- CONCRETE SIDEWALK — 1/C6.0

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TAB NAME:	C3.0

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CRESWELL HIGH SCHOOL - CTE BUILDING

HORIZONTAL CONTROL & PAVING PLAN

SHEET NO.

C3.0

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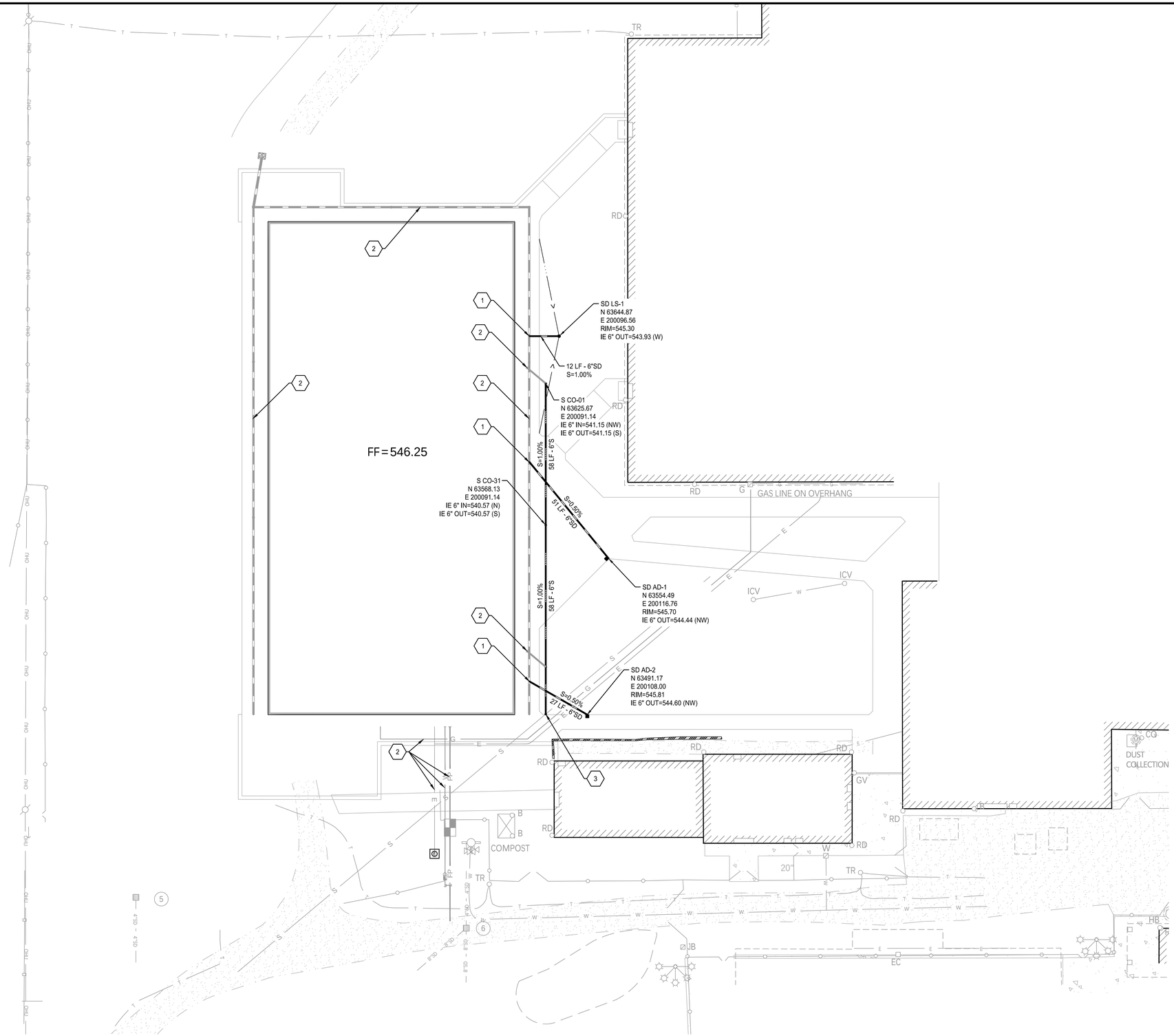

SHEET NOTES

1. ON-SITE PIPE BEDDING AND BACKFILL FOR ALL UTILITIES PER DETAIL 3/C6.0.
2. STRUCTURES LOCATIONS ARE BASED ON CENTER OF STRUCTURE.

(X) UTILITY KEY NOTES

NOTE	DESCRIPTION	DETAIL REF.
1	CONNECT TO STORM LINE CONSTRUCTED DURING MASS GRADING. CONTRACTOR TO POT HOLE PRIOR TO START OF CONSTRUCTION AND PROVIDE ELEVATION TO KPFF.	
2	UTILITIES CONSTRUCTED DURING PREVIOUS PHASE.	
3	CONNECT TO EXISTING SANITARY SEWER LINE. CONTRACTOR TO POT HOLE PRIOR TO START OF CONSTRUCTION AND PROVIDE ELEVATION TO KPFF.	
!!	UTILITY CROSSING. PROVIDE 12" MIN. CLEARANCE, U.N.O.	

UTILITY LABEL LEGEND

STRUCTURE LABEL

- UTILITY TYPE (SD=STORM DRAINAGE, S=SANITARY SEWER, W=WATER, FP=FIRE PROTECTION)
- STRUCTURE TYPE CALLOUT
- ID NUMBER (WHERE APPLICABLE)

XX XX-XX
N=XXXX.XX
E=XXXX.XX — LOCATION (WHERE APPLICABLE)
RIM=
IE IN = XX.X
IE OUT = XX.X — STRUCTURE INFO (WHERE APPLICABLE)

PIPE LABEL

- UTILITY LENGTH
- UTILITY SIZE

XXLF - XX" XX — UTILITY TYPE
S=X.XX% — SLOPE (WHERE APPLICABLE)

STRUCTURE TYPE

CALLOUT	DESCRIPTION	DETAIL REF.
AD	AREA DRAIN	5/C6.0
LS	LANDSCAPING DRAIN	4/C6.0

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CRESWELL HIGH SCHOOL - CTE BUILDING

UTILITY PLAN

SHEET NO.
C4.0

24x36

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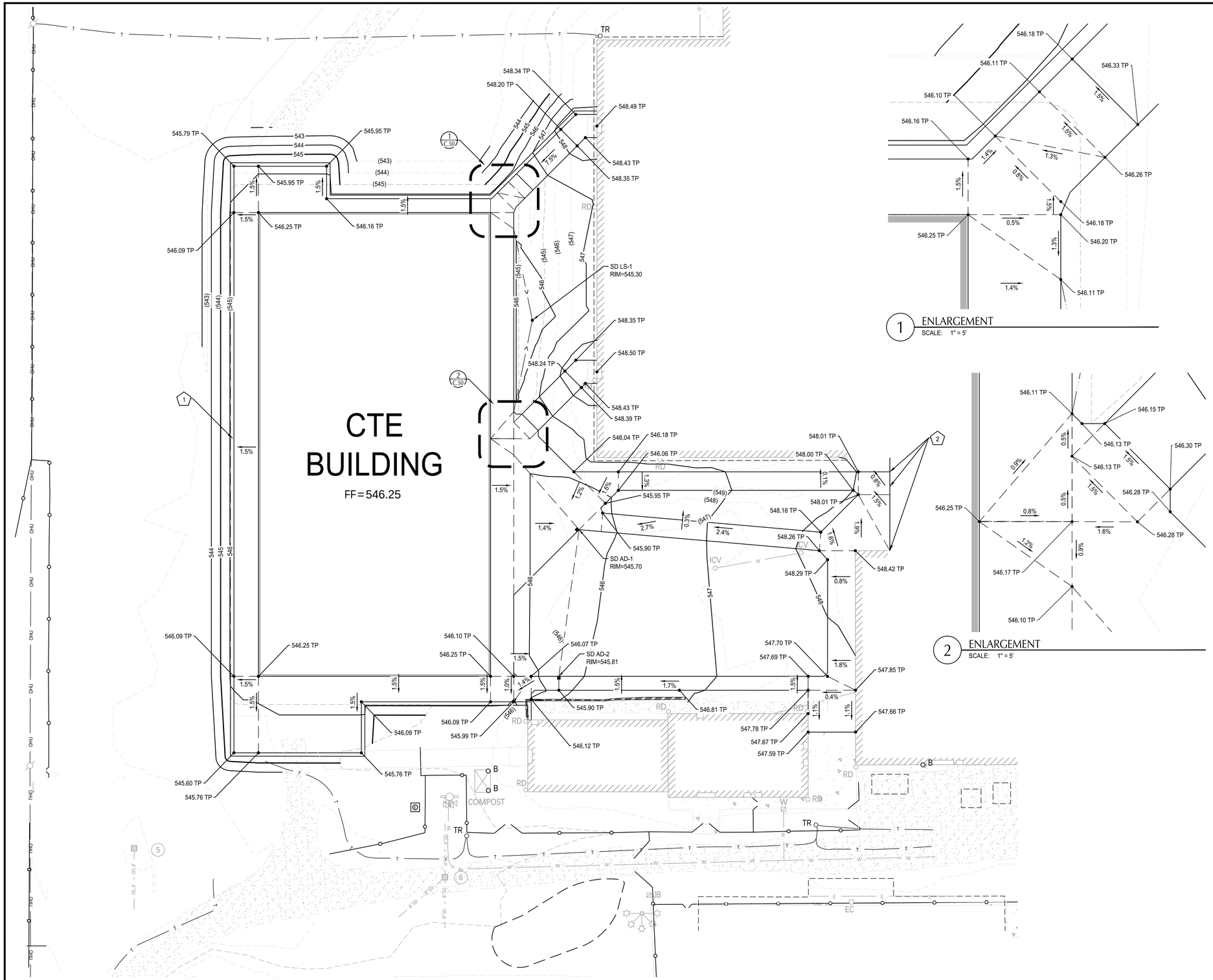

1 ENLARGEMENT
SCALE: 1" = 5'

2 ENLARGEMENT
SCALE: 1" = 5'

SHEET NOTES

1. SLOPES PROVIDED ON SLOPE ARROW ARE FOR REFERENCE ONLY.
2. CROSS-SLOPES ON ACCESSIBLE ROUTES ARE DESIGNED AT 1.5% MAX. AND SHALL COMPLY WITH CURRENT ADA ACCESSIBILITY GUIDELINES FOR BUILDING AND FACILITIES (ADAAG)
3. WALKWAYS ARE DESIGNED TO NOT REQUIRE HANDRAILS. UNLESS NOTED OTHERWISE, THEREFORE WALKWAYS WITH SLOPES STEEPER THAN 4.5% AND LESS THAN 7.8% SHALL NOT EXCEED 0.5' RISE.

(X) GRADING KEY NOTES

NOTE	DESCRIPTION
1	CONSTRUCT 1' WIDE BENCH AT EDGE OF PAVEMENT. SLOPE BENCH AT 2% AWAY FROM PAVEMENT.
2	MATCH EXISTING GRADE. VERIFY GRADES AND REPORT ELEVATIONS TO KPFF PRIOR TO START OF CONSTRUCTION.

GRADING LABEL LEGEND

CALLOUT	DESCRIPTION
X.X% →	GRADING SLOPE AND DIRECTION (DOWNHILL)
[X.X%] →	SLOPE ORIENTATION INDICATING DIRECTION OF MAXIMUM GRADE (DOWNHILL)
XX.XX XX	SPOT ELEVATION DESCRIPTION LISTED BELOW. NO DESCRIPTION MEANS TP OR TG

BS	BOTTOM OF STEP
BW	BOTTOM OF WALL
EG	EXISTING GRADE
FF	FINISHED FLOOR
FL	FLOW LINE
G	GUTTER
HP	HIGH POINT
LP	LOW POINT
RIM	RIM OF STRUCTURE
TC	TOP OF CURB
TG	TOP OF GROUND
TP	TOP OF PAVEMENT
TS	TOP OF STEP
TW	TOP WALL

(XXX.X±) EXISTING GRADE (MATCH WHERE APPLICABLE)

SHEET LEGEND

- DRAINAGE FLOW DIRECTION
- GRADE BREAK
- SAWCUT LINE
- (49) EX. CONTOUR MINOR
- (50) EX. CONTOUR MAJOR
- 49 CONTOUR MINOR (FG)
- 50 CONTOUR MAJOR (FG)
- CONVEYANCE SWALE

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CRESWELL HIGH SCHOOL - CTE BUILDING

GRADING PLAN

SHEET NO.

C5.0

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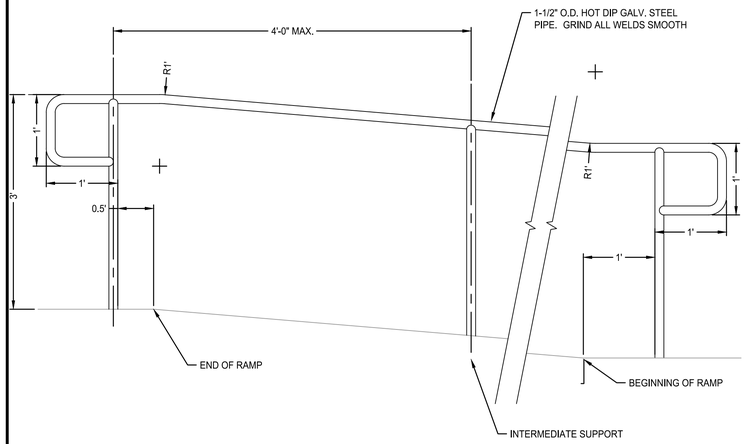
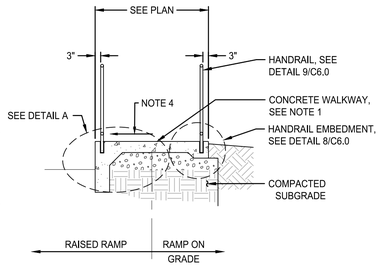
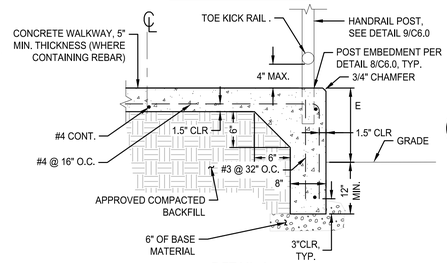


9 STANDARD RAMP HAND RAIL (WHERE DROP IS LESS THAN 30")

SCALE: NTS



SINGLE RUN SECTION



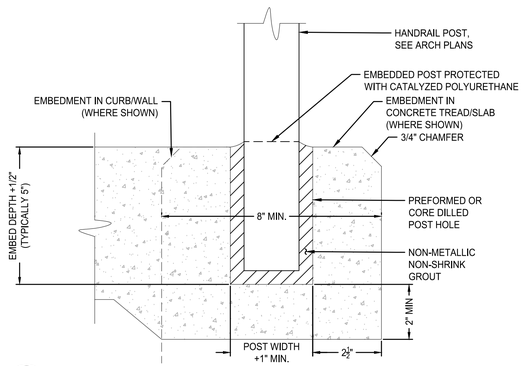
DETAIL A

NOTES:

1. WALL EXPOSURE 'E' =0" TO 30". VARIES, SEE PLAN.
2. CONSTRUCT JOINT SPACING PER SIDEWALK JOINT DETAIL.
3. INSTALL DOWELED JOINTS EXPANSION JOINT WHERE CONNECTING TO EXISTING STRUCTURE OR SLAB ON GRADE CONCRETE.
4. RAMPS DESIGNED WITH CROSS-SLOPE 1.5% MAX AND RUNNING SLOPE 7.8% MAX. NOTIFY ENGINEER OF DISCREPANCIES.

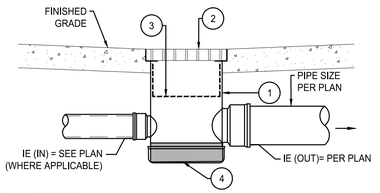
7 RAMP WITH HANDRAILS

SCALE: NTS



8 HANDRAIL EMBEDMENT

SCALE: NTS

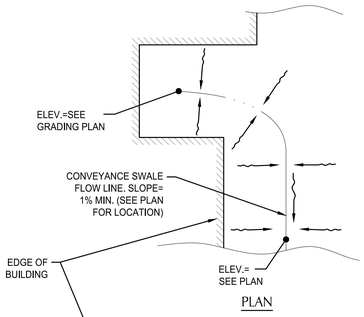


X KEY NOTES

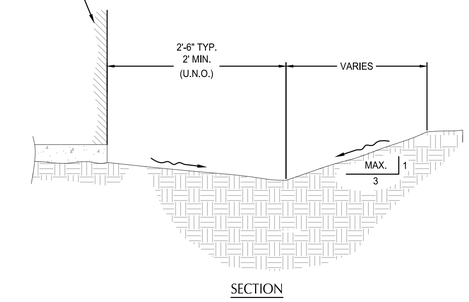
1. 12" NYLOPLAST DRAIN BASIN, OR APPROVED EQUAL
2. 12" PEDESTRIAN HINGED GRATE, H-10 RATED BY ADS, OR APPROVED EQUAL.
3. FLEXSTORM SHORT CATCH-IT INLET SEDIMENT BAG, OR APPROVED EQUAL.
4. INSTALL SUMP INSERT (NYOPLAST PART NUMBER 3812AGSI) TO ELIMINATE SUMP IN BASIN.

5 AREA DRAIN - PAVED PEDESTRIAN AREAS

SCALE: NTS



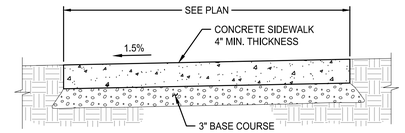
PLAN



SECTION

6 CONVEYANCE SWALE - TYPE 1

SCALE: NTS

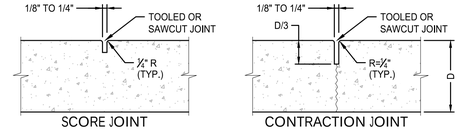


NOTES:

1. CONSTRUCT JOINTS PER SIDEWALK JOINTS DETAIL ON THIS SHEET.

1 TYP. CONCRETE SIDEWALK

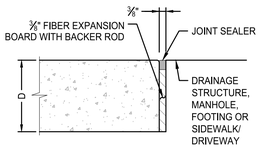
SCALE: NTS



JOINT INTERVALS TABLE

TYPE	SPACING	OR AT...
SCORE	5' TYP.	LOCATIONS SHOWN ON PLANS
CONTRACTION	15' MAX.	END OF RAMPS AND DRIVEWAYS
EXPANSION/ ISOLATION	200' *	POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY OR OTHER FIXED OBJECTS

* MONOLITHIC CURB AND SIDEWALK SHALL BE 45' MAX.



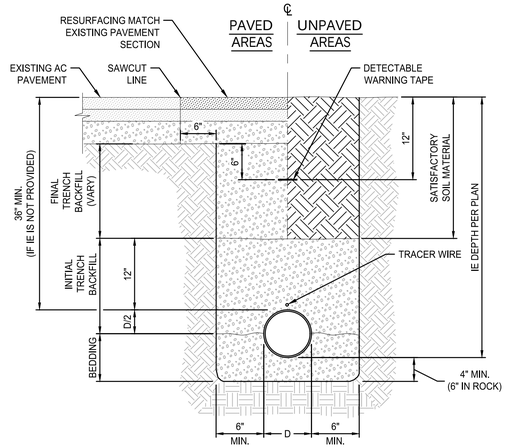
EXPANSION / ISOLATION JOINT

NOTES:

1. CONTRACTION JOINTS MAY BE USED IN PLACE OF SCORE JOINTS.
2. CONSTRUCTION COLD JOINTS MAY BE USED IN PLACE OF CONTRACTION JOINTS.
3. PROVIDE MEDIUM BROOM FINISH WITH NO TOOL MARKS.

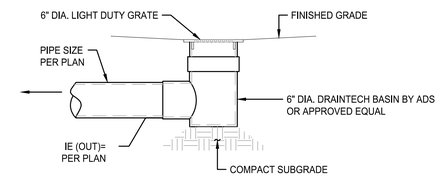
2 TYP. SIDEWALK JOINTS

SCALE: NTS



3 TYPICAL PIPE BEDDING AND BACKFILL

SCALE: NTS



NOTES:

1. DRAIN AND GRATE BY ADS OR APPROVED EQUAL.

4 LANDSCAPE DRAIN - TYPE 1

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CRESWELL HIGH SCHOOL - CTE BUILDING

CIVIL DETAILS

SHEET NO.

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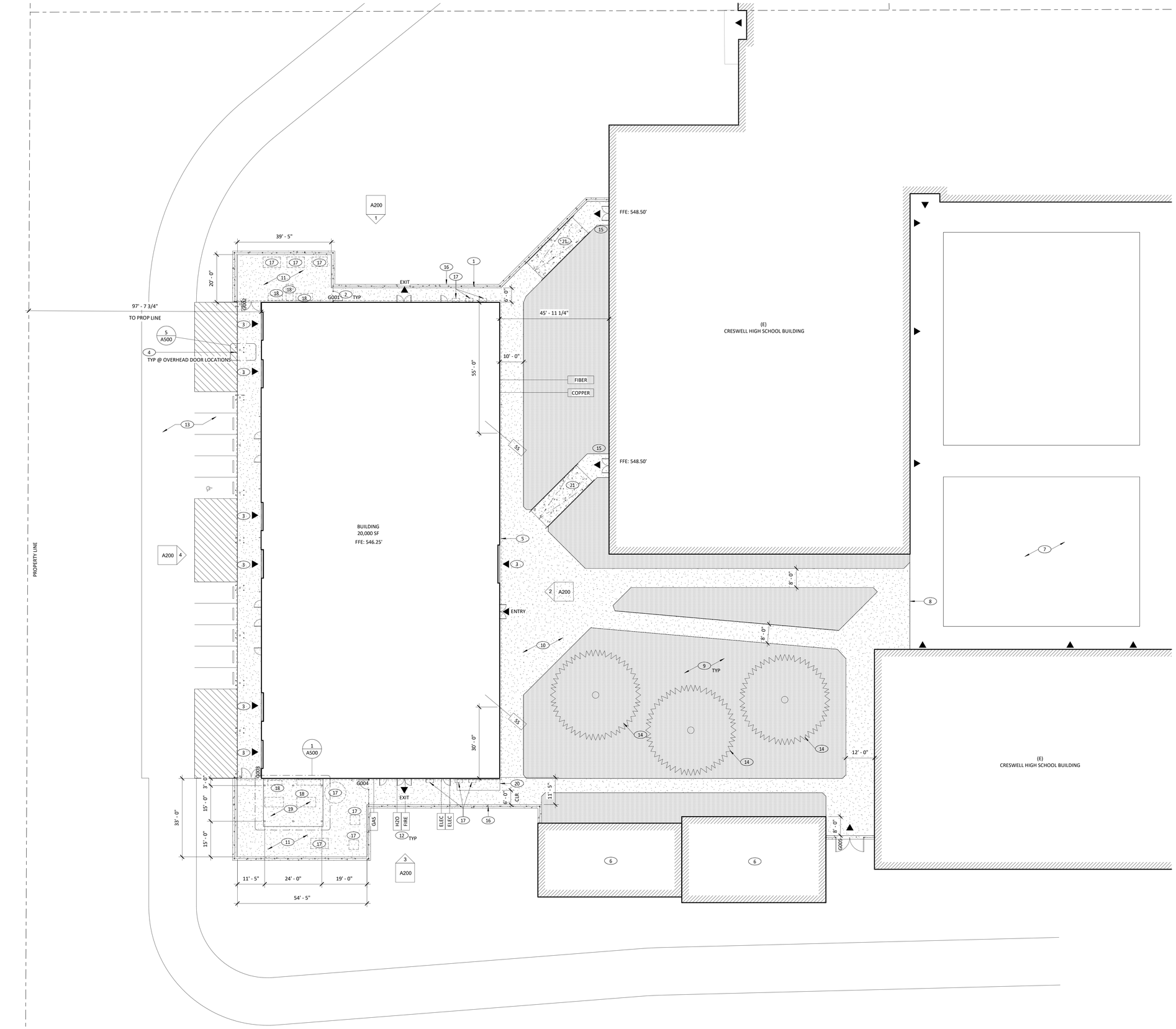

1 SITE PLAN
1/16" = 1'-0"

KEYNOTES

1. LINETYPE INDICATES 6'H CHAINLINK FENCE, SEE DETAILS
2. FENCE GATE, SEE DETAILS, DOOR SCHEDULE
3. (E) OVERHEAD DOOR LOCATION FOR REFERENCE, SEE ALSO ELEVATIONS
4. BOLLARDS @ STEEL COLUMNS, SEE DETAILS
5. LINETYPE INDICATES ROOF OVERHANG
6. (E) ACCESSORY BUILDING, NO WORK
7. (E) COURTYARD, NO WORK THIS AREA
8. EXTENT OF (E) PAVEMENT
9. HATCH INDICATES (N) LAWN AREA, CONNECT TO (E) IRRIGATION SYSTEM
10. HATCH INDICATES (N) CONCRETE WALKWAY, SEE CIVIL
11. MECHANICAL AREA, 6" SLAB ON GRADE W/ #4 @ 16" OC EA WAY @ MID-DEPTH OF SLAB, SEE ALSO CIVIL
12. APPROX. UTILITY HOOKUP LOCATION, VERIFY IN FIELD, SEE ALSO CIVIL
13. FUTURE PHASE DRIVEWAY AND PARKING AREA, SHOWN FOR REFERENCE, NOT IN SCOPE
14. BIG LEAF MAPLE TREE, 2" CALIPER
15. (N) CONC PATH TO ALIGN WITH (E) DOOR LANDING, SEE CIVIL
16. CONCRETE MOW STRIP, SEE CIVIL
17. APPROX. LOCATION OF MECHANICAL EQUIPMENT, SEE MECHANICAL
18. SHOP EQUIPMENT, SEE EQUIPMENT PLAN
19. FREESTANDING COVERED STORAGE STRUCTURE, SEE DETAILS
20. ELECTRICAL METER, SEE ELECTRICAL
21. CONCRETE RAMP W/ HANDRAILS, MAX 1:12 RUNNING SLOPE, 1:48 CROSS SLOPE, SEE CIVIL

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REVISIONS

CRESWELL HIGH SCHOOL CTE BUILDING
INTERIOR IMPROVEMENT
33390 NIBLOCK LN, CRESWELL OR 97426
CONSTRUCTION DOCUMENTS

JOB NO: 26767
ISSUE DATE: 18 NOV 2026

SITE PLAN

A100

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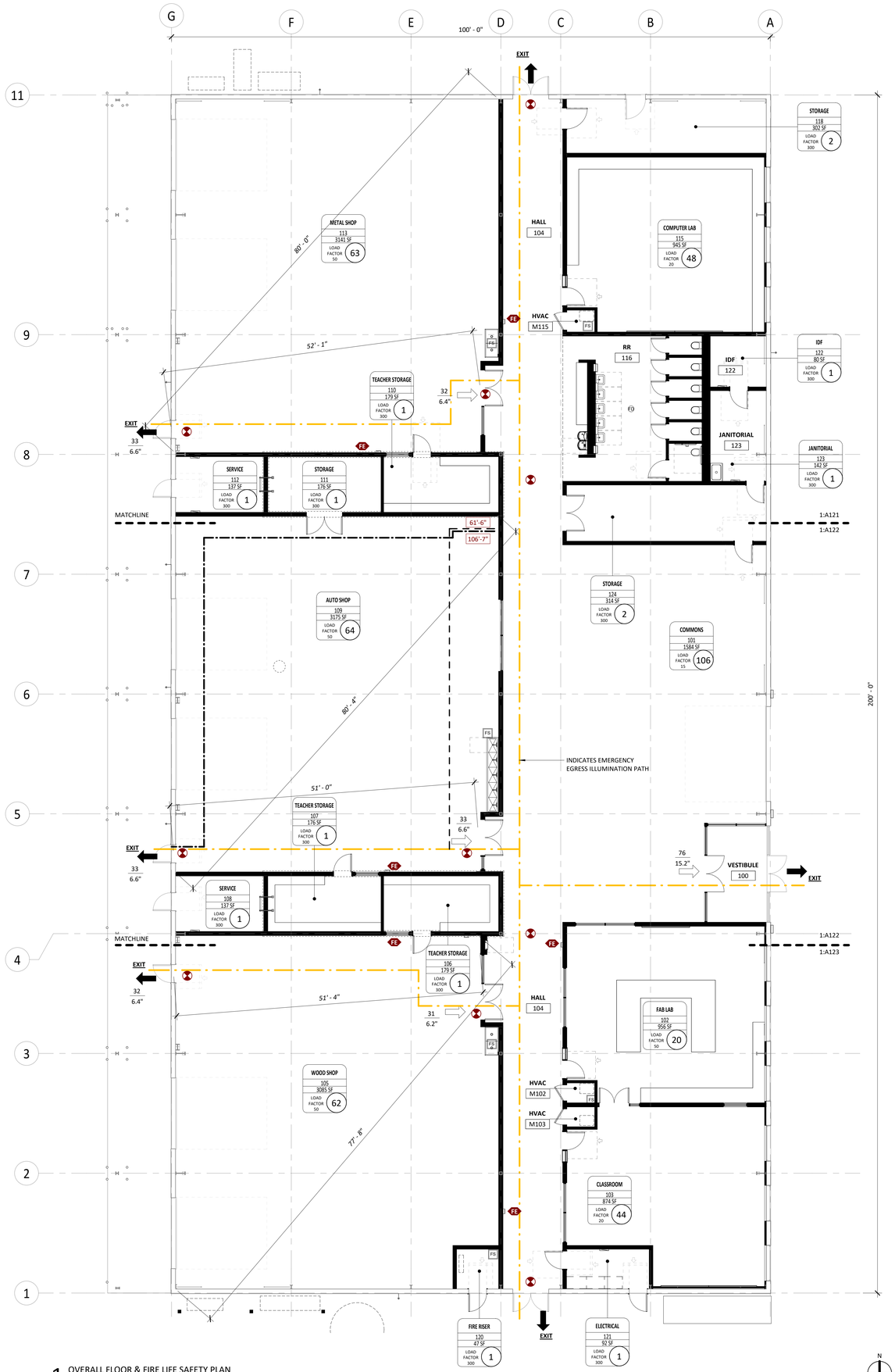

1 OVERALL FLOOR & FIRE LIFE SAFETY PLAN
1/8" = 1'-0"

N

0' 4' 8' 16' 32'

SUMMARY OF WORK & CODE ANALYSIS

SUMMARY OF WORK
INTERIOR IMPROVEMENTS TO EXISTING ACCESSORY CTE (CAREER AND TECHNICAL EDUCATION) BUILDING AT HIGH SCHOOL SITE. PROJECT INCLUDES WALL FRAMING, CASEWORK, OPENINGS, FINISHES AND DESIGN-BUILD PLUMBING, HVAC, ELECTRICAL & FIRE SPRINKLER WORK.

DEFERRED SUBMITTALS:
ELECTRICAL DESIGN
PLUMBING DESIGN
MECHANICAL DESIGN
FIRE SPRINKLER DESIGN
FIRE ALARM DESIGN

APPLICABLE CODES:
2025 OREGON STRUCTURAL SPECIALTY CODE (OSSC)
2025 OREGON ENERGY EFFICIENCY SPECIALTY CODE (OEESC)
2023 OREGON ELECTRICAL SPECIALTY CODE (OESC)
2025 OREGON MECHANICAL SPECIALTY CODE (OSSC)
2023 OREGON PLUMBING SPECIALTY CODE (OPSC)

OSSC CODE SUMMARY

CHAPTER 3 - USE & OCCUPANCY
PROPOSED OCCUPANCY: GROUP E
PROPOSED USE: SHOPS AND VOCATIONAL EDUCATION

CHAPTER 4 - SPECIAL REQUIREMENTS
COMBUSTIBLE STORAGE PER 413: NO HIGH-PILED STORAGE PROPOSED, STORAGE INCLUDES LUMBER AND MATERIALS ASSOCIATED WITH VOCATIONAL SHOPS.

COMBUSTIBLE DUST PER 426: DUST COLLECTION SYSTEM SHALL COMPLY WITH REQUIREMENTS OF THIS SECTION.

CHAPTER 5 - GENERAL BUILDING HEIGHTS & AREAS
ALLOWABLE HEIGHT: 60' (2 STORIES)
EXISTING HEIGHT: 22'-6" (1 STORY)
ALLOWABLE BUILDING AREA: 38,000 SF
EXISTING BUILDING AREA: 22,000 SF

CHAPTER 6 - TYPES OF CONSTRUCTION
CONSTRUCTION TYPE: 5B
FIRE SPRINKLERS: YES
FIRE ALARM SYSTEM: YES

CHAPTER 7 - FIRE AND SMOKE PROTECTION
NO FIRE RATED ASSEMBLIES REQUIRED

CHAPTER 8 - INTERIOR FINISHES
ALLOWABLE PER TABLE 803.13:
CORRIDORS: CLASS C
ROOMS & ENCLOSED SPACES: CLASS C

CHAPTER 9 - FIRE PROTECTION AND LIFE SAFETY SYSTEMS
SPRINKLERS REQUIRED PER 903.2.3
FIRE ALARM REQUIRED PER 907.2.3
PORTABLE FIRE EXTINGUISHERS PROVIDED LOCATED AT 75' INTERVALS, SEE PLANS

CHAPTER 10 - MEANS OF EGRESS
TOTAL OCCUPANCY COUNT: 421 OCCS, SEE FLS PLAN FOR SPACE OCCUPANCIES

MAX. COMMON PATH OF TRAVEL PER TABLE 1006.2.1: 75'
MAX. EXIT ACCESS TRAVEL DISTANCE PER TABLE 1017.2: 250'

TWO EXITS REQUIRED PER TABLE 1006.3.3, 6 EXITS PROVIDED, SEE FLS PLAN

EMERGENCY EGRESS ILLUMINATION PROVIDED PER SECTION 1008, SEE FLS PLAN
PANIC HARDWARE PROVIDED AT EXITS PER 1010.2.8

CORRIDORS NOT REQUIRED TO BE RATED PER TABLE 1020.2
MINIMUM CORRIDOR WIDTH 72"

CHAPTER 11 - ACCESSIBILITY AMENDMENT
NEW ITEMS COMPLY WITH THIS SECTION.

CHAPTER 29 - PLUMBING
CTE BUILDING DOES NOT CHANGE THE STUDENT CAPACITY OF THE EXISTING SCHOOL, RESTROOMS PROVIDED ARE IN ADDITION TO THE MINIMUM REQUIRED AS PROVIDED IN THE MAIN SCHOOL BUILDING.

PROVIDED: 6 WC & 5 LAV IN ALL-USER MULTI-STALL RESTROOM

FLS PLAN LEGEND

ROOM NAME
ROOM #
AREA
OCC FACTOR / OCC LOAD
ROOM OCCUPANCY TAG

EMERGENCY EGRESS ILLUMINATION PATH
EGRESS TRAVEL DISTANCE
COMMON PATH OF EGRESS TRAVEL
X'-X" TRAVEL DISTANCE
FE FIRE EXTINGUISHER
EXIT SIGN, ARROW(S) INDICATES DIRECTION (IF SHOWN)

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CRESWELL HIGH SCHOOL CTE BUILDING
INTERIOR IMPROVEMENT
33390 NIBLOCK LN, CRESWELL OR 97426
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OVERALL PLAN & CODE SUMMARY

A120

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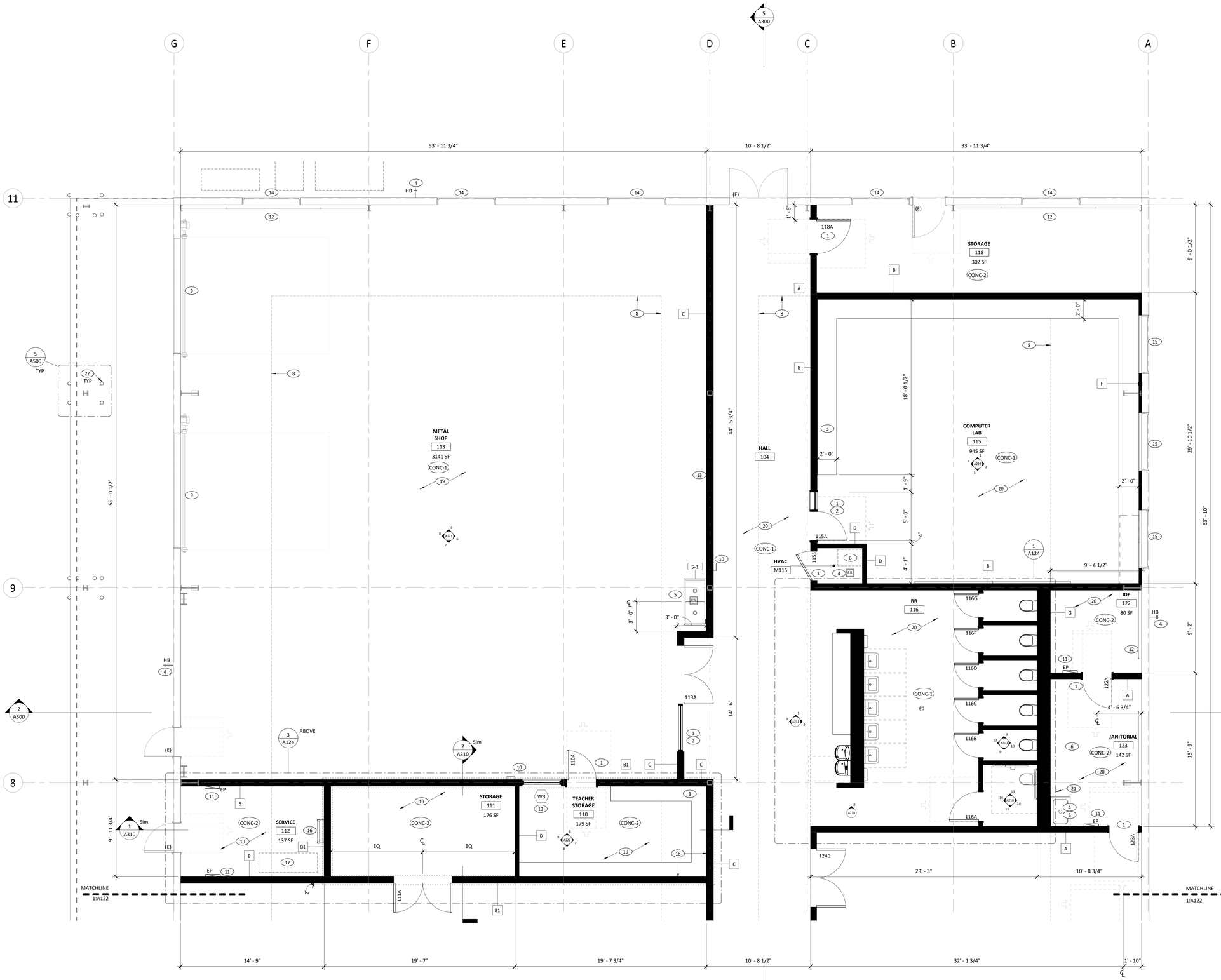

1 ENLARGED PLAN - NORTH
1/4" = 1'-0"

KEYNOTES

1. DOOR, FRAME, & HARDWARE, SEE DOOR SCHEDULE
2. HM FRAMED RELITE W/ TEMPERED GLAZING, SEE DOOR SCHEDULE
3. CASEWORK, SEE INTERIOR ELEVATIONS
4. PLUMBING FIXTURE, COORDINATE LOCATION, SEE PLUMBING
5. WHERE (N) PLUMBING FIXTURES OCCUR @ (E) CONC, CUT BACK & (N) DOWEL AS REQ'D
6. MECHANICAL EQUIPMENT, COORDINATE LOCATION, SEE MECHANICAL
7. NOT USED
8. LINETYPE INDICATES (E) 10'W CONC @ PERIMETER & CENTER GRIDLINE, 6" THICK
9. (E) OVERHEAD DOOR, COORDINATE CONTROL LOCATIONS & POWER REQUIREMENTS BY OTHERS
10. 2A-10BC FIRE EXTINGUISHER IN CABINET, SEE INTERIOR ELEVATIONS
11. ELECTRICAL PANEL, SEE ELECTRICAL
12. (E) STRUCTURAL X-BRACE BAY
13. HM FRAME STOREFRONT, SEE INTERIOR ELEVATIONS
14. (E) HIGH WINDOW @ 13'-0" AFF, SEE ALSO EXTERIOR ELEVATIONS
15. WINDOW COVERING @ (E) WINDOW @ 3'-6" AFF, SEE ALSO EXTERIOR ELEVATIONS
16. ALUMINUM MEZZANINE ACCESS LADDER, SEE SECTIONS
17. AIR COMPRESSOR LOCATION, SEE ALSO EQUIPMENT PLAN
18. LINETYPE INDICATES 1'-0" THICKENED SLAB UNDER LOAD BEARING WALLS, BY OTHERS, SEE ENLARGED SECTIONS
19. 6" THICK CONC SLAB ON GRADE W/ #4 @ 16" OC EA WAY @ MID-DEPTH OF SLAB @ SHOPS, BY OTHERS
20. 6" THICK CONC SLAB ON GRADE W/ #4 @ 24" OC EA WAY @ MID-DEPTH OF SLAB, BY OTHERS
21. FRP FINISH TO 4'-0" MIN AFF AT MOP SINK, MIN 6" PAST FIXTURE BACK & SIDES
22. BOLLARD LOCATION, SEE ALSO SITE PLAN

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ENLARGED PLAN - NORTH

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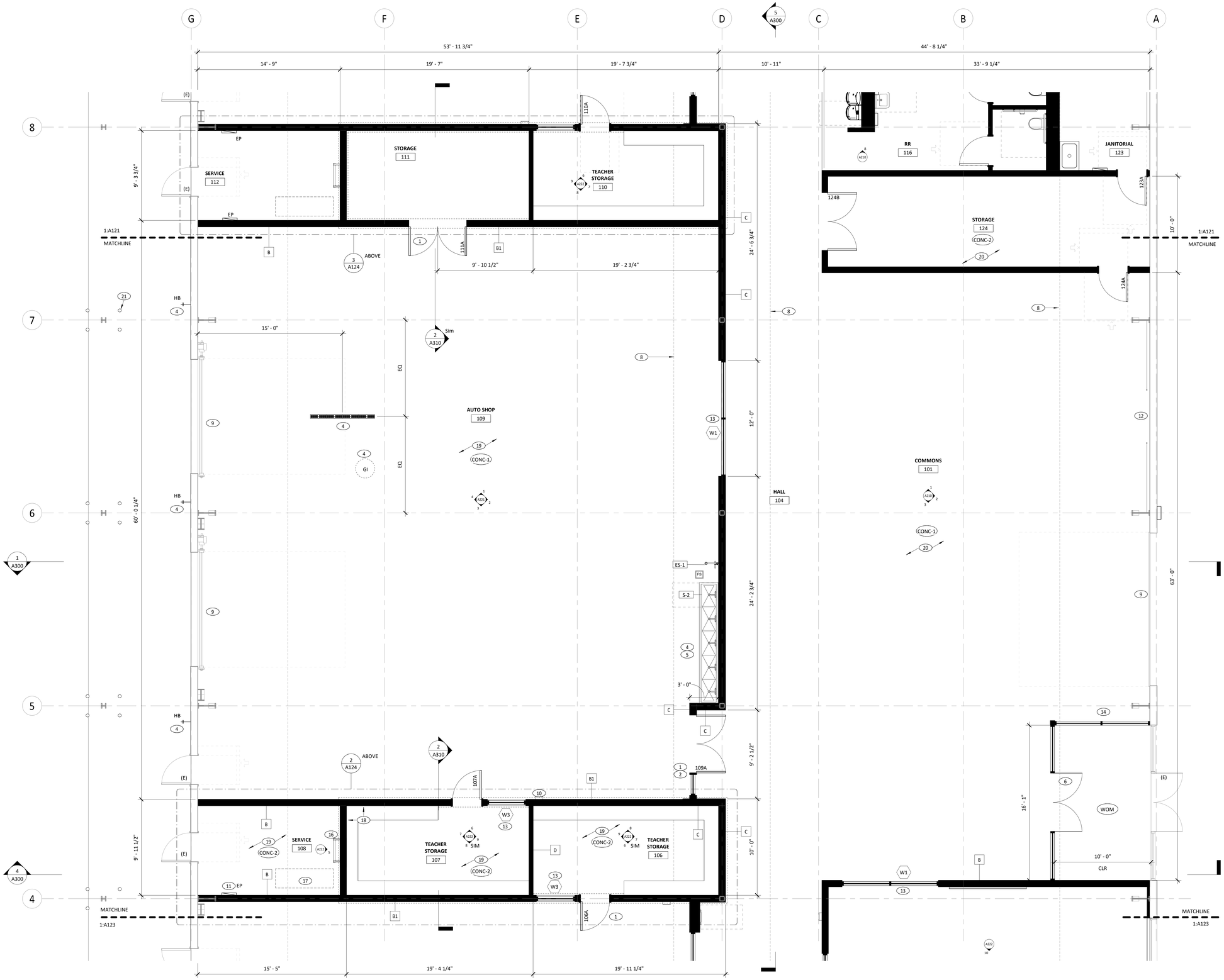

1 ENLARGED PLAN - CENTER
1/4" = 1'-0"

KEYNOTES

1. DOOR, FRAME, & HARDWARE, SEE DOOR SCHEDULE
2. HM FRAMED RELITE W/ TEMPERED GLAZING, SEE DOOR SCHEDULE
3. CASEWORK, SEE INTERIOR ELEVATIONS
4. PLUMBING FIXTURE, COORDINATE LOCATION, SEE PLUMBING
5. WHERE (N) PLUMBING FIXTURES OCCUR @ (E) CONC, CUT BACK & (N) DOWEL AS REQ'D
6. OFCI STOREFRONT DOOR & FRAME ASSY
7. HEADWALL ABOVE, SEE REFLECTED CEILING PLAN
8. LINETYPE INDICATES (E) 10'W CONC @ PERIMETER & CENTER GRIDLINE, 6" THICK
9. (E) OVERHEAD DOOR, COORDINATE CONTROL LOCATIONS & POWER REQUIREMENTS
10. 2A-10BC FIRE EXTINGUISHER IN CABINET, SEE INTERIOR ELEVATIONS
11. ELECTRICAL PANEL, SEE ELECTRICAL
12. (E) STRUCTURAL X-BRACE BAY
13. HM FRAME WINDOW, SEE SCHEDULE & INTERIOR ELEVATIONS
14. AL STOREFRONT ASSY, SEE INTERIOR ELEVATIONS
15. NOT USED
16. ALUMINUM MEZZANINE ACCESS LADDER, SEE SECTIONS
17. COMPRESSOR LOCATION, SEE ALSO EQUIPMENT PLAN
18. LINETYPE INDICATES 1'-0" THICKENED SLAB UNDER LOAD BEARING WALLS, BY OTHERS
19. 6" THICK CONC SLAB ON GRADE W/ #4 @ 16" OC EA WAY @ MID-DEPTH OF SLAB @ SHOPS, BY OTHERS
20. 6" THICK CONC SLAB ON GRADE W/ #4 @ 24" OC EA WAY @ MID-DEPTH OF SLAB, BY OTHERS
21. BOLLARD LOCATION, SEE ALSO SITE PLAN

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ENLARGED PLAN - CENTER

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REVISIONS

KEYNOTES

1. DOOR, FRAME, & HARDWARE, SEE DOOR SCHEDULE
2. HM FRAMED RELITE W/ TEMPERED GLAZING, SEE DOOR SCHEDULE
3. CASEWORK, SEE INTERIOR ELEVATIONS
4. PLUMBING FIXTURE, COORDINATE LOCATION, SEE PLUMBING
5. WHERE (N) PLUMBING FIXTURES OCCUR @ (E) CONC, CUT BACK & (N) DOWEL AS REQ'D
6. MECHANICAL EQUIPMENT, COORDINATE LOCATION, SEE MECHANICAL
7. HEADWALL ABOVE, SEE REFLECTED CEILING PLAN
8. LINETYPE INDICATES (E) 10'W CONC @ PERIMETER & CENTER GRIDLINE, 6" THICK
9. (E) OVERHEAD DOOR, COORDINATE CONTROL LOCATIONS & POWER REQUIREMENTS
10. 2A-10BC FIRE EXTINGUISHER IN CABINET, SEE INTERIOR ELEVATIONS
11. ELECTRICAL PANEL, SEE ELECTRICAL
12. (E) STRUCTURAL X-BRACE BAY
13. HM FRAME WINDOW, SEE INTERIOR ELEVATIONS
14. (E) HIGH WINDOW @ 13'-0" AFF, SEE ALSO EXTERIOR ELEVATIONS
15. WINDOW COVERING @ (E) WINDOW @ 3'-6" AFF, SEE ALSO EXTERIOR ELEVATIONS
16. ALUMINUM MEZZANINE ACCESS LADDER, SEE SECTIONS
17. COMPRESSOR LOCATION, SEE ALSO EQUIPMENT PLAN
18. LINETYPE INDICATES 1'-0" THICKENED SLAB UNDER LOAD BEARING WALLS, BY OTHERS
19. 6" THICK CONC SLAB ON GRADE W/ #4 @ 16" OC EA WAY @ MID-DEPTH OF SLAB @ SHOPS, BY OTHERS
20. 6" THICK CONC SLAB ON GRADE W/ #4 @ 24" OC EA WAY @ MID-DEPTH OF SLAB, BY OTHERS
21. ELECTRICAL SERVICE EQUIPMENT, SEE ELECTRICAL
22. BOLLARD LOCATION, SEE ALSO SITE PLAN

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ENLARGED PLAN - SOUTH

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1 ENLARGED PLAN - SOUTH
1/4" = 1'-0"

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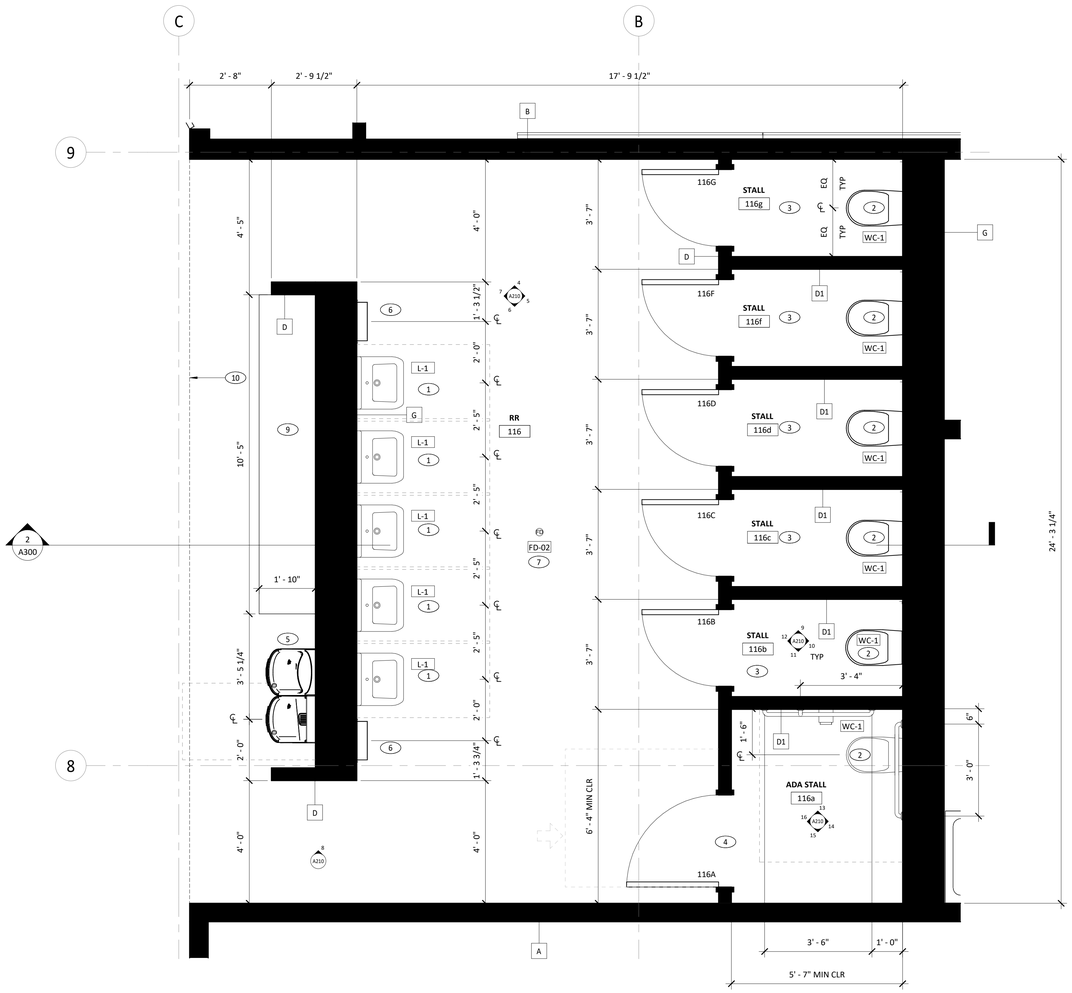
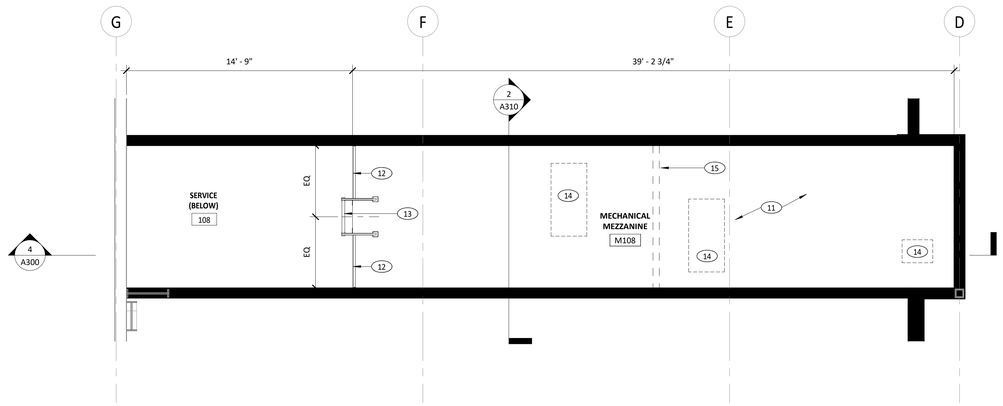
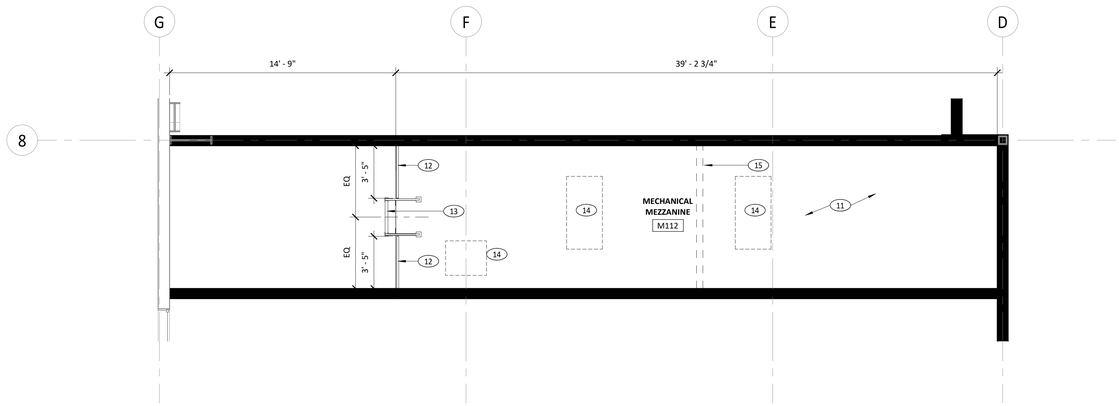


1 ENLARGED PLAN - GENDER NEUTRAL RESTROOM
1/2" = 1'-0"



2 ENLARGED PLAN - SOUTH MECHANICAL MEZZANINE M108
1/4" = 1'-0"



3 ENLARGED PLAN - NORTH MECHANICAL MEZZANINE M112
1/4" = 1'-0"

KEYNOTES

1. WALL-MOUNT LAVATORY, SEE PLUMBING
2. WALL -MOUNT WATER CLOSET, SEE PLUMBING
3. FULL HEIGHT GENDER NEUTRAL RESTROOM STALL, SEE INTERIOR ELEVATIONS
4. FULL HEIGHT GENDER NEUTRAL ADA ACCESSIBLE RESTROOM STALL, SEE INTERIOR ELEVATIONS
5. COMBINATION DRINKING FOUNTAIN & BOTTLE FILLER STATION, SEE INTERIOR ELEVATIONS & PLUMBING
6. RECESSED COMBINATION PAPER TOWEL DISPENSER & DISPOSAL
7. FLOOR DRAIN, SEE PLUMBING
8. FIRE EXTINGUISHER CABINET
9. BUILT-IN BENCH, SEE INTERIOR ELEVATIONS, DETAILS
10. HEADWALL ABOVE, SEE REFLECTED CEILING PLAN
11. FLOOR ASSY @ MECHANICAL MEZZANINE, SEE ENLARGED SECTIONS
12. SAFETY GUARDRAIL, GR-1, SEE INTERIOR ELEVATIONS, DETAILS
13. ACCESS LADDER, AL-1, SEE INTERIOR ELEVATIONS, DETAILS
14. MECHANICAL EQUIPMENT LOCATION, SEE MECHANICAL
15. INDICATES WALL BELOW

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ENLARGED PLANS

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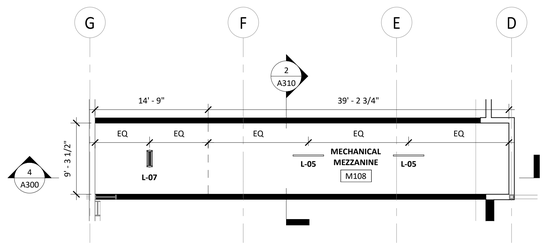
1 REFLECTED CEILING PLAN
1/8" = 1'-0"



2 ENLARGED CEILING PLAN - TYPICAL MECHANICAL MEZZANINE
1/8" = 1'-0"

KEYNOTES

1. (E) STRUCTURAL FRAMING
2. HEADWALL @ 11'-10" AFF
3. ACOUSTICAL CEILING TILE & GRID SYSTEM @ 12'-0" AFF, CENTER EACH WAY, THIS ROOM
4. 5/8" TYPE 'X' GYP BD CEILING @ 12'-0" AFF, THIS ROOM
5. OPEN TO STRUCTURE
6. COORDINATE OVERHEAD POWER DROPS W/ EQUIPMENT AS REQ'D, SEE EQUIPMENT PLAN
7. LIGHT FIXTURE, SEE LIGHT FIXTURE SCHEDULE SHEET A600, SEE ALSO ELECTRICAL
8. LINETYPE INDICATES RIDGE OF (E) ROOF
9. WALL-MOUNT PROJECTOR, SEE EQUIPMENT PLAN, ELEVATIONS
10. EXHAUST FAN, SEE MECHANICAL
11. LINETYPE INDICATES EMERGENCY EGRESS ILLUMINATION PATH, TYP
12. CEILING MOUNT PROJECTOR, COORDINATE LOCATION WITH OWNER, SEE EQUIPMENT PLAN

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REFLECTED CEILING PLAN

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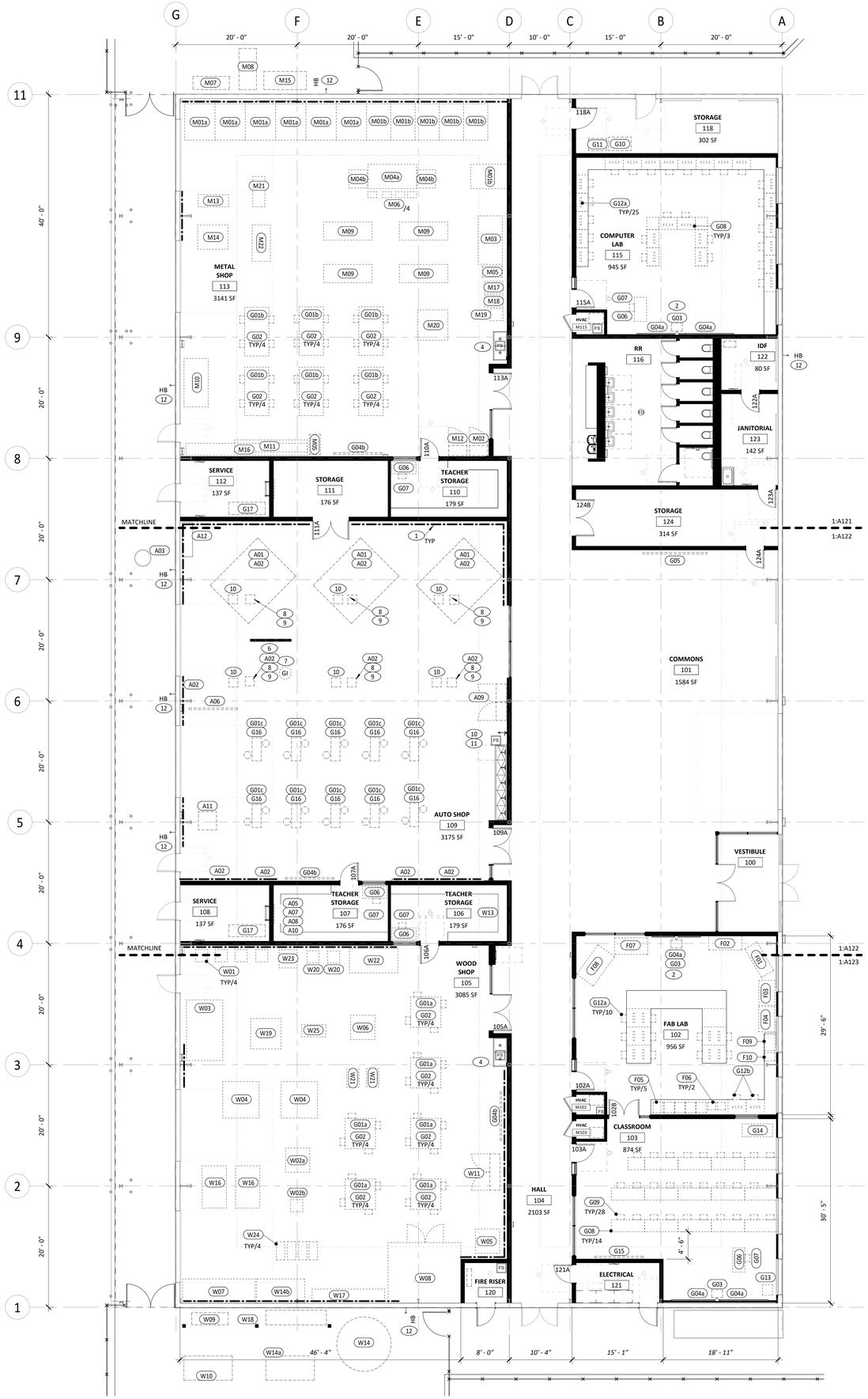

1 OVERALL EQUIPMENT PLAN
1/8" = 1'-0"

EQUIPMENT SCHEDULE

GENERAL

MARK	QTY	DESCRIPTION	REQUIREMENTS PWR	DUST	EXH
G01a		5'X5' WORK BENCH			
G01b		4'X8' WORK BENCH			
G01c		4'x2' WORK BENCH, MOBILE			
G02a		WORK CHAIR			
G03		SHORT-THROW PROJECTOR			
G04a		4'X8' TEACHING WHITE BOARD, WALL MOUNT			
G04b		4'X8' TEACHING WHITE BOARD, MOBILE			
G05		LARGE FORMAT PROJECTOR & SCREEN	X		
G06		TEACHER DESK			
G07		TEACHER CHAIR			
G08		STUDENT DESK			
G09		STUDENT CHAIR			
G10		PRINTER / COPIER	X		
G11		COFFEE MAKER	X		
G12a		HP DESKTOP COMPUTER STATION W/ CHAIR	X		
G12b		MAC DESKTOP COMPUTER STATION W/ CHAIR	X		
G13		CAMERA LOCKER			
G14		BABY LOCKER			
G15		WALL-MOUNTED TV SCREEN	X		
G16		STUDENT STOOL			
G17		AIR COMPRESSOR			

FAB LAB

F01		VINYL PRINTER	X		
F02		LARGE FORMAT POSTER PRINTER	X		
F03		HEAT PRESS	X		
F04		HEAT PRESS, RELOCATED	X		
F05		3D PRINTER	X		X
F06		FILAMENT DRYER	X		
F07		FLATBED SCANNER	X		
F08		LASER ENGRAVER	X		X
F09		CRICUT WORK STATION, MOBILE	X		
F10		BUTTON MAKER, MOBILE			

METAL SHOP

M01a		WELDING BOOTH, LARGE	X		X
M01b		WELDING BOOTH, SMALL	X		X
M02		PPE CABINET			
M03		PLASMA TABLE W/ WATER CONNECT	X		X
M04a		OA CUTTING TABLE, LARGE	X		X
M04b		OA CUTTING TABLE, SMALL	X		X
M05		VERTICAL BAND SAW	X		
M06		SMALL PLASMA CUTTER (FUTURE)	X		
M07		WELDING GAS BOTTLE STORAGE			
M08		AIR COMPRESSOR	X		
M09		LATHE	X		
M10		FLAT SHEET STORAGE RACK			
M11		LONG MATERIAL VERTICAL STORAGE RACK			
M12		HAZMAT LOCKER			
M13		MANUAL PAN BREAK			
M14		MANUAL STOMP SHEER			
M15		CENTRAL FUME EXTRACTION			X
M16		ADJUSTABLE HEIGHT ROLL CASE			
M17		BENCH GRINDER ON ROLLING STANDS	X		
M18		BELT SANDER ON STAND	X		
M19		DRILL PRESS	X		
M20		VERTICAL MILLING MACHINE	X		
M21		SM SLIP ROLL	X		
M22		IRON WORKER	X		

WOOD SHOP

MARK	QTY	DESCRIPTION	REQUIREMENTS PWR	DUST	EXH
W01		BAND SAW	X	X	
W02a		LARGE PLANER, 4X4	X	X	
W02b		SMALL PLANER, 2X2	X	X	
W03		CNC, 6X10	X	X	
W04		TABLE SAW, 6X6	X	X	
W05		STAIN STATION W/ EXHAUST HOOD, 4X4	X		X
W06		SANDING TABLE W/ DOWNDRAFT VENT, 4X4	X	X	X
W07		LUMBER RACK, INTERIOR, 4X12			
W08		PROJECT CAGE, 12X10			
W09		BAKER SCAFFOLD W/ HANDRAILS, 6X2			
W10		LADDER STORAGE, 8X4			
W11		HAZMAT LOCKER, 2X4			
W12		TOOL STORAGE			
W13		DUST COLLECTION, EXTERIOR		X	
W14a		PLYWOOD HORIZONTAL RACK, EXTERIOR			
W14b		PLYWOOD VERTICAL RACK, INTERIOR			
W16		JOINTER, 7X4	X	X	
W17		MITRE SAW, 2X2	X	X	
W18		PANEL SAW, 5X1	X	X	
W19		DRUM SANDER, 5X5	X	X	
W20		DRILL PRESS, 2X2	X	X	
W21		ROUTER, 3X2	X	X	
W22		SANDER, 4X8	X	X	
W23		DISK SANDER, 3X3	X	X	
W24		LATHE, 3X1	X	X	
W25		GRIZZLY BAND SAW, 4X2	X	X	

AUTO SHOP

A01		2-POST VEHICLE LIFT	X		
A02		AIR LINES CONNECTION POINT			
A03		OIL DRUM			
A04		NOT USED			
A05		BATTERY CHARGING SYSTEM TESTER	X		
A06		AUTO ELECTRICAL TRAINING PANEL	X		
A07		AUTO TOOL SETS	X		
A08		PNEUMATIC TOOL PACKAGES	X		
A09		PPE STORAGE			
A10		SPILL RESPONSE EQUIPMENT			
A11		TIRE BALANCER			
A12		FLAMMABLES STORAGE			

SCHEDULE NOTES

1. EQUIPMENT IS OFCI, UON.
2. COORDINATE POWER, DUST COLLECTION AND DEDICATED EXHAUST REQUIREMENTS WITH OWNER.

KEYNOTES

1. INDICATES EQUIPMENT WALL, DUPLEX RECEPTACLE ON DEDICATED CIRCUIT & 220V RECEPTACLE @ 8'-0" OC MAX, BY OTHERS, SEE ELECTRICAL FOR REFERENCE
2. PRESENTATION WALL, SEE INTERIOR ELEVATIONS
3. MECHANICAL EQUIPMENT, SEE MECHANICAL
4. SS SHOP SINK W/ FAUCET-MOUNT EYEWASH STATION, SEE FLOOR PLAN & PLUMBING
5. EMERGENCY SHOWER, SEE FLOOR PLAN & PLUMBING
6. TRENCH DRAIN, SEE FLOOR PLAN & PLUMBING
7. OIL/GREASE INTERCEPTOR, SEE FLOOR PLAN & PLUMBING
8. 220V DROP OUTLET, SEE ELECTRICAL
9. 110/120V OUTLET REEL, SEE ELECTRICAL
10. EXHAUST HOSE REEL, SEE MECHANICAL
11. SS 5 STATION HAND/EYEWASH, SEE FLOOR PLAN & PLUMBING
12. HOSE BIB, SEE PLUMBING

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OVERALL
EQUIPMENT PLAN

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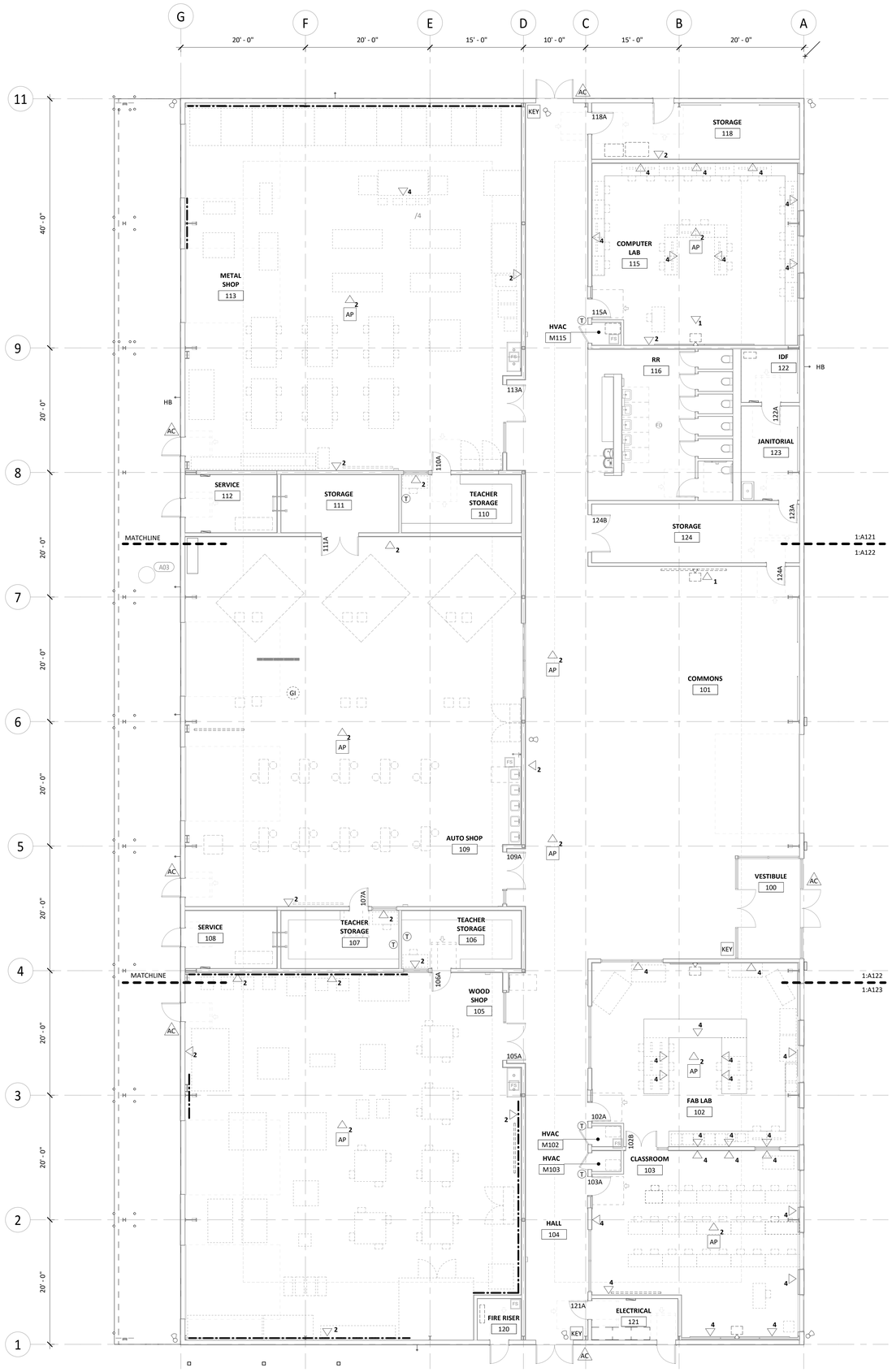

1 DATA & NETWORK PLAN
1/8" = 1'-0"

SYMBOL LEGEND

APPROX. LOCATIONS, COORDINATE W/ OWNER

- KEY — ACCESS PANEL / KEYPAD
- — SECURITY CAMERA
- AC — ACCESS CONTROL
- T — HVAC CONTROLS
- # — DATA CONNECTION
- — PROJECTOR
- AP — WIRELESS ACCESS POINT

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DATA AND NETWORK PLAN

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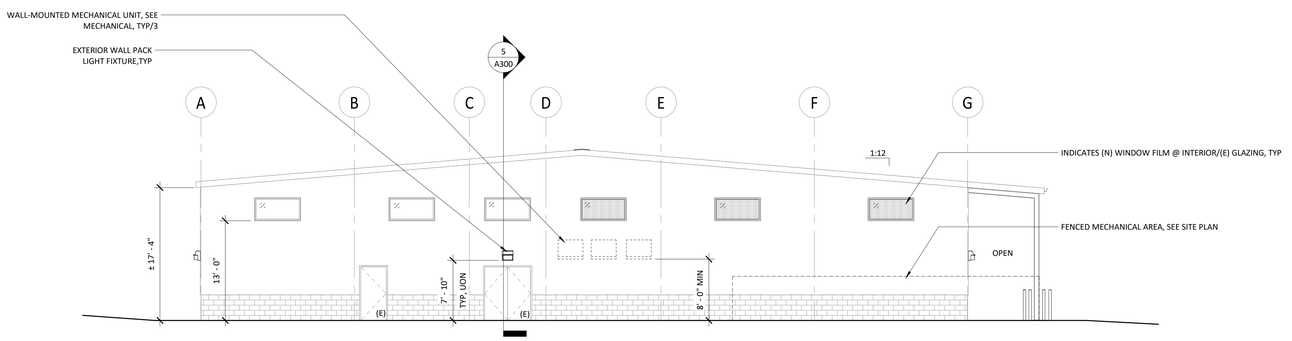
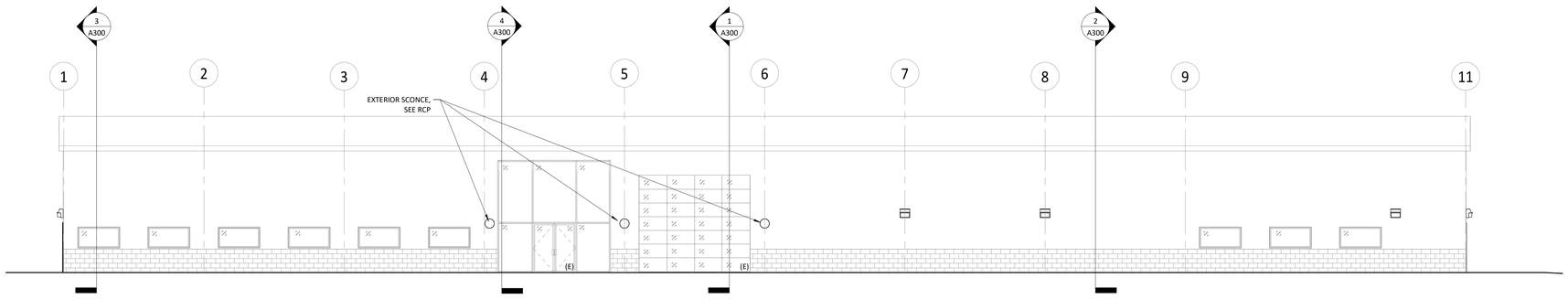
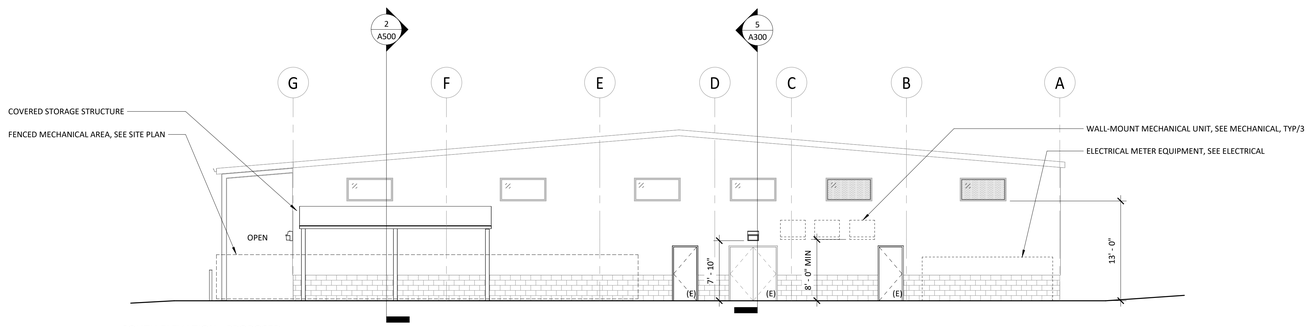


1 NORTH ELEVATION - PROPOSED
1/8" = 1'-0"

0' 4' 8' 16' 32'



2 EAST ELEVATION - PROPOSED
1/8" = 1'-0"



3 SOUTH ELEVATION - PROPOSED
1/8" = 1'-0"



4 WEST ELEVATION - PROPOSED
1/8" = 1'-0"

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REVISIONS

CRESWELL HIGH SCHOOL CTE BUILDING
INTERIOR IMPROVEMENT
33390 NIBLOCK LN, CRESWELL OR 97426
CONSTRUCTION DOCUMENTS

JOB NO: 26767
ISSUE DATE: 18 NOV 2026

EXTERIOR ELEVATIONS

A200

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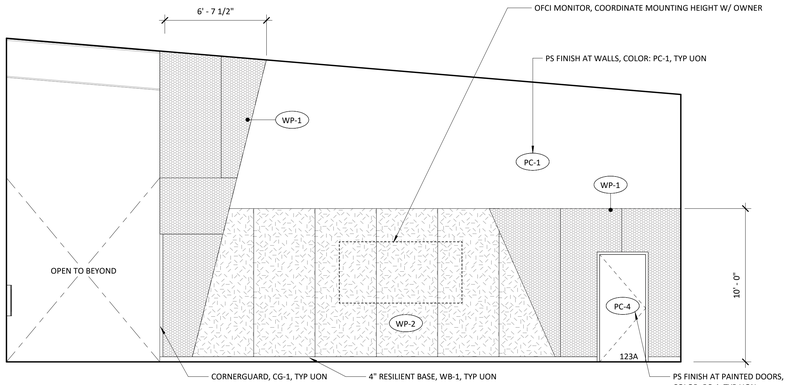

1 101 COMMONS - NORTH
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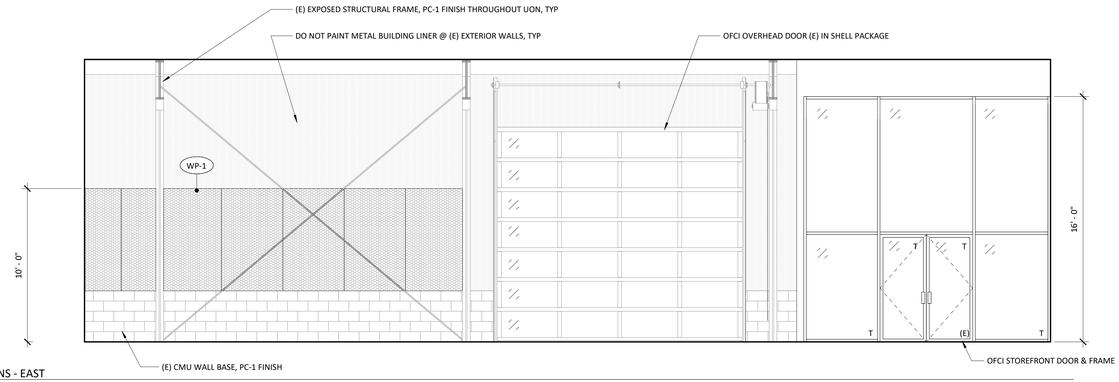

2 101 COMMONS - EAST
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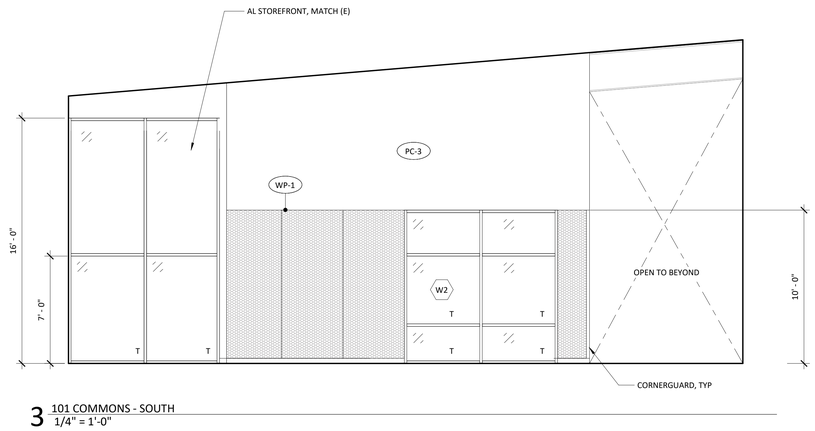

3 101 COMMONS - SOUTH
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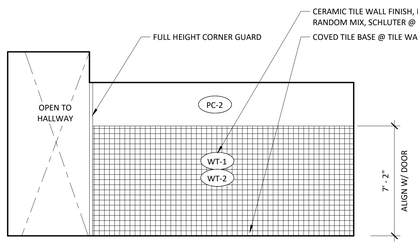
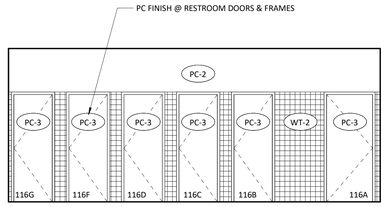
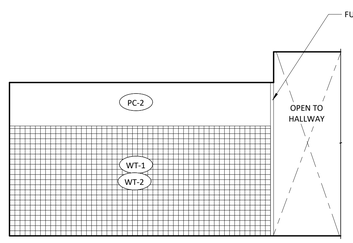


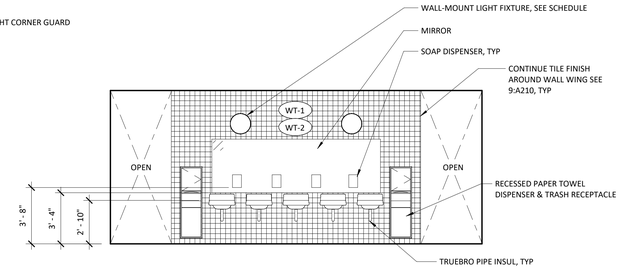
4 116 RESTROOM NORTH
1/4" = 1'-0"



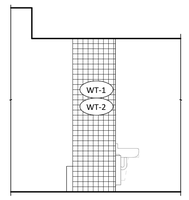
5 116 RESTROOM - EAST
1/4" = 1'-0"



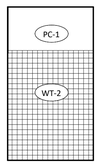
6 116 RESTROOM SOUTH
1/4" = 1'-0"



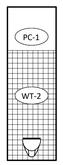
7 116 RESTROOM - WEST
1/4" = 1'-0"



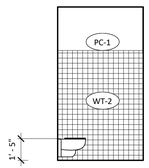
8 116 RESTROOM - WALL WING
1/4" = 1'-0"



9 TYPICAL STALL - NORTH
1/4" = 1'-0"



10 TYPICAL STALL - EAST
1/4" = 1'-0"



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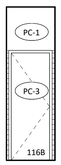
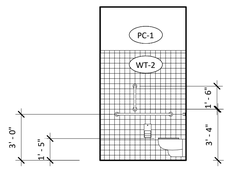
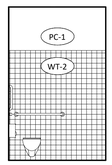
1/4" = 1'-0"



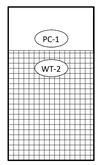
12 TYPICAL STALL - WEST
1/4" = 1'-0"



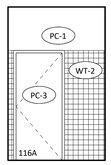
13 ADA STALL - NORTH
1/4" = 1'-0"



14 ADA STALL - EAST
1/4" = 1'-0"



15 ADA STALL - SOUTH
1/4" = 1'-0"



16 ADA STALL - WEST
1/4" = 1'-0"

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INTERIOR ELEVATIONS - COMMON AREAS

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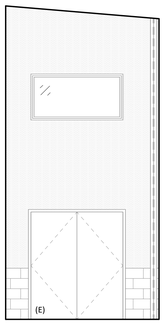
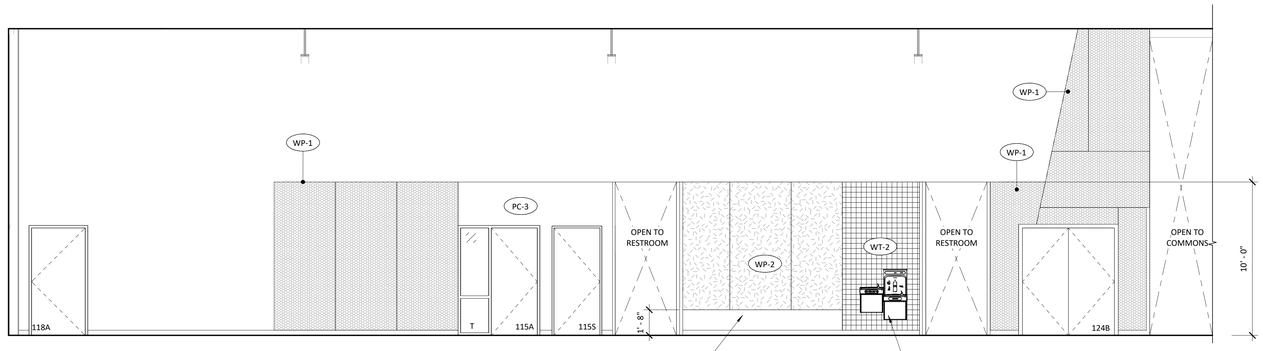


1 104 HALLWAY - NORTH
1/4" = 1'-0"



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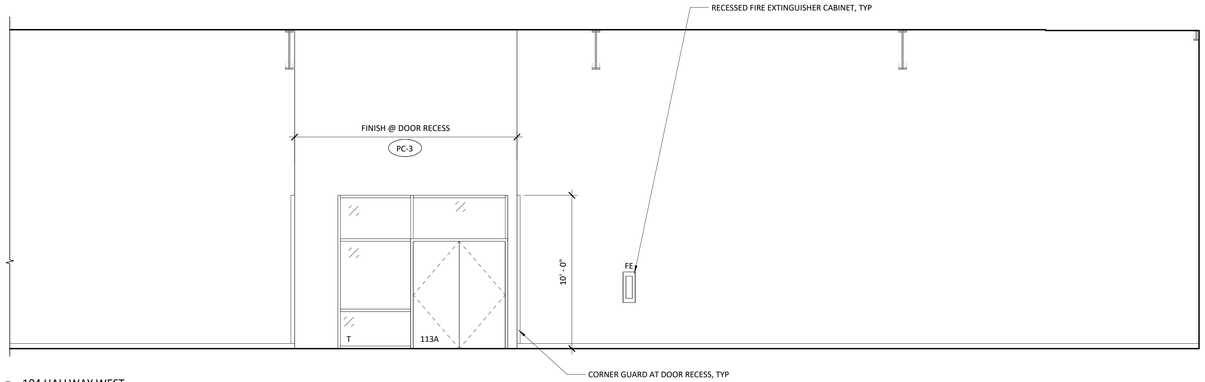

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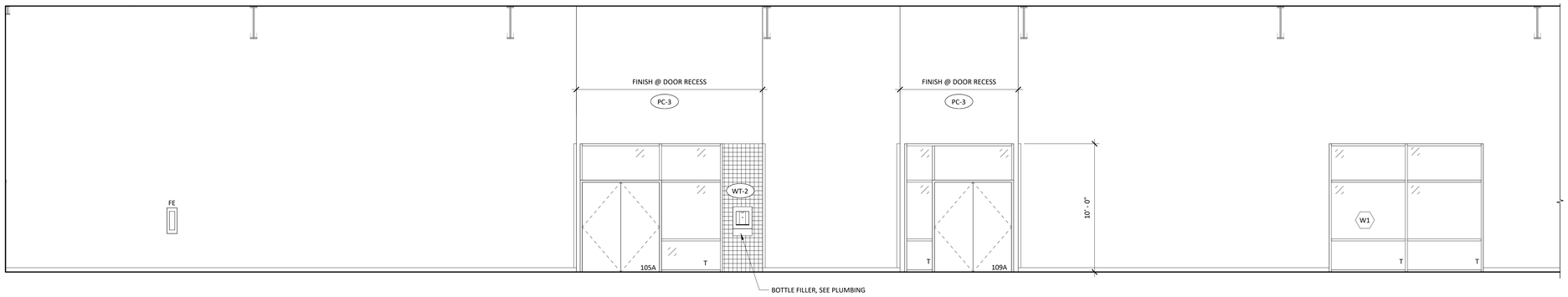

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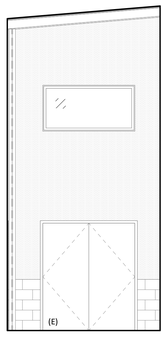
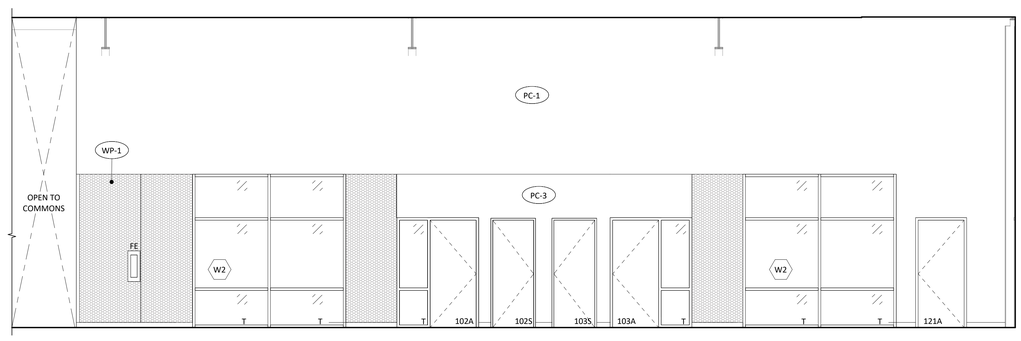


5 104 HALLWAY SOUTH
1/4" = 1'-0"



6 104 HALLWAY EAST 2
1/4" = 1'-0"

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INTERIOR ELEVATIONS - COMMON AREAS

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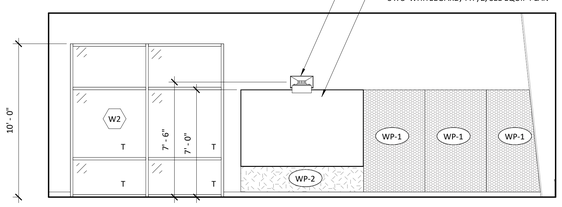
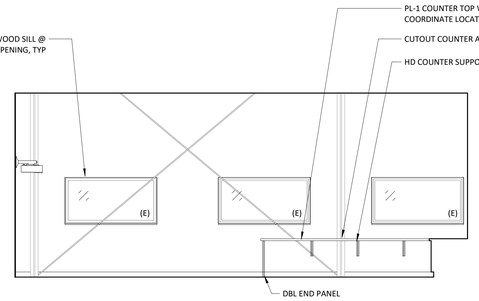


1 102 FAB LAB - NORTH
1/4" = 1'-0"



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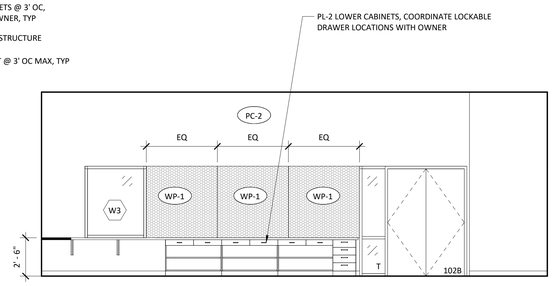
1/4" = 1'-0"



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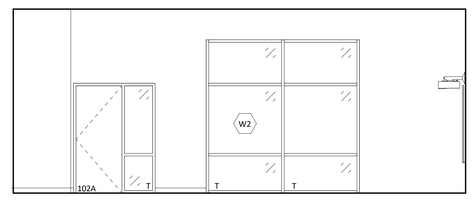
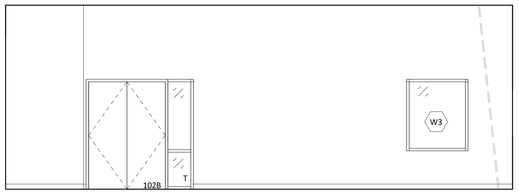
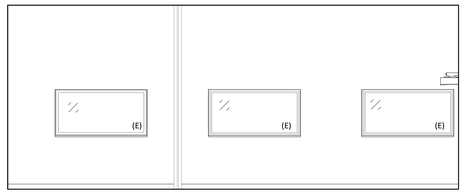
1/4" = 1'-0"



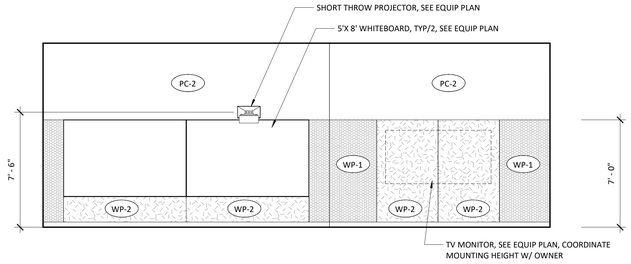
4 102 FAB LAB - WEST
1/4" = 1'-0"



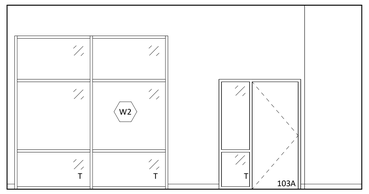
5 103 LAB CLASSROOM - NORTH
1/4" = 1'-0"



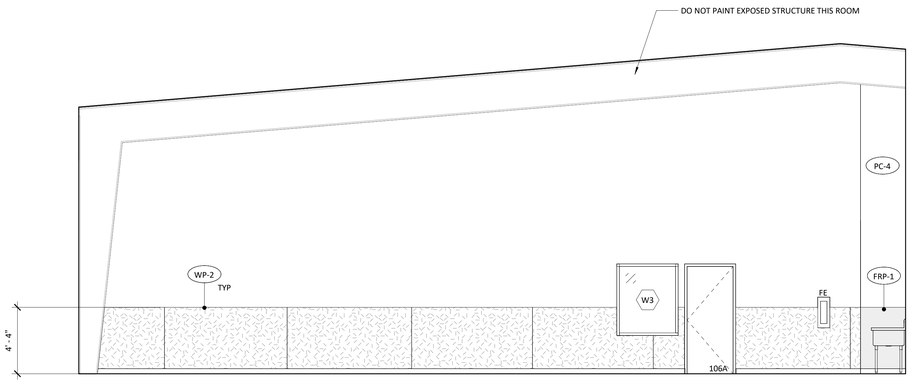
6 103 LAB CLASSROOM - EAST
1/4" = 1'-0"



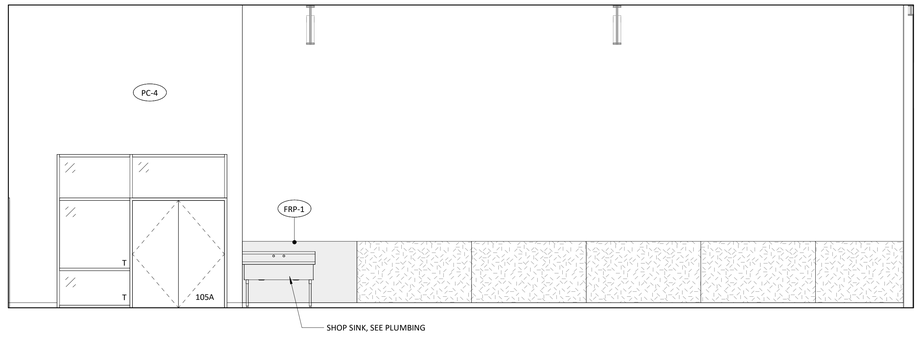
7 103 LAB CLASSROOM - SOUTH
1/4" = 1'-0"



8 103 LAB CLASSROOM - WEST
1/4" = 1'-0"



9 105 WOOD SHOP - NORTH
1/4" = 1'-0"



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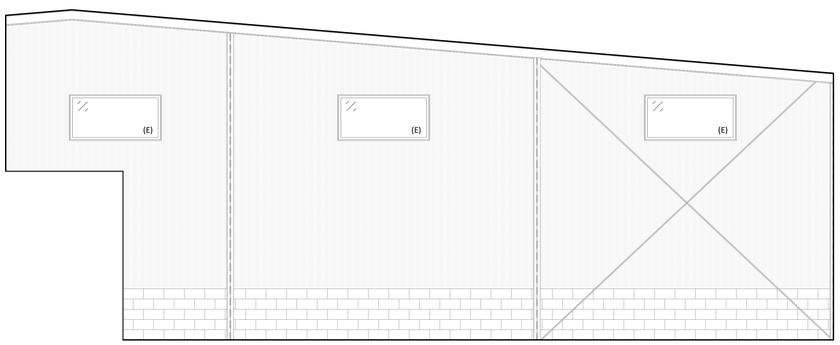
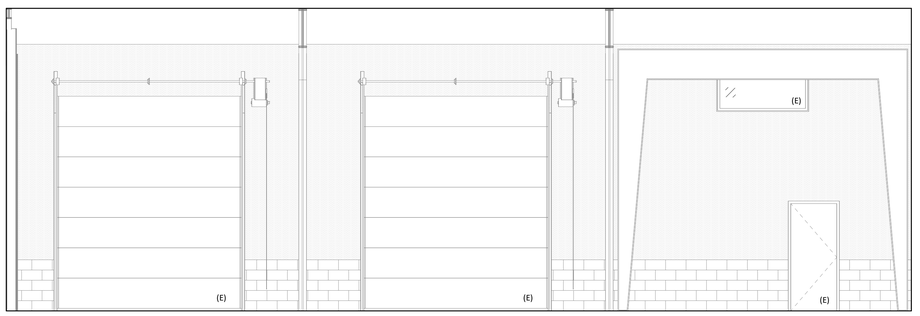


11 105 WOOD SHOP - SOUTH
1/4" = 1'-0"



12 105 WOOD SHOP - WEST
1/4" = 1'-0"

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INTERIOR ELEVATIONS - SHOPS & LABS

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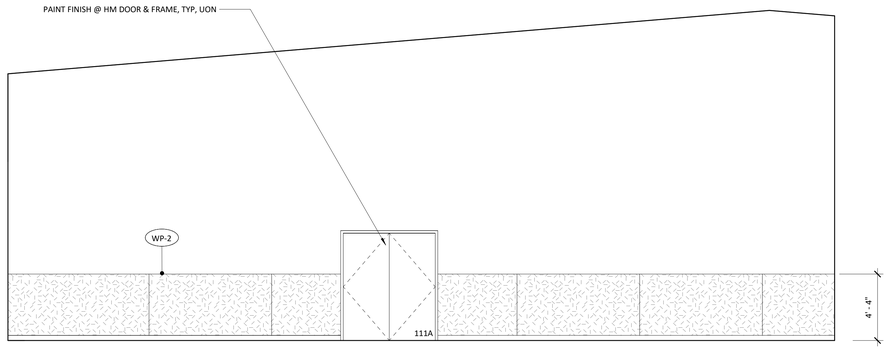
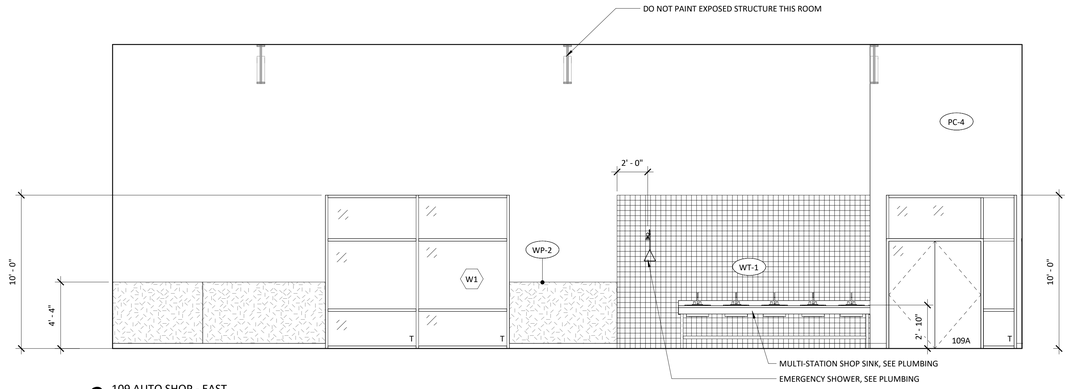


1 109 AUTO SHOP - NORTH
1/4" = 1'-0"



2 109 AUTO SHOP - EAST
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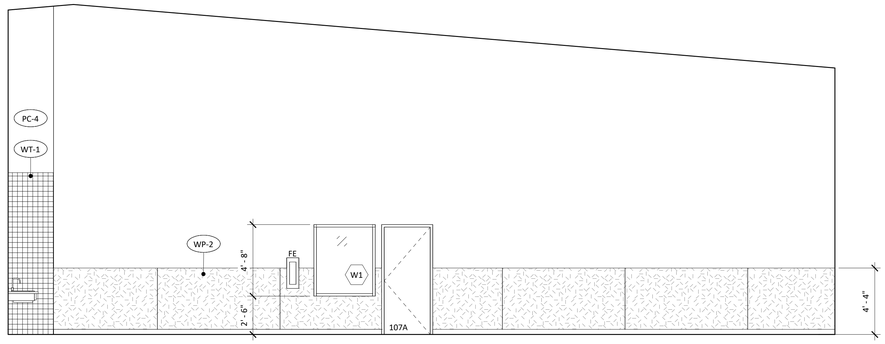

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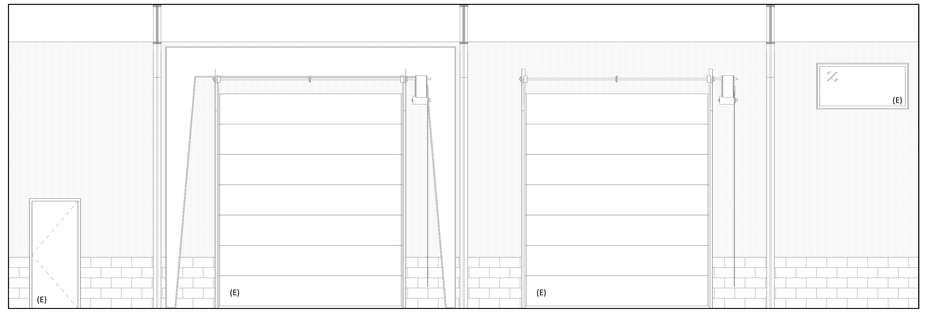

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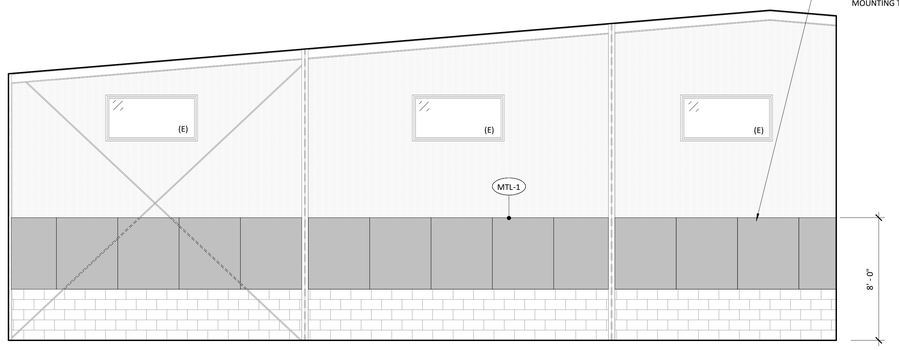

5 113 METAL SHOP - NORTH
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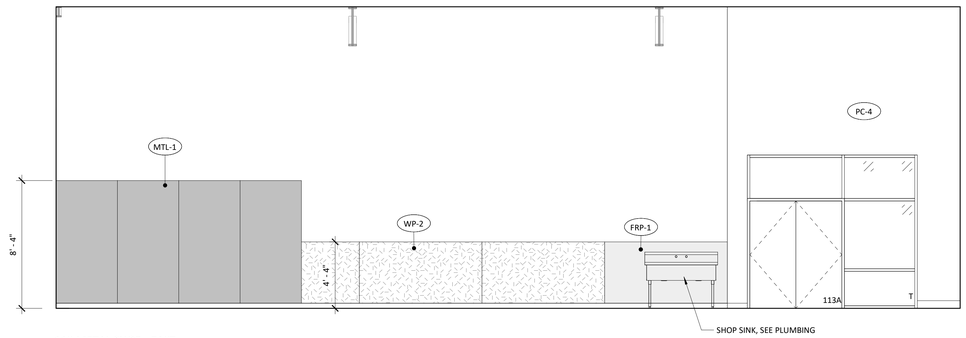
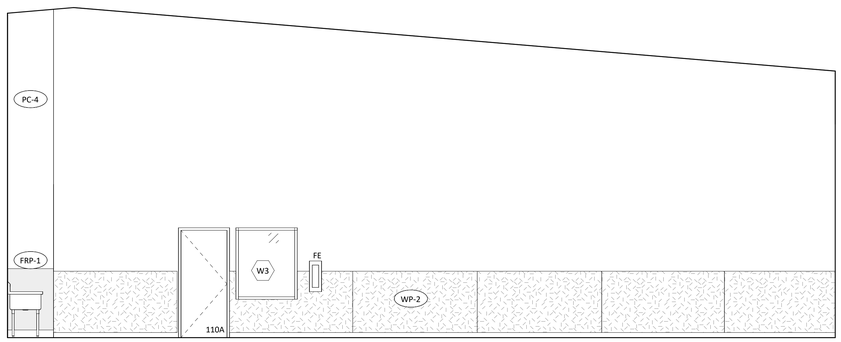
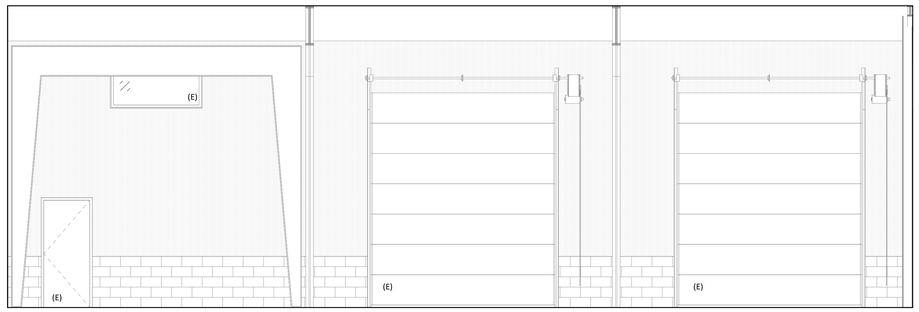


6 113 METAL SHOP - EAST
1/4" = 1'-0"



7 113 METAL SHOP - SOUTH
1/4" = 1'-0"



8 113 METAL SHOP - WEST
1/4" = 1'-0"

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INTERIOR ELEVATIONS - SHOPS & LABS

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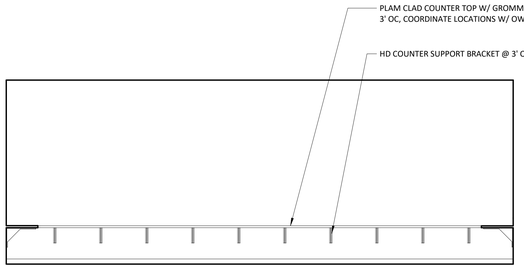
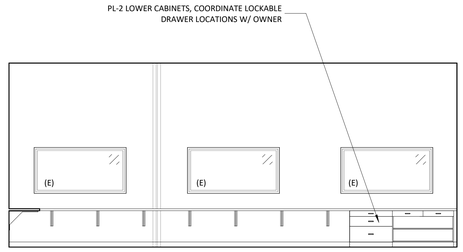


1 115 COMPUTER LAB - NORTH
1/4" = 1'-0"



2 115 COMPUTER LAB - EAST
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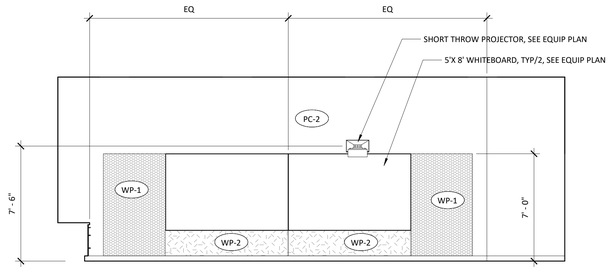

3 115 COMPUTER LAB - SOUTH
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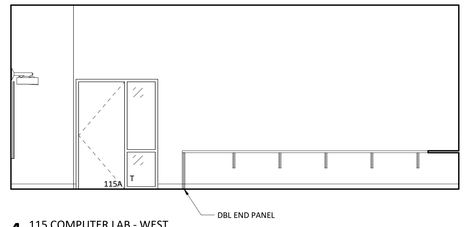
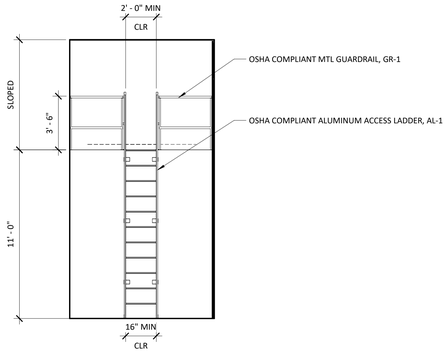
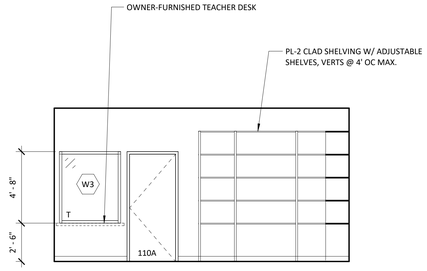


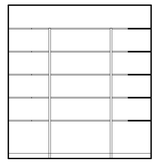
4 115 COMPUTER LAB - WEST
1/4" = 1'-0"



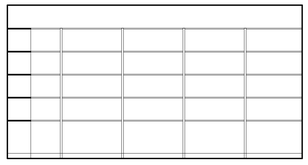
5 TYPICAL MEZZANINE ACCESS LADDER
1/4" = 1'-0"



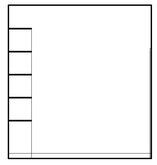
6 110 TEACHER STORAGE - NORTH
1/4" = 1'-0"



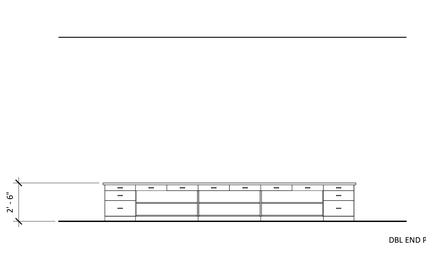
7 110 TEACHER STORAGE - EAST
1/4" = 1'-0"



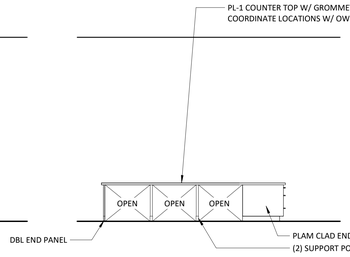
8 110 TEACHER STORAGE - SOUTH
1/4" = 1'-0"



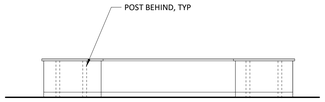
9 110 TEACHER STORAGE WEST
1/4" = 1'-0"



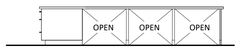
10 102 FAB LAB - CASEWORK NORTH
1/4" = 1'-0"



11 102 FAB LAB - CASEWORK EAST
1/4" = 1'-0"



12 102 FAB LAB - CASEWORK SOUTH
1/4" = 1'-0"



13 102 FAB LAB - CASEWORK WEST
1/4" = 1'-0"

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REVISIONS

CRESWELL HIGH SCHOOL CTE BUILDING
INTERIOR IMPROVEMENT
33390 NIBLOCK LN, CRESWELL OR 97426
CONSTRUCTION DOCUMENTS

JOB NO: 26767
ISSUE DATE: 18 NOV 2026

INTERIOR ELEVATIONS - LABS & TYPICAL

A222

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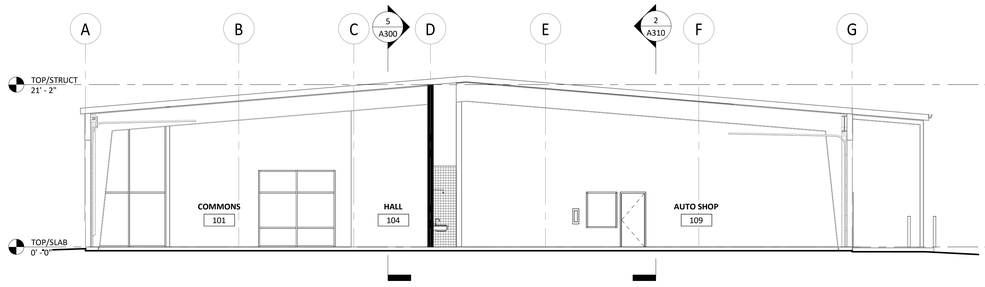
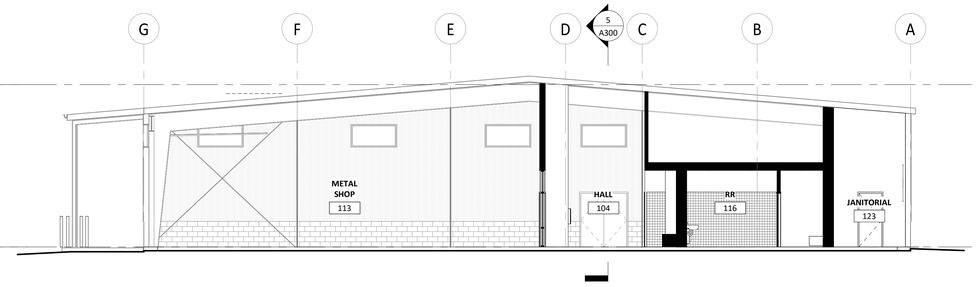
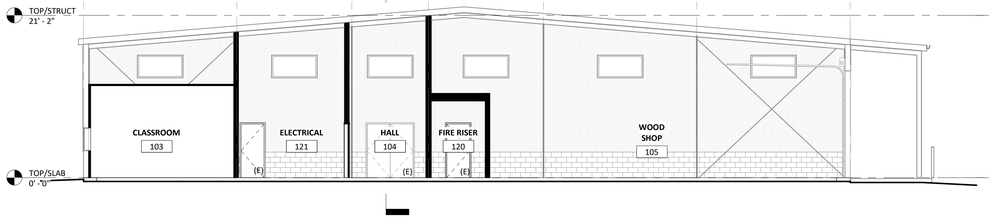


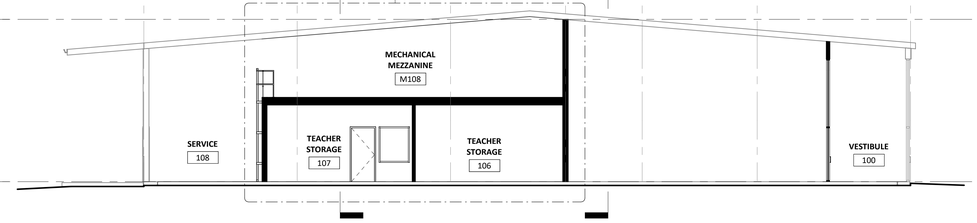
1 SECTION EW -1
1/8" = 1'-0"



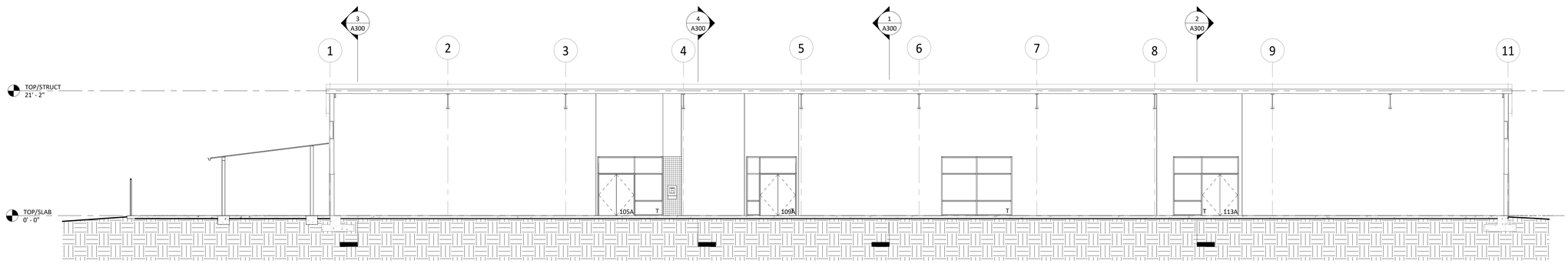
2 SECTION EW - 2
1/8" = 1'-0"



3 SECTION EW - 3
1/8" = 1'-0"



4 SECTION EW - 4
1/8" = 1'-0"



5 SECTION NS - 1
1/8" = 1'-0"

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SECTIONS

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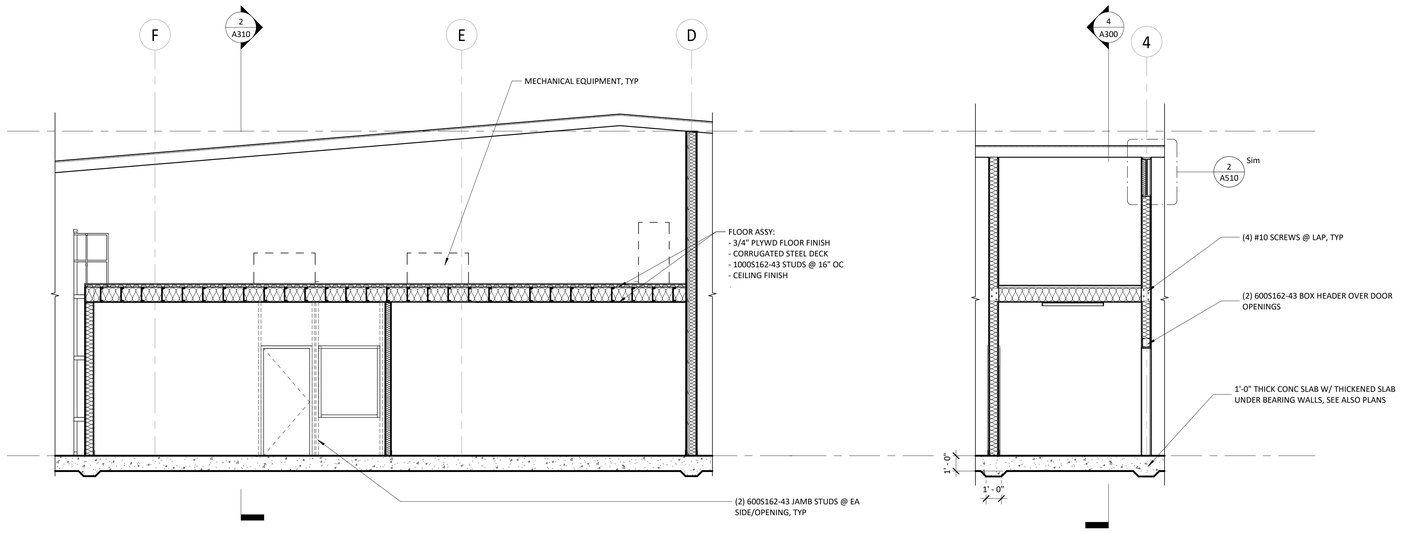

1 ENLARGED SECTION 2
1/4" = 1'-0"

2 ENLARGED SECTION 3
1/4" = 1'-0"

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ENLARGED SECTIONS

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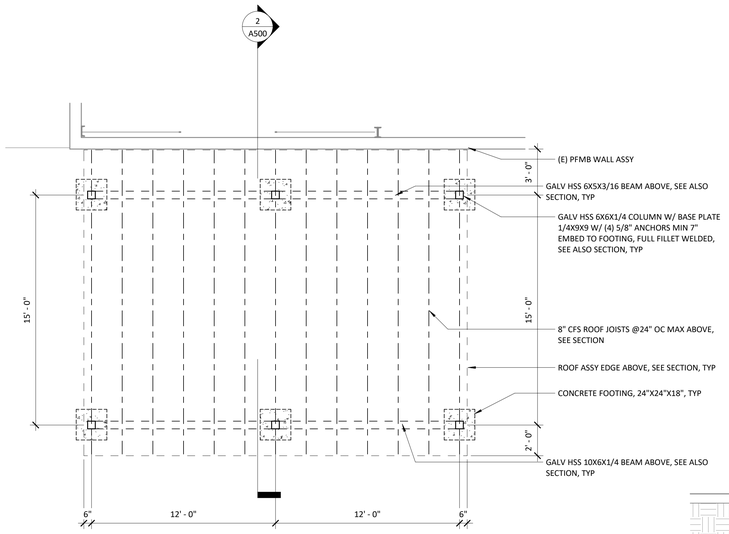
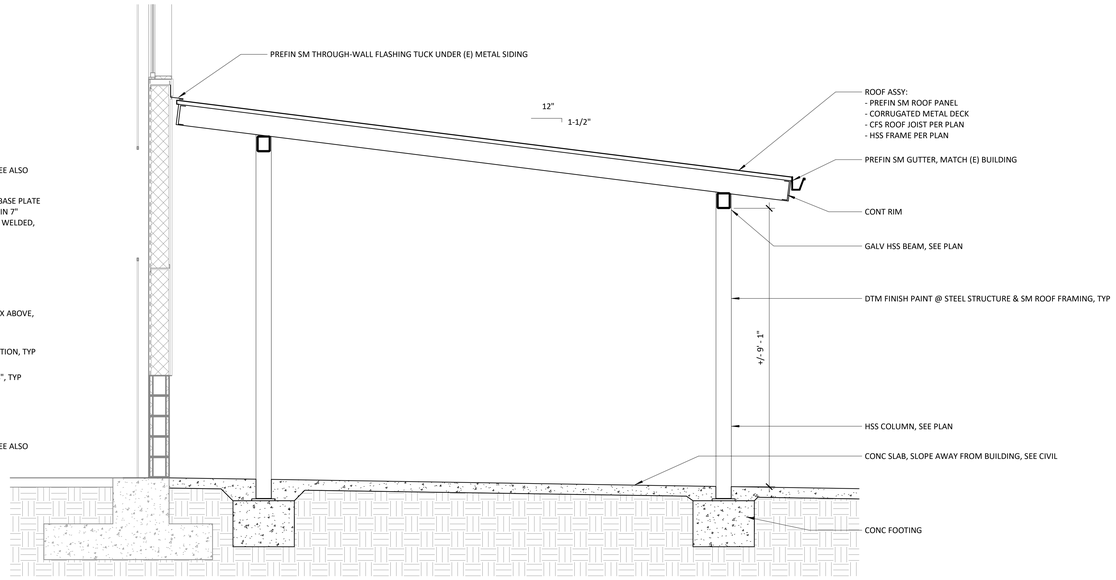
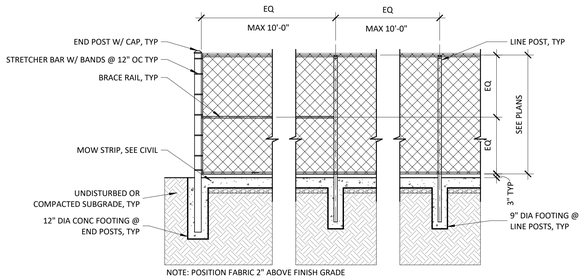
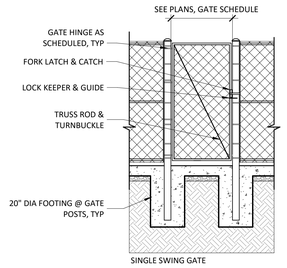


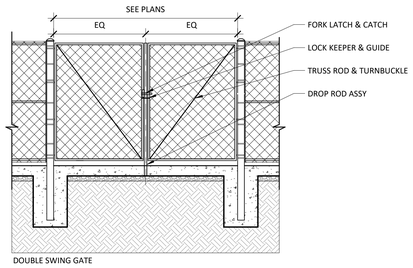
1 ENLARGED PLAN - COVERED STORAGE
1/4" = 1'-0"



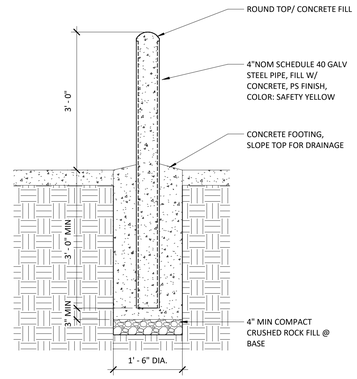
2 COVERED STORAGE STRUCTURE SECTION
1/2" = 1'-0"



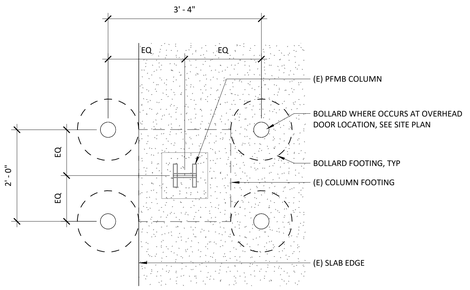




3 TYPICAL FENCING DETAIL
1/4" = 1'-0"



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



5 BOLLARD PLAN DETAIL
3/4" = 1'-0"

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EXTERIOR DETAILS

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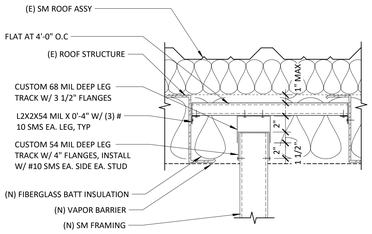
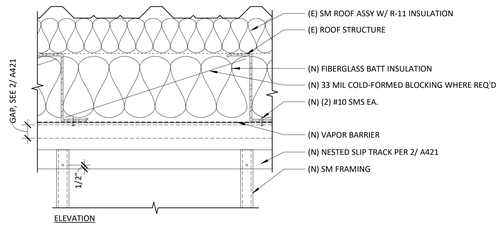
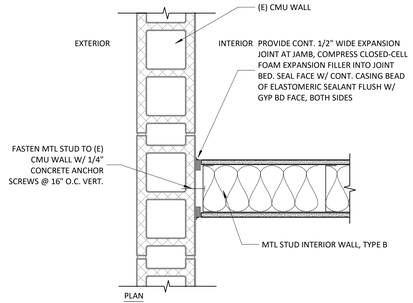


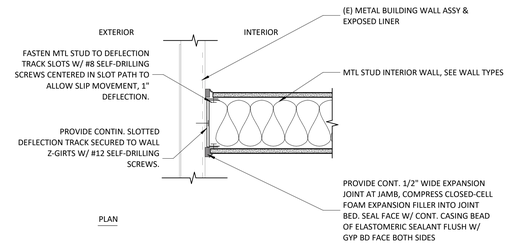
1 SM FRAMING - WALL HEAD PARALLEL TO JOIST
1 1/2" = 1'-0"



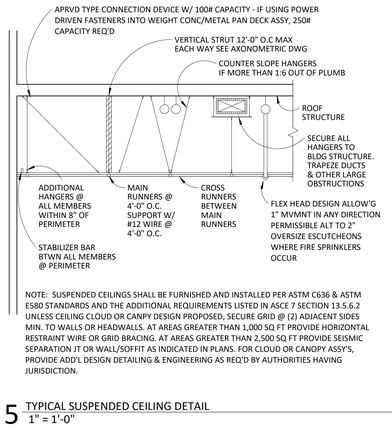
2 SM FRAMING - WALL HEAD PERPENDICULAR TO JOIST
1 1/2" = 1'-0"



3 SM FRAMING - WALL JAMB @ (E) CMU
1 1/2" = 1'-0"

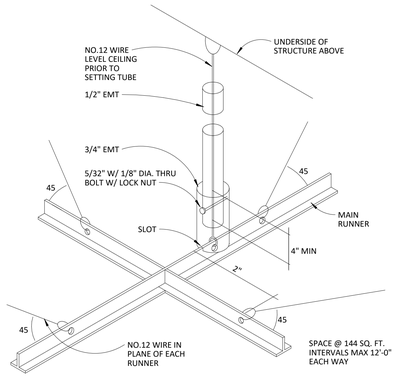


4 SM FRAMING - WALL JAMB @ (E) METAL BUILDING
1 1/2" = 1'-0"



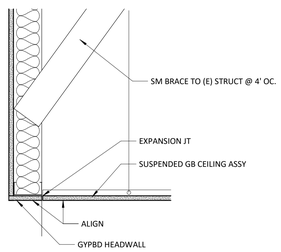
NOTE: SUSPENDED CEILINGS SHALL BE FURNISHED AND INSTALLED PER ASTM C636 & ASTM E580 STANDARDS AND THE ADDITIONAL REQUIREMENTS LISTED IN ASCE 7 SECTION 13.5.6.2 UNLESS CEILING CLOUD OR CANPY DESIGN PROPOSED, SECURE GRID @ (2) ADJACENT SIDES MIN. TO WALLS OR HEADWALLS. AT AREAS GREATER THAN 1,000 SQ FT PROVIDE HORIZONTAL RESTRAINT WIRE OR GRID BRACING. AT AREAS GREATER THAN 2,500 SQ FT PROVIDE SEISMIC SEPARATION JT OR WALL/SOFFIT AS INDICATED IN PLANS. FOR CLOUD OR CANOPY ASSY'S, PROVIDE ADD'L DESIGN DETAILING & ENGINEERING AS REQ'D BY AUTHORITIES HAVING JURISDICTION.

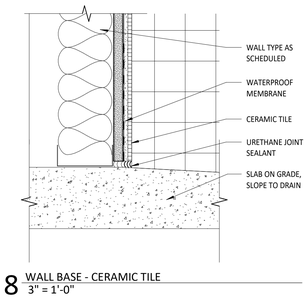
5 TYPICAL SUSPENDED CEILING DETAIL
1" = 1'-0"



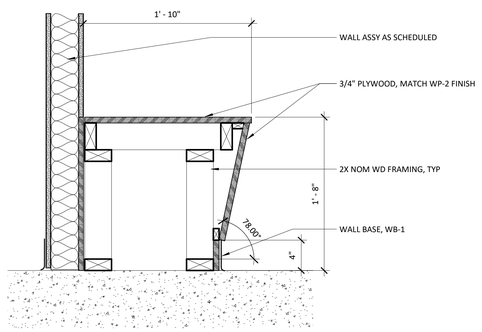
NOTE: SET TUBE STRUT TIGHT TO CEILING GRID & STRUCTURE. INSTALL THRU BOLT TO SECURE TUBES LAP 4" MIN IN FULLY EXTENDED POSITION

6 HEADWALL DETAIL
1 1/2" = 1'-0"

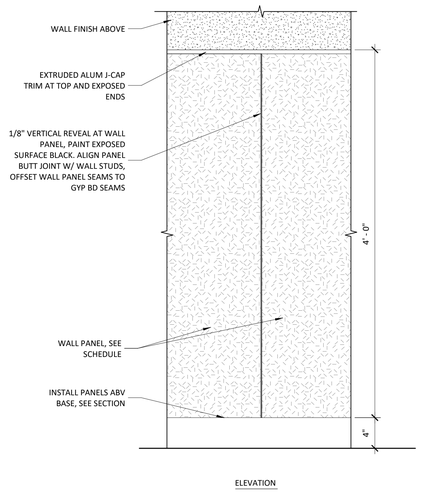




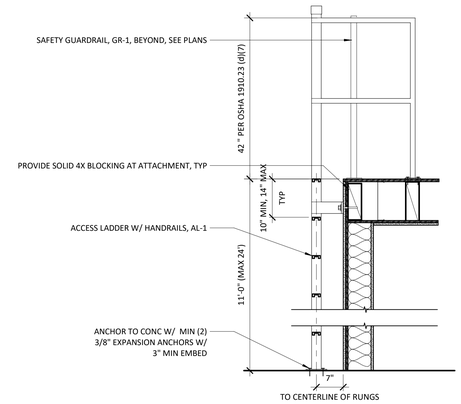
8 WALL BASE - CERAMIC TILE
3" = 1'-0"



9 BENCH SEAT DETAIL
1 1/2" = 1'-0"



7 WALL PROTECTION PANEL
1 1/2" = 1'-0"



10 OSHA LADDER
3/4" = 1'-0"

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INTERIOR DETAILS

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DOOR SCHEDULE

ID		DOORS						FRAME					
		SIZE		DOOR	DOOR			FRAME	FRAME		FIRE		
MARK	ROOM NAME	WIDTH	HEIGHT	TYPE	MATERIAL	DOOR FINISH		TYPE	MATERIAL	FRAME FINISH	RATING	HDWR	COMMENTS
102A	FAB LAB	3' - 0"	7' - 0"	B	SCWD	FAC		B	HM	PS		2	
102B	FAB LAB	5' - 0"	7' - 0"	B1	SCWD	FAC		B	HM	PS		3	
102S	HVAC	2' - 8"	7' - 0"	A	HM	PS		A	HM	PS		4	
103A	CLASSROOM	3' - 0"	7' - 0"	B	SCWD	FAC		B	HM	PS		2	
103S	HVAC	2' - 8"	7' - 0"	A	HM	PS		A	HM	PS		4	
105A	WOOD SHOP	6' - 0"	7' - 0"	B1	SCWD	FAC		D	HM	PS		1	
106A	TEACHER STORAGE	3' - 0"	7' - 0"	C	HM	PS		A	HM	PS		8	
107A	TEACHER STORAGE	3' - 0"	7' - 0"	C	HM	PS		A	HM	PS		8	
109A	AUTO SHOP	6' - 0"	7' - 0"	B1	SCWD	FAC		C	HM	PS		1	
110A	TEACHER STORAGE	3' - 0"	7' - 0"	C	HM	PS		A	HM	PS		8	
111A	STORAGE	6' - 0"	7' - 0"	A1	HM	PS		A	HM	PS		5	
113A	METAL SHOP	6' - 0"	7' - 0"	B1	SCWD	FAC		C	HM	PS		1	
115A	COMPUTER LAB	3' - 0"	7' - 0"	B	SCWD	FAC		B	HM	PS		2	
115S	HVAC	3' - 0"	7' - 0"	A	HM	PS		A	HM	PS		4	
116A	RR	3' - 0"	7' - 0"	A	FRP	FAC		A	HM	PS		6	
116B	RR	2' - 6"	7' - 0"	A	FRP	FAC		A	HM	PS		6	
116C	RR	2' - 6"	7' - 0"	A	FRP	FAC		A	HM	PS		6	
116D	RR	2' - 6"	7' - 0"	A	FRP	FAC		A	HM	PS		6	
116F	RR	2' - 6"	7' - 0"	A	FRP	FAC		A	HM	PS		6	
116G	RR	2' - 6"	7' - 0"	A	FRP	FAC		A	HM	PS		6	
118A	STORAGE	3' - 6"	7' - 0"	A	HM	PS		A	HM	PS		4	
121A	ELECTRICAL	3' - 0"	7' - 0"	A	HM	PS		A	HM	PS		4	
122A	IDF	3' - 0"	7' - 0"	A	HM	PS		A	HM	PS		4	
123A	JANITORIAL	3' - 0"	7' - 0"	A	HM	PS		A	HM	PS		4	
124A	STORAGE	3' - 0"	7' - 0"	A	HM	PS		A	HM	PS		4	
124B	STORAGE	6' - 0"	7' - 0"	A1	HM	PS		A	HM	PS		5	

GATE SCHEDULE

ID	GATE			
MARK	SIZE		SWING	HDWR
	WIDTH	HEIGHT	TYPE	
G001	4' - 0"	6' - 0"	SINGLE	7
G002	8' - 0"	6' - 0"	DOUBLE	7
G003	8' - 0"	6' - 0"	DOUBLE	7
G004	4' - 0"	6' - 0"	SINGLE	7
G005	12' - 0"	6' - 0"	DOUBLE	7

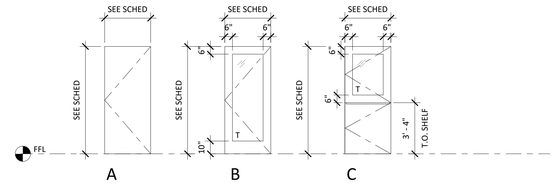
GENERAL NOTES

1. COORDINATE FRAME SIZES WITH WALL THICKNESS AT NEW AND EXISTING CONDITIONS

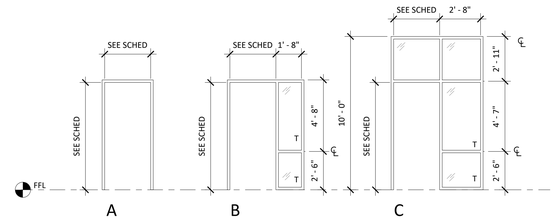
2. SEE INTERIOR ELEVATIONS FOR PS INFORMATION

DOOR ABBREVIATIONS

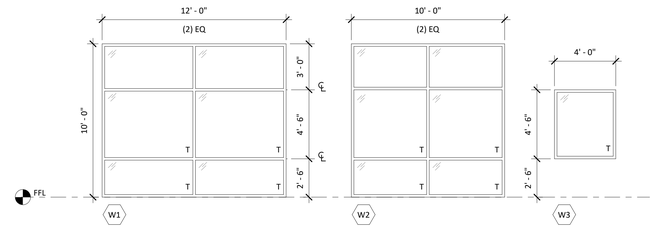
AL	ALUMINUM
FAC	FACTORY FINISH
FRP	FIBERGLASS PANEL
HM	HOLLOW METAL
MFR	MANUFACTURER
MTL	METAL
PFM	PREFINISHED METAL FRAME
PS	PAINT SYSTEM
SC	SOLID CORE
SGF	SOLID GROUT FRAME
SMOKE	S LABEL (SMOKE LABEL)
WD	WOOD



DOOR TYPES A1 PAIR B1 PAIR



FRAME TYPES



OPENING TYPES

COLOR SCHEDULE

FLOOR FINISHES

TAG	ITEM	MANUFACTURER	COLOR/MODEL	NOTES
WB-1	RESIL WALL BASE			SEAL TO WALL AT RESTROOMS
CONC-1	POLISHED CONCRETE			
CONC-2	SEALED CONCRETE			
WOM	WALK-OFF MAT			

WALL FINISHES

TAG	ITEM	MANUFACTURER	COLOR/MODEL	NOTES
PC-1	FIELD PAINT COLOR	SHERWIN WILLIAMS	WHITE	MATCH FIELD COLOR
PC-2	ACCENT PAINT COLOR	SHERWIN WILLIAMS	LIGHT GRAY	MATCH FIELD COLOR
PC-3	ACCENT PAINT COLOR	SHERWIN WILLIAMS	RED	MATCH FIELD COLOR
PC-4	ACCENT PAINT COLOR	SHERWIN WILLIAMS	DARK GRAY	MATCH FIELD COLOR
WT-1	CERAMIC WALL TILE	DALTILE	BISCUIT MATTE K775	USE GROUT LATICRETE 85-ALMOND
WT-2	CERAMIC WALL TILE	DALTILE	DESERT GRAY MATTE X714	USE GROUT LATICRETE 88-SILVER SHADOW
FRP-1	FIBERGLASS REINFORCED PLASTIC		WHITE	
MTL-1	SHEET STEEL			
WP-1	ACOUSTIC WALL PANEL	ARMSTRONG	TECTUM	
WP-2	ORIENTED STRAND BOARD		WHITE	

CASEWORK FINISHES

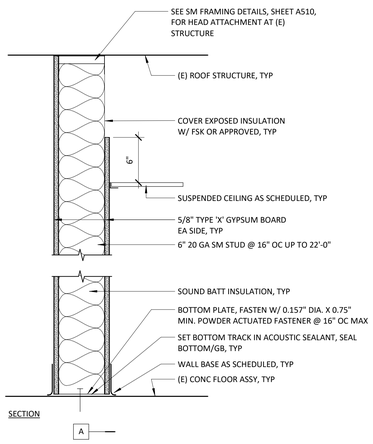
TAG	ITEM	MANUFACTURER	COLOR/MODEL	NOTES
PL-1	PLASTIC LAMINATE	WILSONART	4879-38 STEEL MESH	AT COUNTERTOPS
PL-2	PLASTIC LAMINATE	WILSONART	D90-60	AT CABINETS

CEILING FINISHES

TAG	ITEM	MANUFACTURER	COLOR/MODEL	NOTES
ACT-1	ACOUSTIC CEILING	ARMSTRONG	15/16" EXPOSED TEE GRID, ULTIMA TILE OR APPROVED, WHITE	
GB	SUSPENDED GYPSUM BOARD CEILING	ARMSTRONG	FRAMEALL DRYWALL GRID OR EQ W 5/8" TYPE 'X' GB, PS FINISH, WHITE	

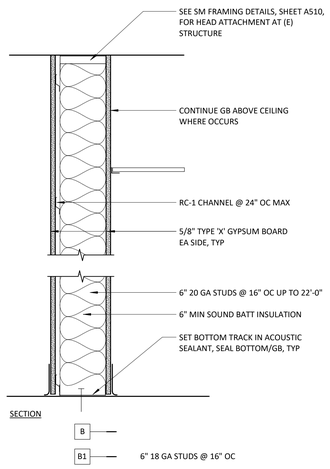
LIGHT FIXTURE SCHEDULE FOR REF ONLY, BY OTHERS

MARK	FIXTURE
L-01	2'X4' LED VOLUMETRIC FIXTURE
L-02	RECESSED LED DOWNLIGHT
L-03	DECORATIVE WALL MOUNT VANITY LED SCONCE
L-04	SUSPENDED LED LINEAR, 8'L
L-05	SURFACE-MOUNT LED UTILITY LINEAR, 4'L
L-06	LED EXIT SIGN
L-07	SUSPENDED LED HIGH BAY
L-08	WALL MOUNT EXTERIOR LED SCONCE
L-09	SURFACE MOUNT LED UTILITY WRAPAROUND, 4'
L-10	WALL MOUNT EXTERIOR LED WALLPACK
L-11	RECESSED LINEAR LED WALL WASH
L-12	WALL MOUNT LED UTILITY WRAPAROUND, 2'



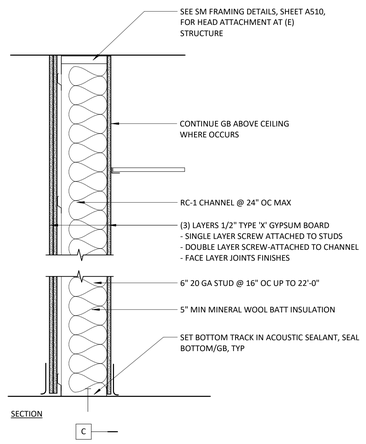
A

FIRE RATING: 0 HR
SOUND RATING: N/A
NOTES: TYPICAL INTERIOR PARTITION



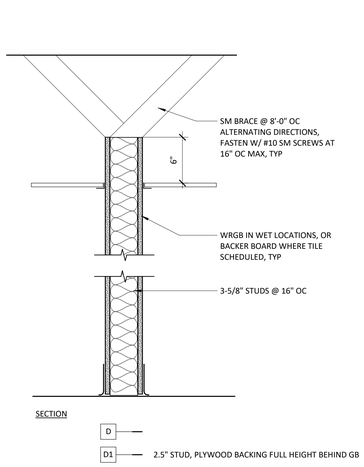
B

FIRE RATING: 0 HR
SOUND RATING: STC 54 (RAL-TL-83-216)
NOTES: ACOUSTIC PARTITION



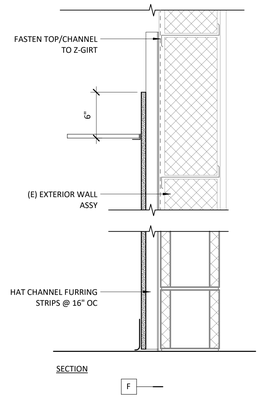
C

FIRE RATING: 0 HR
SOUND RATING: STC 60 (RAL-TL-87-140)
NOTES: ACOUSTIC ENHANCED PARTITION



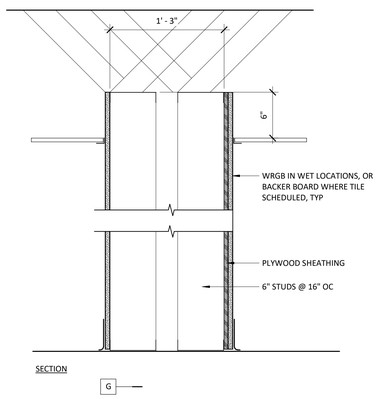
D

FIRE RATING: 0 HR
SOUND RATING: NONE
NOTES:



F

FIRE RATING: 0 HR
SOUND RATING: NONE
NOTES:



G

FIRE RATING: 0 HR
SOUND RATING: NONE
NOTES:

1 INTERIOR PARTITION TYPES
1 1/2" = 1'-0"

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REVISIONS

CRESWELL HIGH SCHOOL CTE BUILDING
INTERIOR IMPROVEMENT
33390 NIBLOCK LN, CRESWELL OR 97426
CONSTRUCTION DOCUMENTS

JOB NO: 26767
ISSUE DATE: 18 NOV 2026

ASSEMBLIES & SCHEDULES

A600

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PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE	DESCRIPTION	CONNECTION				
			WASTE	VENT	HW	CW	NOTES
WC-1	WATER CLOSET	VITREOUS CHINA WALL HUNG W/ AUTOMATIC FLUSH VALVE (AMERICAN STANDARD, OR EQUIVALENT).	3"	2"	-	1/2"	ADA COMPLIANT
L-1	LAVATORY	VITREOUS CHINA WALL HUNG W/ DECK MOUNTED ELECTRONIC FAUCET W/ TOUCH FREE SENSOR (AMERICAN STANDARD OR EQUIVALENT). PROVIDE BRASSCRAFT STOPS & SUPPLIES, TRUBRO WASTE AND SUPPLY PIPE COVERS.	1-1/2"	1-1/2"	1/2"	1/2"	ADA COMPLIANT
S-1	ONE STATION A.D.A. FLOOR MOUNTED SINK	37"x16"x5" DEEP SINGLE BOWL - 16 GA. TYPE "304" SS SHOP SINK W/ GOOSENECK FAUCET, WRIST BLADE HANDLES & TUBULAR SS LEGS W/ FLANGED FEET (ADVANCE TABCO MODEL # FC-FM-1-ADA-F) . PROVIDE BRASSCRAFT STOPS & SUPPLIES, TRUBRO WASTE AND SUPPLY PIPE COVERS.	1-1/2"	1-1/2"	1/2"	1/2"	ADA COMPLIANT
S-2	FIVE STATION A.D.A. FLOOR MOUNTED SINK	97"x16"x5" DEEP SINGLE BOWL - 14 GA. TYPE "304" SS SHOP SINK W/ GOOSENECK FAUCETS, WRIST BLADE HANDLES & TUBULAR SS LEGS W/ FLANGED FEET (ADVANCE TABCO MODEL # FS-FM-100ADA-F) . PROVIDE BRASSCRAFT STOPS & SUPPLIES, TRUBRO WASTE AND SUPPLY PIPE COVERS.	(3) @ 1-1/2"	1-1/2"	(5) @ 1/2"	(5) @ 1/2"	ADA COMPLIANT
DF-1	DRINKING FOUNTAIN	BI-LEVEL SS DRINKING FOUNTAIN & BOTTLE FILLER (ELKAY ezH2O #LZSTL8WSSK OR EQUIVALENT)	1-1/2"	1-1/2"	-	1/2"	ADA COMPLIANT
BF-1	BOTTLE FILL STATION	IN-WALL BOTTLE FILLER STATION (ELKAY ezH2O #LZWS8K OR EQUIVALENT)	1-1/2"	1-1/2"	-	1/2"	ADA COMPLIANT
ES-1	EMERGENCY SHOWER	SS HORIZONTALLY MOUNTED EMERGENCY SHOWER	-	-	-	1/2"	
MS-1	MOP SINK	30"x24" SS FLANGED MOP SINK (MUSTEE OR EQUIVALENT) W/ FAUCET, HOSE KIT, MOP HANGER, BUMPER GUARD, WALL GUARDS AND DRAIN KIT.	2"	1-1/2"	1/2"	1/2"	
FS-1	FLOOR SINK	8" FLOOR SINK W/ SPLIT HALF GRATE (CECO 906 OR EQUIVALENT).	2"	1-1/2"	-	-	
FD-1	FLOOR DRAIN	FLOOR DRAIN W/ NICKEL/BRONZE STRAINER (SIOUX CHIEF 833-2ANR OR EQUIVALENT).	2"	1-1/2"	-	-	PROVIDE TRAP PRIMER
OI-1	OIL INTERCEPTOR	FABRICATED STEEL OIL SEPARATOR W/ INTEGRAL STORAGE TANK: ACID RESISTANT COATED INTERIOR, SEDIMENT BUCKET, VENT CONNECTIONS, GASKETED NON-SKID COVER, FLOW CONTROL FITTING (ZURN #Z1186-ST OR EQUIVALENT).	3"	1-1/2"	-	-	
TD-1	TRENCH DRAIN	LINEAR TRENCH DRAIN W/ TRAFFIC RATED GRATE.	2"	-	-	-	
HB-1	HOSE BIB	WOODFORD MODEL B65 ANTI SIPHON (OR EQUIVALENT).AUTOMATIC DRAINING, FREEZELESS BOX TYPE WALL HYDRANT W/ SINGLE CHECK VACUUM BREAKER, LOCKING COVER & TEE KEY (MOUNT IN WALL HYDRANTLOCATION SHOWN ON PLANS - VERIFY HEIGHT)	-	-	-	1/2"	
TP-1	TRAP PRIMER	PRECISION PLUMBING PRODUCTS MODEL #PO-500 OR EQUIVALENT. MAY BE PROVIDED WITH DISTRIBUTION UNIT MODEL DU-U TO PRIME UP TO FOUR FLOOR DRAINS. INSTALL PER MAUFACTURERS INSTRUCTIONS.	-	-	-	1/2"	
FCO	FLOOR CLEANOUT	SIUOX CHIEF 834 SERIES W/ ROUND NICKEL/BRONZE TOP (SIZE PER LINE SERVED).	-	-	-	-	
COTG	CLEANOUT TO GRADE	BROOKS 1RT BOX W/ CAST IRON CLEANOUT LID (SIZE PER LINE SERVED).	-	-	-	-	

PLUMBING GENERAL NOTES

1. PLUMBING INSTALLATION SHALL COMPLY WITH CURRENT APPLICABLE STATE OF OREGON, COUNTY, AND CITY BUILDING CODES.
2. PLUMBING CONTRACTOR SHALL OBTAIN AND PAY FOR PLUMBING AND OTHER PERMITS ASSOCIATED WITH THE SCOPE OF WORK.
3. COORDINATE PLUMBING INSTALLATION WITH MECHANICAL, ELECTRICAL, AND FIRE PROTECTION CONTRACTORS PRIOR TO CONSTRUCTION. PLUMBING CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING.
4. EQUIPMENT AND FIXTURE LOCATIONS TO BE VERIFIED WITH OWNER PRIOR TO ANY WORK BEING DONE.
5. PLUMBING CONTRACTOR IS RESPONSIBLE FOR TESTING AND INSPECTIONS REQUIRED. ANY INSTALLATION DEFICIENCIES ARE TO BE CORRECTED PRIOR TO COVER.
6. PROVIDE FIRE STOPPING FOR PENETRATIONS THROUGH RATED CONSTRUCTION PER OPSC CHAPTER 14 AND OSSC SECTION 714. PROVIDE SUBMITTAL OF FIRE STOPPING MATERIALS AND METHODS AS REQUIRED.
7. COORDINATE PLUMBING INSTALLATION WITH SITE UTILITIES INDICATED ON THE SITE PLAN AND CIVIL DRAWINGS. COORDINATE WITH GENERAL CONTRACTOR FOR REQUIRED CONNECTION POINTS AND PIPING MATERIALS TO BE CONNECTED TO SITE UTILITIES – REFER TO CIVIL AND IRRIGATION DRAWINGS.
8. VERIFY WITH ARCHITECT THE TYPE OF MATERIAL FOR VERTICAL WASTE RISERS FOR SOUND ATTENUATION.
9. PROVIDE OFFSETS AND ASSOCIATED FITTINGS NOT INDICATED ON DRAWINGS AS REQUIRED.
10. PROVIDE CLEAN–OUTS AS REQUIRED PER OPSC SECTION 707.0. WALL CLEANOUTS WITH STAINLESS STEEL ESCUTCHEON PLATE AT BATHROOMS, WHITE ELSEWHERE.
11. PROVIDE WATER HAMMER ARRESTERS ON WATER SUPPLY SYSTEMS AT QUICK–ACTING VALVES AND AT END OF PIPING RUNS PER OPSC 609.11.
12. INSULATE CONDENSATE DRAINS FOR HVAC EQUIPMENT LOCATED INSIDE BUILDING ENVELOPE. DRAIN TO NEAREST APPROVED RECEPTOR OR WHERE INDICATED ON DRAWINGS.
13. INSULATE HOT WATER AND HOT WATER RE–CIRCULATING PIPING IN ACCORDANCE WITH OEESC 504.5.
14. SLOPE HORIZONTAL WASTE PIPING AT 2% MINIMUM.
15. USE OF PEX PIPING LIMITED TO RUN–OUTS AND DROPS TO FIXTURES.
16. HOT AND COLD WATER RUN–OUTS AND DROPS TO FIXTURES 1/2" UNLESS OTHERWISE NOTED ON DRAWINGS.
17. VERIFY HEIGHT OF EXTERIOR HOSE BIBS (WALL HYDRANTS) WITH ARCHITECT.
18. SEISMICALLY BRACE WASTE, VENT, WATER, AND GAS PIPING PER SMACNA STANDARDS, CURRENT EDITION, AS APPLICABLE.
19. VERIFY WITH CITY PLAN REVIEW AND PLUMBING INSPECTORS THE TYPE OF DOMESTIC WATER BACK FLOW PROTECTION REQUIRED FOR SITE WATER SERVICE. THIS INFORMATION IS TO BE PROVIDED TO THE GENERAL CONTRACTOR FOR ISSUE TO SITE UTILITY CONTRACTOR.
20. PROVIDE SHUT–OFF VALVES AT BRANCH DROPS TO FIXTURES (CW & HWS).

PLUMBING SYSTEMS DESIGN SCOPE SUMMARY

GENERAL

BUILDING PLUMBING UTILITIES (COLD WATER, WASTE, VENT, AND GAS SERVICE) ARE PROVIDED FROM EXTENDED SITE UTILITIES AS INDICATED ON THE CIVIL DRAWINGS.

COLD WATER IS FROM A NEW WATER METER WITH 2" SUPPLY SERVICE LOCATED ON THE SOUTH EXTERIOR OF THE BUILDING. THE SERVICE IS EXTENDED TO A CODE COMPLIANT BACKFLOW PREVENTION DEVICE LOCATED IN THE FIRE RISER ROOM FOR DISTRIBUTION TO THE BUILDING.

GAS SERVICE IS FROM A NEW GAS METER LOCATED ON THE SOUTH EXTERIOR BUILDING EXPOSURE WITH AN ADEQUATELY SIZED GAS SERVICE LINE RUN TO SERVE REQUIRED GAS FIRED EQUIPMENT IN THE BUILDING, INCLUDING THE GAS FIRED PACKAGED AIR CONDITIONING UNITS INSTALLED UNDER DIVISION 23.

BUILDING WASTE/SEWER SERVICES ARE PROVIDED BY NEW 4" & 3" SEWER LINES RUN BELOW THE FLOOR LEVEL AND EXITING THE BUILDING AT THE BUILDING EAST SIDE. NEW SEWER PIPING IS TO BE CONNECTED TO THE EXITING SITE SEWER LOCATED NEAR THE SE CORNER OF THE BUILDING – REFER TO CIVIL SITE UTILITIES DRAWINGS. A NEW OIL SEPARATOR/INTERCEPTOR SIZED FOR AUTO SHOP 109 REQUIREMENTS IS TO BE LOCATED AS SHOWN ON THE FLOOR PLAN, BELOW GRADE WITH CODE REQUIRED ACCESS AND CLEANOUTS, PIPED TO THE NEW SEWER MAIN RUN BELOW THE FLOOR SLAB IN THE NEW BUILDING.

PLUMBING FIXTURES

PLUMBING FIXTURES AND EQUIPMENT (WATER CLOSETS, LAVATORIES, SINKS, FLOOR DRAINS, WATER HEATERS ETC.) ARE PROVIDED BY THE PLUMBING CONTRACTOR AS SCHEDULED, FOR INSTALLATION UNDER DIVISION 22 OF THE CONTRACT DOCUMENTS.

LEGEND

MARK	DESCRIPTION
– – – –	WASTE PIPING
— — — —	WASTE VENT PIPING
— - — - —	COLD WATER PIPING
———————	HOT WATER PIPING
I.E.	INVERT ELEVATION
FCO	FLOOR CLEAN–OUT
WCO	WALL CLEAN–OUT
COTG	CLEAN–OUT TO GRADE
VTR	VENT THRU ROOF
DN.	DOWN
RPB	REDUCED PRESSURE BACKFLOW ASSEMBLY
WSFU	WATER SUPPLY FIXTURE UNITS
DFU	DRAINAGE FIXTURE UNITS
GWDFU	GREASE WASTE DRAINAGE FIXTURE UNITS
CW	COLD WATER
HW	HOT WATER
CD	CONDENSATE DRAIN
W.	WASTE
SS	SANITARY SEWER
V.	VENT
WC	WATER CLOSET
L	LAVATORY
FD	FLOOR DRAIN
FS	FLOOR SINK
MS	MOP SINK
S	SINK
T.D.L.	TOTAL DEVELOPED LENGTH
G.	GAS

EQUIPMENT SCHEDULE

COMPACT STORAGE TYPE ELECTRIC WATER HEATER

WH-1 PUBLIC RESTROOMS 116 / JANITORIAL 119

NOMINAL CAPACITY: 19.9 GALLONS
STORAGE VOLUME: 18 GALLONS

ELECTRICAL: 120V., 1 PH, 60 HZ
2500 WATT HEATING ELEMENT

DIMENSIONS: 31–5/8" H x 16" DIA.

OPER. WT.: 210 LBS. (STORAGE TANK FULL)

TOP MOUNTED PLUMBING AND ELECTRICAL CONNECTIONS. LISTED PER UL 174 STANDARDS, MEETS CURRENT ASHRAE 90.1–2022 REQUIREMENTS

BASIS OF DESIGN: A.O. SMITH EJCT–20, OR EQUIVALENT

POINT–OF–USE WALL MOUNTED UNDER COUNTER ELECTRIC WATER HEATER

WH-2 SHOP 1, 2 & 3 SINKS

NOMINAL CAPACITY: 4 GALLONS
STORAGE VOLUME: 3.8 GALLONS

ELECTRICAL: 120V., 1 PH, 60 HZ
1440 WATT HEATING ELEMENT

DIMENSIONS: 19–1/4"(H) X 11–3/4"(W) x 10–3/8"(D)

OPER. WT.: 55 LBS. (STORAGE TANK FULL)

SIDE MOUNTED PLUMBING AND ELECTRICAL CONNECTIONS. LISTED PER UL 174 STANDARDS, MEETS CURRENT ASHRAE 90.1–2022 REQUIREMENTS

BASIS OF DESIGN: A.O. SMITH EPU–4, OR EQUIVALENT

SHEET INDEX

P001	PLUMBING LEGEND, NOTES & SCHEDULES
P100	PLUMBING OVERALL BUILDING PLAN
P120	PLUMBING FLOOR PLAN

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REVISIONS

CRESWELL HIGH SCHOOL CTE BUILDING INTERIOR IMPROVEMENT

33390 NIBLOCK LN, CRESWELL, OR 97426

CONSTRUCTION DOCUMENTS

JOB NO: 26767

ISSUE DATE: 11/18/26

PLUMBING LEGEND, NOTES & SCHEDULES

P001

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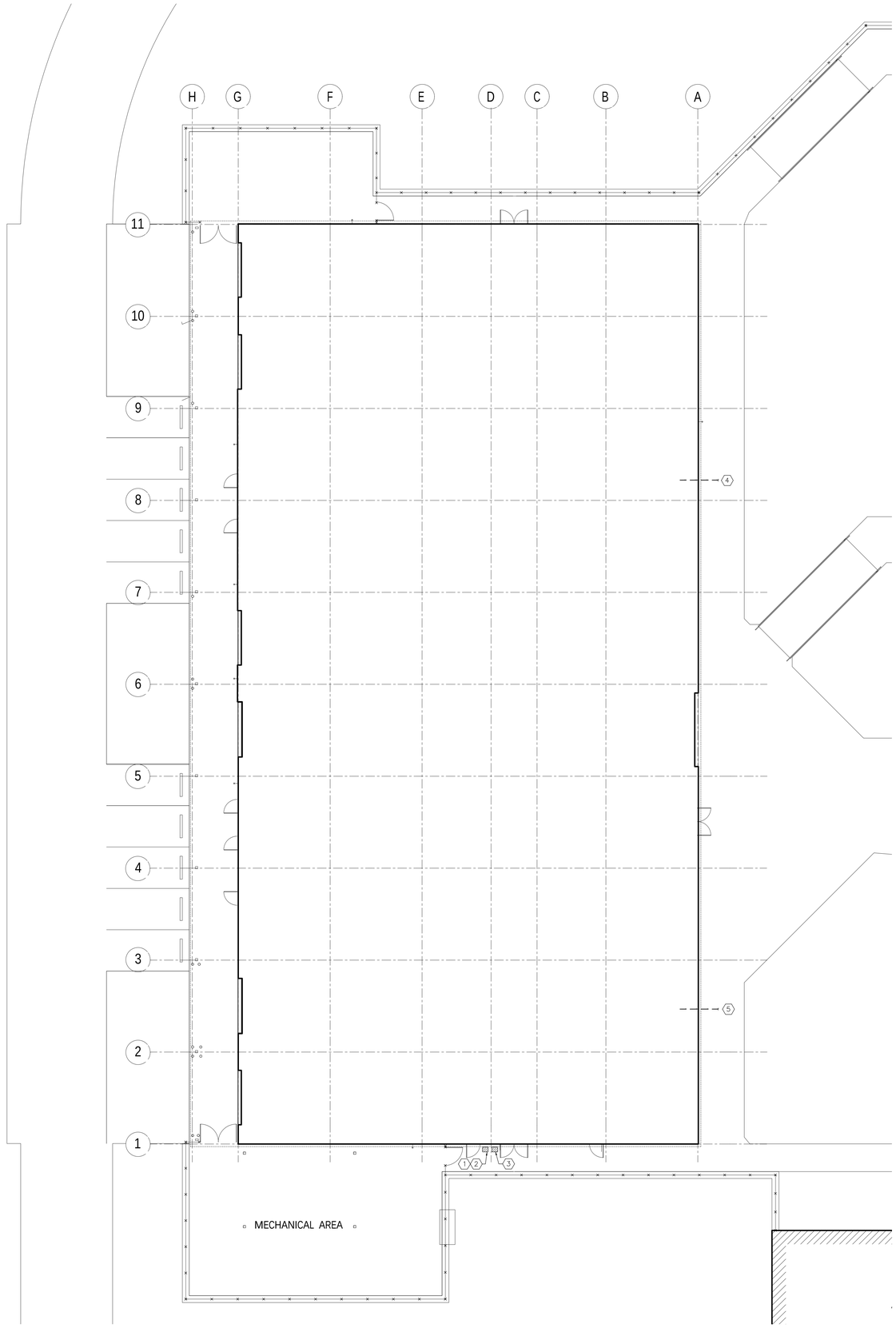

1 P100 PLUMBING OVERALL BUILDING PLAN
SCALE: 3/32" = 1'-0"

NORTH

PLAN NOTES

1. GAS METER LOCATION BY LOCAL UTILITY TO BE CONNECTED TO (E) SITE GAS SERVICE – REFER TO CIVIL SITE UTILITIES PLAN.
2. CONNECTED GAS LOAD – SPACE HEATING EQUIPMENT ONLY: 450 CFH (POSSIBLE ADDITIONAL LOADS TO BE VERIFIED).
3. WATER METER LOCATION BY LOCAL UTILITY TO BE CONNECTED TO (E) SITE WATER SERVICE – REFER TO CIVIL SITE UTILITIES PLAN.
4. LOCATION OF 4" SANITARY SEWER OUTFALL, CONNECT TO 4" SEWER 5'–0" (+/–) OUTSIDE BUILDING – REFER TO CIVIL SITE UTILITIES PLAN.
5. LOCATION OF 3" SANITARY SEWER OUTFALL, CONNECT TO 3" SEWER 5'–0" (+/–) OUTSIDE BUILDING – REFER TO CIVIL SITE UTILITIES PLAN.

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PLUMBING OVERALL BUILDING PLAN

P100

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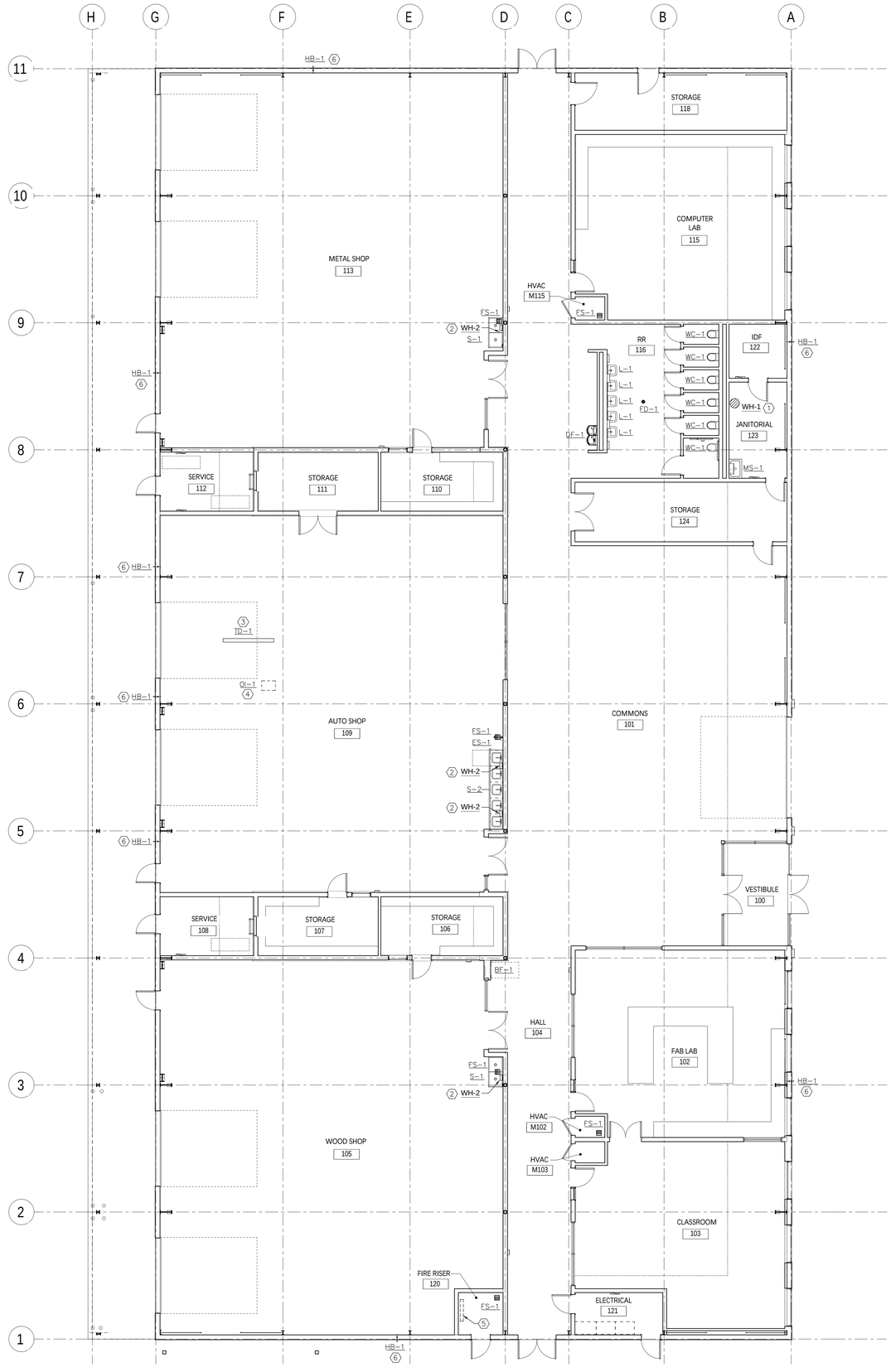

1 P120 PLUMBING FLOOR PLAN
SCALE: 1/8" = 1'-0"

NORTH

PLAN NOTES

1. STORAGE TYPE ELECTRIC WATER HEATER – SEE EQUIPMENT SCHEDULE SHEET P001.
2. POINT–OF–USE UNDERCOUNTER ELECTRIC WATER HEATER – SEE EQUIPMENT SCHEDULE SHEET P001.
3. TRENCH DRAIN W/ TRAFFIC RATED GRATE – COORDINATE LOCATION W/ SHOP EQUIPMENT – SEE EQUIPMENT SCHEDULE SHEET P001.
4. OIL SEPARATOR/INTERCEPTOR MOUNTED BELOW SLAB – COORDINATE LOCATION WITH PROPOSED SHOP EQUIPMENT TO MAINTAIN REQUIRED ACCESS.
5. REDUCED PRESSURE BACKFLOW DEVICE PER CODE AND LOCAL WATER UTILITY REQUIREMENTS.
6. FREEZELESS WALL HYDRANT MOUNTED IN RECESSED LOCKING BOX – VERIFY LOCATION & MOUNTING HEIGHT W/ ARCHITECT.

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PLUMBING FLOOR PLAN

P120

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EQUIPMENT SCHEDULE

NOTE:

EQUIPMENT LISTED IS SHOWN FOR GENERAL REFERENCE ONLY. SPECIFIC EQUIPMENT TYPES, CAPACITIES, DIMENSIONS, WEIGHTS, AND ELECTRICAL CHARACTERISTICS ARE TO BE DETERMINED WHEN THE DISTRICT PROVIDES DETAILED REQUIREMENTS FOR THE FUNCTIONS TO BE PROVIDED IN EACH SHOP CLASSROOM AREA.

GRADE MOUNTED PACKAGED GAS/ELECTRIC AIR CONDITIONING UNIT

AC-105
AC-109
AC-113

NOMINAL CAPACITY:

COOLING: 119,000 BTUH TOTAL (10-TON)
HEATING: 150,000 BTUH INPUT / 121,500 BTUH OUTPUT

NOMINAL SUPPLY AIR: 4,000 CFM

EFFICIENCIES:

COOLING: IEER: 14.6
HEATING: 81% (STEADY STATE)

ELECTRICAL:

208/230V., 3 PH, 60 hZ
MCA: 62
MAX FUSE: 80A

OPER. WT.: 1,100 LBS.

PROVIDE W/ DUCT MOUNTED HORIZONTAL ECONOMIZER ACCESSORY W/ POWER EXHAUST & FIELD FABRICATED LEVEL MOUNTING RAILS. UNIT MOUNTED ON LEVEL CONCRETE EQUIPMENT PAD BT G.C.

BASIS OF DESIGN: TRANE MODEL # YSK120 (OR EQUIVALENT BY CARRIER & YORK)

SPLIT SYSTEM DUCTED HEAT PUMP UNIT

HP-101(A) / AH-101(A)
HP-101(B) / AH-101(B)
HP-102 / AH-102
HP-103 / AH-103
HP-115 / AH-115

NOMINAL CAPACITY:

COOLING: 37,000 BTUH TOTAL (3-TON)
HEATING: 40,000 BTUH TOTAL @ 47 DEG. F. AMB.
23,600 BTUH TOTAL @ 17 DEG. F. AMB.

NOMINAL SUPPLY AIR: 1,125 CFM

REFRIGERANT: R454B

EFFICIENCIES:

COOLING: SEER2: 19.5
HEATING: HSPF2.: 9.2

ELECTRICAL: 208/230V., 1 PH, 60 HZ

OUTDOOR UNIT: MCA: 34
BREAKER SIZE: 35A
MOCP: 56A

OPER. WT.: OUTDOOR UNIT: 230 LBS.
INDOOR UNIT: 175 LBS

UPFLOW SUPPLY AIR CONFIGURATION, W/ BUILT-IN REFRIGERANT LEAK SENSOR. INCLUDES ECM 3-SPEED INDOOR FAN MOTOR, PROVIDE W/ ECONOMIZER ACCESSORY

BASIS OF DESIGN: MITSUBISHI MODEL # PUZ-AK36NL (OUTDOOR UNIT)
MODEL # PVA-AA36NL (INDOOR UNIT),
OR EQUIVALENT.

SPLIT SYSTEM DUCTLESS COOLING ONLY UNIT

AC-122 / FC-122

NOMINAL CAPACITY:

COOLING: 14,000 BTUH TOTAL (1.25-TON)

NOMINAL SUPPLY AIR: 400 CFM @ MEDIUM SPEED

REFRIGERANT: R454B

EFFICIENCY:

COOLING: SEER2: 22.2

ELECTRICAL: 208/230V., 1 PH, 60 HZ

OUTDOOR UNIT: MCA: 16
BREAKER SIZE: 35A
MOCP: 28A

OPER. WT.: OUTDOOR UNIT: 85 LBS.
INDOOR UNIT: 25 LBS

WALL MOUNTED DUCTLESS INDOOR UNIT, PROVIDE CONDENSATE PUMP INCLUDES MULTI-SPEED INDOOR FAN MOTOR

BASIS OF DESIGN: MITSUBISHI MODEL # MUY-GX15NL (OUTDOOR UNIT)
MODEL # MSY-GX15NL (INDOOR UNIT),
OR EQUIVALENT.

EXHAUST FANS

EF-1
EF-2

CABINET WALL MOUNTED

190 CFM @ 0.25" S.P.

ELECTRICAL: 120V., 1 PH, 60 HZ
AMPS: 2.2
WATTS: 172

OPER. WT.: 15 LBS.

EF-1:

INTERLOCK W/ LINE VOLTAGE T-STAT SET TO MAKE @ 85 DEG. F. & BREAK @ 70 DEG. F.

EF-2:

PROVIDE WALL MOUNTED ON-OFF SWITCH & ADJUSTABLE TIME DELAY RELAY.

BASIS OF DESIGN: GREENHECK MODEL # SP-B200, OR EQUIVALENT

EF-3

CABINET WALL MOUNTED

150 CFM @ 0.25" S.P.

ELECTRICAL: 120V., 1 PH, 60 HZ
AMPS: 1.7
WATTS: 128

OPER. WT.: 15 LBS.

INTERLOCK W/ LINE VOLTAGE T-STAT SET TO MAKE @ 85 DEG. F. & BREAK @ 70 DEG. F.

BASIS OF DESIGN: GREENHECK MODEL # SP-B150, OR EQUIVALENT

EF-4

INLINE WALL MOUNTED

480 CFM @ 0.375" S.P.

ELECTRICAL: 120V., 1 PH, 60 HZ
AMPS: 2.4
WATTS: 160

OPER. WT.: 40 LBS.

PROVIDE DIGITAL TIME SWITCH PROGRAMMED TO OPERATE DURING OCCUPIED HOURS.

BASIS OF DESIGN: GREENHECK MODEL # CSP-A510-VG, OR EQUIVALENT

DIRECT DRIVE UTILITY SET - CARBON MONOXIDE EXHAUST

EF-109

AUTO SHOP 109 CARBON MONOXIDE EXHAUST

1750 CFM @ 4.0" S.P.

ELECTRICAL: 208V., 3 PH, 60 HZ
5 H.P. FAN MOTOR

OPER. WT.: 180 LBS.

PROVIDE OVERHEAD CARBON MONOXIDE EXHAUST SYSTEM FOR FOUR (6) 2-POST VEHICLE LIFT STATIONS INCLUDING HOSE REELS, BALANCER/RETRACTORS, ARTICULATED ARMS W/ DROP DOWN SINGLE VEHICLE EXHAUST PIPE ADAPTERS, AND FACTORY CONTROLS FOR A COMPLETE AND OPERATIONAL SYSTEM.

BASIS OF DESIGN: FUME-A-VENT W/ ACCESSORIES INDICATED.

MAKEUP AIR UNIT

MUA-109

MODULAR INDIRECT FIRED GAS HEAT/EVAPORATIVE COOL MAKEUP AIR UNIT

1,575 CFM @ 2.0: S.P.

ELECTRICAL: 208V., 3 PH, 60 HZ
2 H.P. FAN MOTOR

OPER. WT.: 900 LBS.

PROVIDE EVAPORATIVE COOLING SECTION, GAS-FIRED INDIRECT HEATING SECTION, INTAKE HOOD W/ BIRDSCREEN, V-BANK FILTER SECTION.

BASIS OF DESIGN: GREENHECK MODEL # IG-H10 W/ ACCESSORIES INDICATED, OR EQUIVALENT.

EQUIPMENT SCHEDULE (FUTURE)

NOTE:

EQUIPMENT LISTED IS SHOWN FOR GENERAL REFERENCE ONLY. SPECIFIC EQUIPMENT TYPES, CAPACITIES, DIMENSIONS, WEIGHTS, AND ELECTRICAL CHARACTERISTICS ARE TO BE DETERMINED WHEN THE DISTRICT PROVIDES DETAILED REQUIREMENTS FOR THE FUNCTIONS TO BE PROVIDED IN EACH SHOP CLASSROOM AREA.

SHOP CLASSROOMS INDUSTRIAL VENTILATION EQUIPMENT

EXHAUST FANS

EF-105

WOOD SHOP 105 DUST COLLECTOR

7,000 CFM @ 10.0" S.P.

ELECTRICAL: 208V., 3 PH, 60 HZ
20 H.P. FAN MOTOR

OPER. WT.: 2,200 LBS.

COMPLETE DUST COLLECTION PACKAGE INCLUDES FAN, FAN MOTOR, STARTER, BAG FILTERS, COLLECTORS.

WELDING STATION EXHAUST SYSTEMS

EF-113(A)

METAL SHOP 113 SOURCE CAPTURE EXHAUST

1,400 CFM @ 3.0: S.P.

ELECTRICAL: 208V., 3 PH, 60 HZ
2 H.P. FAN MOTOR

OPER. WT.: 900 LBS.

SOURCE CAPTURE SYSTEM W/ SPRING LOADED ARTICULATING ARMS W/ MOVABLE CAPTURE HOOD. PROVIDE FOR FIVE (5) WELDING STATIONS ALONG SOUTH SHOP WALL.

EF-113(B)

METAL SHOP 113 SLOTTED HOODS

4,200 CFM @ 5.0: S.P.

ELECTRICAL: 208V., 3 PH, 60 HZ
10 H.P. FAN MOTOR

OPER. WT.: 1,500 LBS.

SLOTTED HOOD CONFIGURATION AT WELDING BOOTH DRAWS FUMES DOWN OR AWAY FROM WELDER HORIZONTALLY ACROSS WORK AREA. PROVIDE FOR FOUR (4) WELDING STATIONS ALONG EAST SHOP WALL.

MAKEUP AIR UNITS

MUA-105

MODULAR INDIRECT FIRED GAS HEAT/EVAPORATIVE COOL MAKEUP AIR UNIT

5,600 CFM @ 3.0: S.P.

ELECTRICAL: 208V., 3 PH, 60 HZ
10 H.P. FAN MOTOR

OPER. WT.: 1,300 LBS.

PROVIDE EVAPORATIVE COOLING SECTION, GAS-FIRED INDIRECT HEATING SECTION, INTAKE HOOD W/ BIRDSCREEN, V-BANK FILTER SECTION.

BASIS OF DESIGN: GREENHECK MODEL # IGX-H22 W/ ACCESSORIES INDICATED, OR EQUIVALENT.

MUA-113(A)

MODULAR INDIRECT FIRED GAS HEAT/EVAPORATIVE COOL MAKEUP AIR UNIT

1,120 CFM @ 2.0: S.P.

ELECTRICAL: 208V., 3 PH, 60 HZ
2 H.P. FAN MOTOR

OPER. WT.: 900 LBS.

PROVIDE EVAPORATIVE COOLING SECTION, GAS-FIRED INDIRECT HEATING SECTION, INTAKE HOOD W/ BIRDSCREEN, V-BANK FILTER SECTION.

BASIS OF DESIGN: GREENHECK MODEL # IGX-H12 W/ ACCESSORIES INDICATED, OR EQUIVALENT.

MUA-113(B)

MODULAR INDIRECT FIRED GAS HEAT/EVAPORATIVE COOL MAKEUP AIR UNIT

3,300 CFM @ 3.0: S.P.

ELECTRICAL: 208V., 3 PH, 60 HZ
7.5 H.P. FAN MOTOR

OPER. WT.: 1,300 LBS.

PROVIDE EVAPORATIVE COOLING SECTION, GAS-FIRED INDIRECT HEATING SECTION, INTAKE HOOD W/ BIRDSCREEN, V-BANK FILTER SECTION.

BASIS OF DESIGN: GREENHECK MODEL # IGX-H22 W/ ACCESSORIES INDICATED, OR EQUIVALENT.

LEGEND

MARK	DESCRIPTION
UP / DN.	SUPPLY DUCTS
UP / DN.	RETURN DUCTS
UP / DN.	EXHAUST DUCTS
	EXHAUST GRILLE
SA	SUPPLY AIR
RA	RETURN AIR
EA	EXHAUST AIR
OSA	OUTSIDE AIR
MUA	MAKEUP AIR
CFM	CUBIC FEET PER MIN.
CEG	CEILING EXHAUST GRILLE
O.C.	ON CENTER
SQ./FT.	SQUARE FOOT
CU./FT.	CUBIC FOOT
LBS.	POUNDS
ø	DIAMETER
MVD	MANUAL VOL. DAMPER
TYP.	TYPICAL
D.L.	DOOR LOUVER
T	THERMOSTAT
S	SENSOR

HVAC SYSTEMS DESIGN SCOPE SUMMARY

GENERAL

NEW INTERIOR TENANT IMPROVEMENT AREAS ARE TO BE PROVIDED WITH HEATING, VENTILATING & AIR CONDITIONING (HVAC) SYSTEMS TO SUPPORT THE INTENDED FUNCTIONS FOR EACH OCCUPIED SPACE.

SHOP CLASSROMS 1, 2 & 3 SYSTEMS ARE PACKAGED GAS/ELECTRIC AIR CONDITIONING UNITS MOUNTED ON GRADE AND INCLUDE 100% OSA ECONOMIZER ACCESSORY TO COMPLY WITH CURRENT OMSC REQUIREMENTS.

LAB CLASSROOMS 1, 2 & 3 AND THE COMMONS AREA ARE SPLIT SYSTEM HEAT PUMPS WITH OUTDOOR UNIT MOUNTED ON THE EXTERIOR WALL AND INDOOR MULTI-POISE AIR HANDLING UNITS MOUNTED IN A VERTICAL UP DISCHARGE SUPPLY CONFIGURATION OR A HORIZONTAL SUPPLY DISCHARGE CONFIGURATION AS REQUIRED. THE INDOOR UNITS INCLUDE A 100% OSA ECONOMIZER ACCESSORY TO COMPLY WITH CURRENT OMSC REQUIREMENTS.

IDF ROOM 120 IS A COOLING ONLY SPLIT SYSTEM WITH OUTDOOR CONDENSING UNIT MOUNTED ON THE EXTERIOR WALL AND INDOOR DUCTLESS FAN COIL UNIT MOUNTED ON THE INTERIOR WALL ABOVE THE DOOR.

REQUIRED MECHANICAL EXHAUST VENTILATION FOR THE PUBLIC RESTROOMS AND JANITORIAL 119 IS INCLUDED AS WELL AS A VENTILATION FAN FOR THE ELECTRICAL ROOM.

SHOP CLASSROOM VENTILATION

THE SHOP CLASSROOMS ARE TO INCLUDE INDUSTRIAL TYPE EQUIPMENT AS PART OF THE CTE PROGRAM. THIS REQUIRES DEDICATED EXHAUST AND TEMPERED MAKEUP AIR SYSTEMS TO PROVIDE CODE REQUIRED VENTILATION FOR PROCESSES INCLUDING WOODWORKING, AUTOMOTIVE REPAIR, AND METALWORKING. WHILE THE INTENT IS TO PROVIDE SUCH TRADE RELATED EDUCATIONAL OPPORTUNITIES, THE CURRENT PLAN IS TO ASSESS THE REQUIREMENTS IN AN ONGOING BASIS AFTER THE INFRASTRUCTURE FOR THE OCCUPIED SPACES INTERIOR ENVIRONMENT COMFORT EQUIPMENT IS INSTALLED. THE EXCEPTION IS TO PROVIDE A CARBON MONOXIDE VEHICLE EXHAUST SYSTEM WITH TEMPERED MAKEUP AIR FOR THE INITIAL BUILD-OUT IN SHOP CLASSROOM 2. THE REMAINDER OF THE PROCESS VENTILATION EQUIPMENT IS TO BE DESIGNED AND INSTALLED AT A LATER DATE.

EQUIPMENT ASSOCIATED WITH THE PLANNED FUTURE INDUSTRIAL EDUCATION PROCESSES ARE INCLUDED IN THIS SCHEMATIC DESIGN AS A GENERAL REFERENCE AND DO NOT REFLECT THE ACTUAL EQUIPMENT THAT WILL BE DETERMINED AND INSTALLED UNDER A SEPARATE CONTRACT.

GENERAL NOTES

1. ENTIRE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE 2025 OSSC, 2025 OMSC, 2023 OPSC, 2025 OEESC, CITY & COUNTY CODES, AND OTHER APPLICABLE CODES AND REGULATIONS.
2. COORDINATE ENTIRE INSTALLATION OF THE H.V.A.C. SYSTEM WITH THE WORK OF OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. PROVIDE FITTINGS, OFFSETS, AND TRANSITIONS AS REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
3. PLATFORMS, CURBS AND FLASHINGS FOR MECHANICAL EQUIPMENT SHALL BE AS INDICATED ON THE PLANS, UNLESS NOTED OTHERWISE.
4. EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE FITTINGS, TRANSITIONS, DAMPERS, VALVES, AND OTHER DEVICES REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
5. CONSTRUCT, ERECT AND TEST DUCTWORK IN ACCORDANCE WITH THE MOST RESTRICTIVE OF LOCAL REGULATIONS, 2022 OMSC, PROCEDURES DETAILED IN THE ASHRAE HANDBOOK OF FUNDAMENTALS OR THE APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION. A COPY OF THE SMACNA STANDARDS SHALL BE KEPT AT THE JOB FOR REFERENCE BY THOSE REVIEWING THE WORK.
6. DUCT SIZES ARE NET INSIDE CLEAR DIMENSIONS (I.E. NOT INCLUDING LINER). DUCT JOINTS SHALL BE SEALED AIR TIGHT. PROVIDE STRAP, TRAPEZE, OR ROD HANGERS.
7. DUCT INSULATION AND LININGS, INCLUDING ADHESIVES WHEN USED, SHALL HAVE A FLAME SPREAD INDEX NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723..
8. DUCTWORK INSULATION SHALL HAVE THERMAL CONDUCTANCE OF 0.24 BTU PER SQ. IN./SQ. FT. PER DEG. F. PER HOUR AT A MEAN TEMPERATURE OF 75 DEG. F. AT 1-1/2 LB./CU. FT. DENSITY. LINER SHALL BE TREATED WITH A FIRE DAMAGE AND MILDEW RESISTANT SURFACE. FIBERGLASS DUCT WRAP BLANKET SHALL HAVE A THERMAL CONDUCTANCE OF 0.27 BTU PER IN./ SQ. FT. /DEG. F. PER HOUR AT A MEAN TEMPERATURE OF 75 DEG. F., AT 0.75 LB./CU. FT. DENSITY, WITH FSK FOIL REINFORCED FIRE-RESISTANT FACING AND A VAPOR BARRIER RATING OF 0.5 PERM.
9. LOCATIONS SHOWN ON PLANS FOR THERMOSTATS, SENSORS, AND SWITCHES CONTROLLING HVAC EQUIPMENT ARE SUGGESTED AND ARE TO BE VERIFIED AND COORDINATED WITH ARCHITECTURAL DRAWINGS AND ELECTRICAL DEVICE LAYOUTS.

SHEET INDEX

M001	HVAC LEGEND, NOTES & SCHEDULES
M100	HVAC OVERALL BUILDING PLAN
M120	HVAC FLOOR PLAN

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REVISIONS

CRESWELL HIGH SCHOOL CTE BUILDING
INTERIOR IMPROVEMENT
33390 NIBLOCK LN, CRESWELL, OR 97426
CONSTRUCTION DOCUMENTS

JOB NO: 26767
ISSUE DATE: 11/18/26

HVAC LEGEND, NOTES, & SCHEDULES

M001

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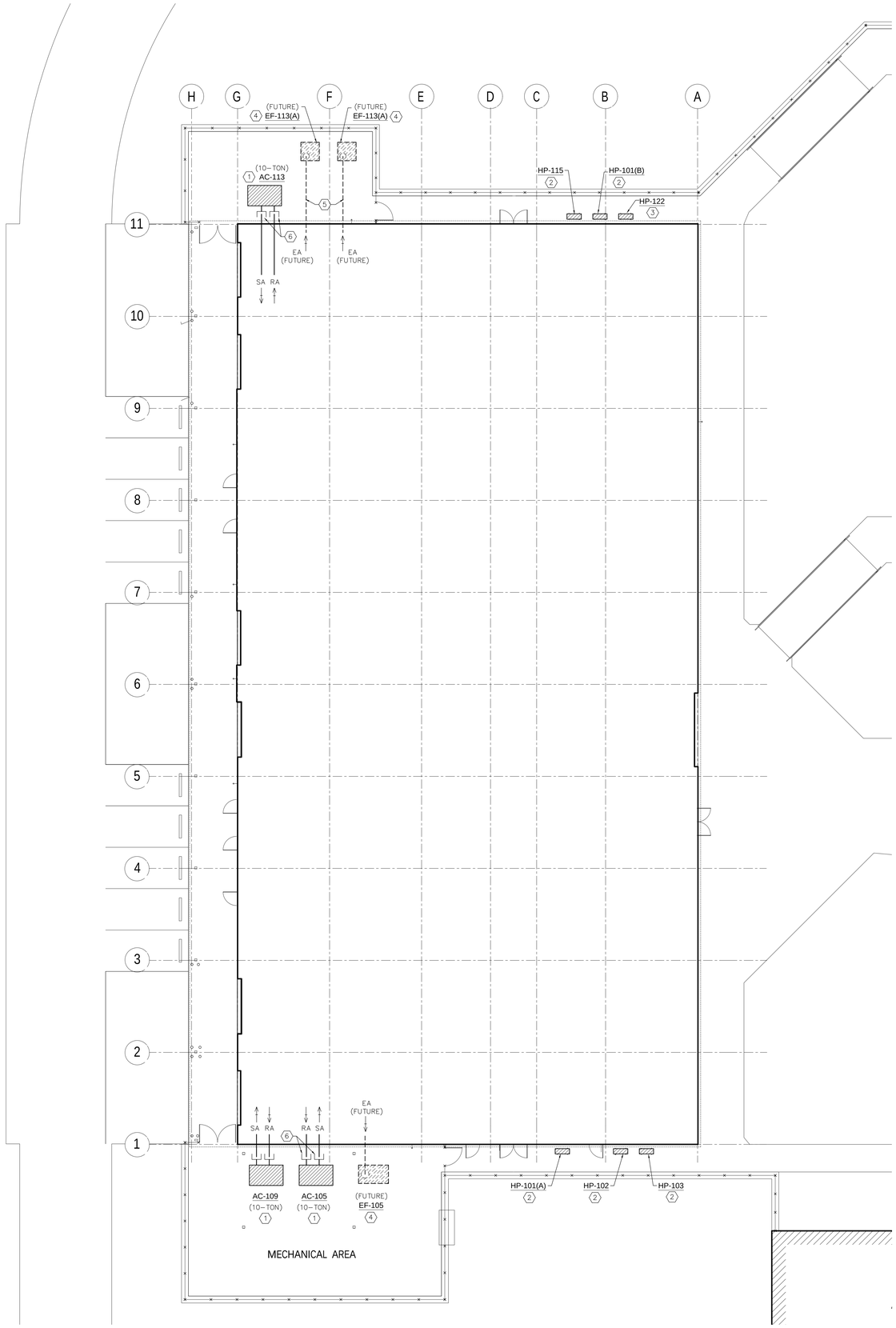

1 M100 HVAC OVERALL BUILDING PLAN
SCALE: 3/32" = 1'-0"

NORTH

PLAN NOTES

1. PACKAGED GAS/ELECTRIC UNIT MOUNTED ON GRADE – SEE SCHEDULE, SHEET M001.
2. OUTDOOR HEAT PUMP UNIT MOUNTED ON WALL @ 8'–0" ABOVE GRADE (+/–) – SEE SCHEDULE, SHEET M001.
3. OUTDOOR CONDENSING UNIT MOUNTED ON WALL @ 8'–0" ABOVE GRADE (+/–) – SEE SCHEDULE, SHEET M001.
4. FUTURE INDUSTRIAL VENTILATION EXHAUST FAN MOUNTED ON GRADE – SEE SCHEDULE. SHEET M001.
5. EA DUCT UP AND RUN OVERHEAD ABOVE WALKWAY THRU EXTERIOR WALL.
6. SA & RA DUCTS UP ALONG & THRU EXTERIOR WALL (TYP.).

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HVAC OVERALL BUILDING PLAN

M100

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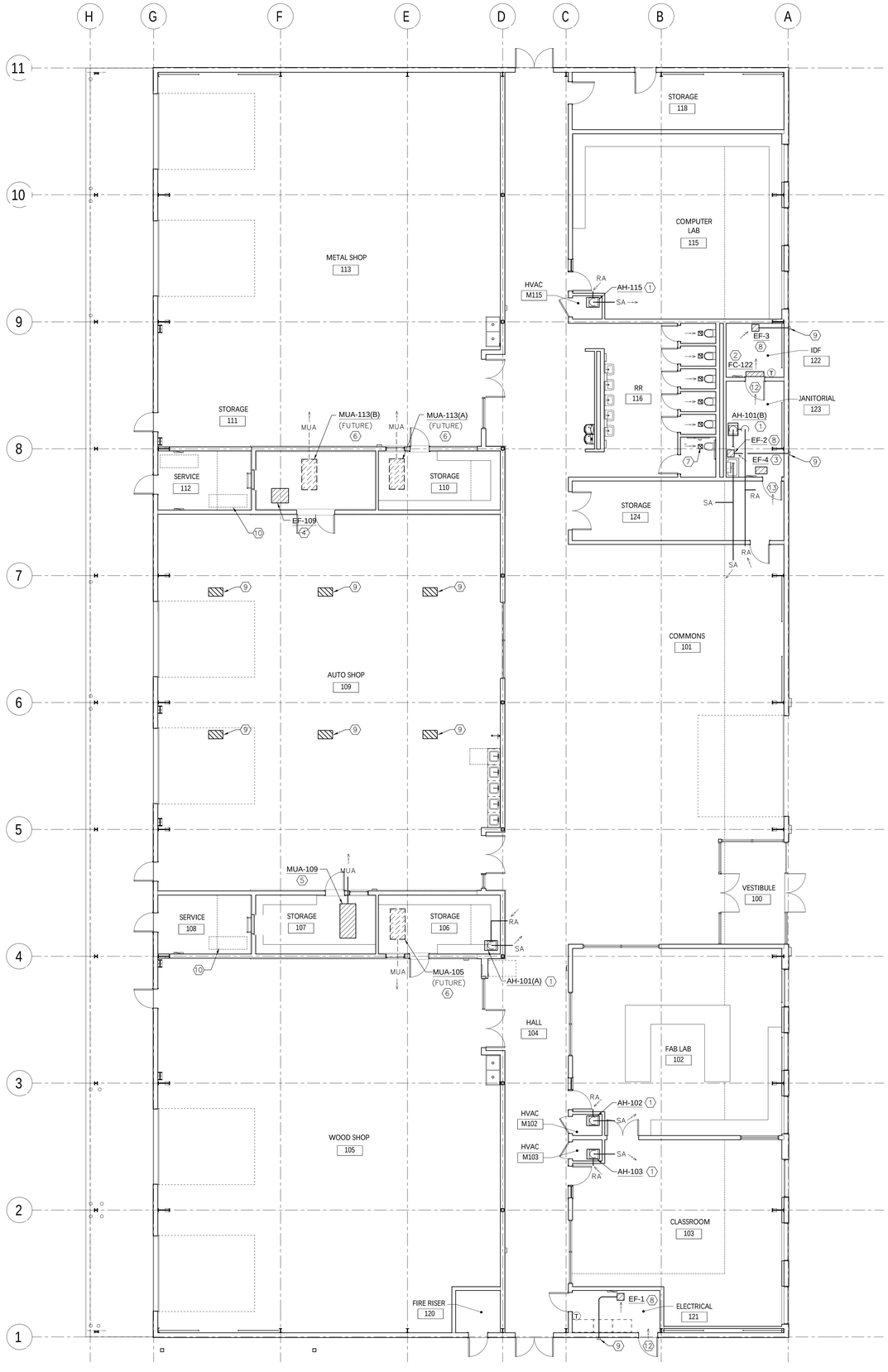

1 M120 HVAC FLOOR PLAN
SCALE: 1/8" = 1'-0"

NORTH

PLAN NOTES

1. FLOOR MOUNTED UPFLOW AIR HANDLING UNIT.
2. WALL MOUNTED DUCTLESS FAN COIL UNIT MOUNTED ABOVE DOOR
3. CABINET EXHAUST FAN MOUNTED HIGH ON WALL STRUCTURE.
4. INDUSTRIAL VENTILATION EXHAUST FAN MOUNTED ON FRAMED CEILING STRUCTURE.
5. INDUSTRIAL VENTILATION MAKEUP AIR UNIT MOUNTED ON FRAMED CEILING STRUCTURE.
6. FUTURE INDUSTRIAL VENTILATION MAKEUP AIR UNIT MOUNTED ON FRAMED CEILING STRUCTURE.
7. 8"x8" CEG (TYP.)
8. CEILING EXHAUST FAN W/ GRILLE – MOUNTED ON WALL.
9. SUSPENDED EXHAUST HOSE REEL (TYP.)
10. SHOP EQUIPMENT AIR COMPRESSOR BY OTHERS.
11. WALL CAP.
12. 1 SQ. FT. D.L.
13. 2 SQ. FT. D.L.

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HVAC FLOOR PLAN

M120

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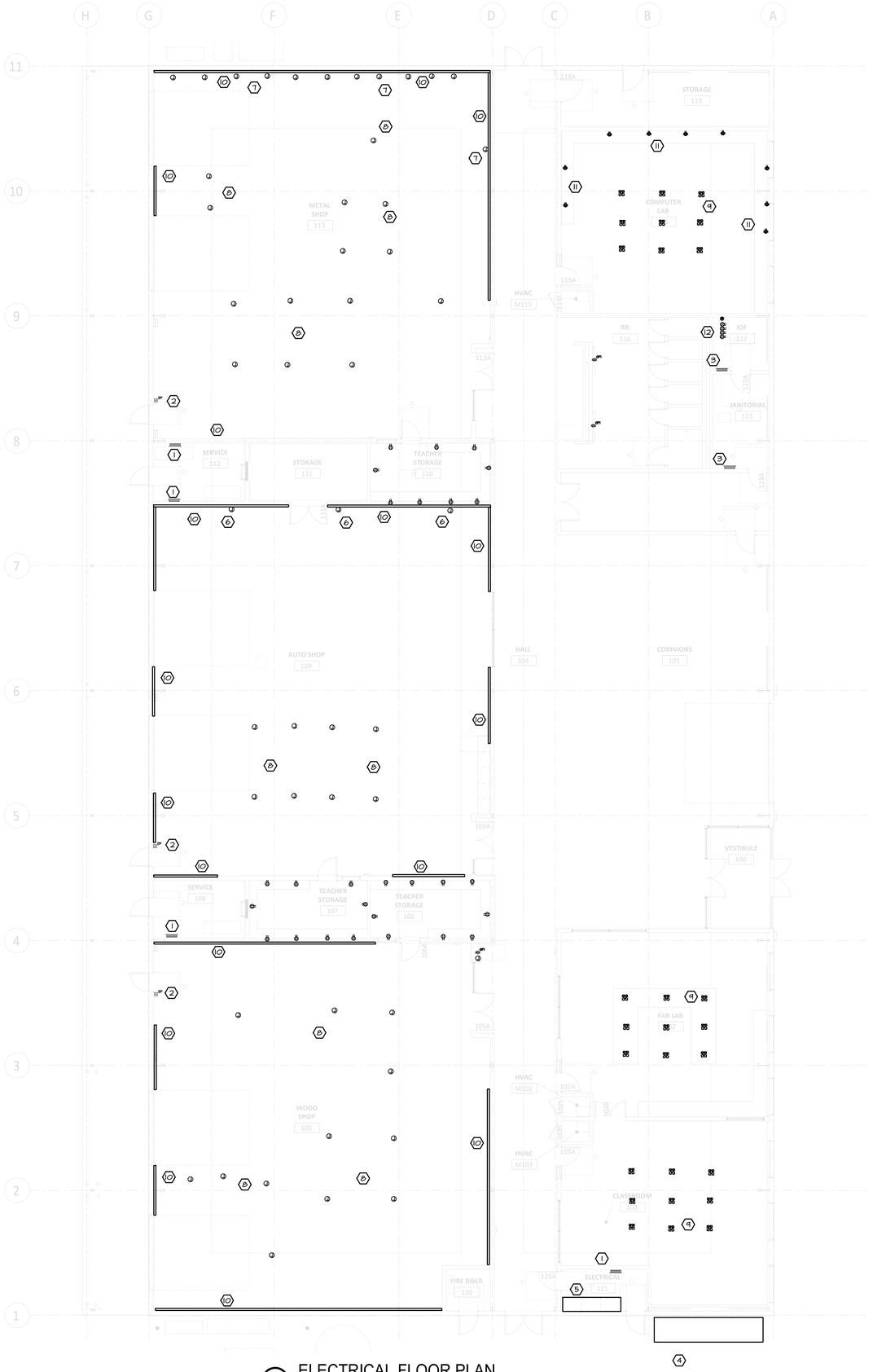


1 ELECTRICAL FLOOR PLAN
1/8" = 1'-0"

SYMBOLS AND ABBREVIATIONS LEGEND

POWER

- UNDERGROUND OR UNDERFLOOR RACEWAY
- 'L2-1-16' — HOMERUN, PANEL & CIRCUIT NUMBER. WIRING, OTHER THAN FEEDERS NOT SHOWN.
- F — SIGNAL WIRING: F = FIRE ALARM, I = INTERCOM, C= LOW VOLTAGE CONTROL, T= TELEPHONE, D= DATA, TV = TELEVISION, P= CLOCK PROGRAM, PC = PHOTO CONTROL
- PANELBOARD
- J — JUNCTION BOX
- 6FI, +44" MP(1)a — DUPLEX RECEPTACLE - "MP"=WEATHERPROOF, "GFI"=GROUND FAULT INTERRUPTER TYPE, "m"= MOUNTING HEIGHT, "a"=CIRCUIT a, "AFI"= ARC FAULT INTERRUPTER, "USB"= WITH CHARGING PORTS, "D"= ON DEDICATED CIRCUIT, "L"= LOCKING
- SURFACE RECEPTACLE RACEWAY

LIGHT FIXTURES

- A1 — FIXTURE IDENTIFIER. FIXTURE TYPE "A1" SEE LIGHTING FIXTURE SCHEDULE.
- LIGHT FIXTURE - DRAWN TO SCALE WHERE POSSIBLE
- FIXTURE WITH EMERGENCY BATTERY BACKUP
- LUMINAIRE IN 4', 8', & 12' LENGTHS, MOUNTED END-TO-END WHERE SHOWN

GENERAL

- 2 — SHEET REFERENCE NOTE
- 2 / E-121 — PLAN OR DETAIL NUMBER / SHEET NUMBER
- 123 — ROOM NUMBER
- EXISTING WORK SHOWN LIGHT
- NEW WORK SHOWN BOLD
- EXISTING TO BE REMOVED

REFERENCE NOTES:

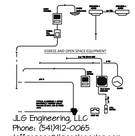
1. 120/208V 3P 42 CKT 400A PANEL WITH A MIN OF 4-30/3, 4-30/2, & 12-20/1 BREAKERS.
2. EMERGENCY POWER SHUTDOWN BUTTON
3. 120/208V 3P 42 CKT 225A PANEL WITH A MIN OF 24-20/1 BREAKERS.
4. MAIN SERVICE METER AND DISCONNECT PER PP&L STANDARDS.
5. MAIN DISTRIBUTION PANEL.
6. CONNECT VEHICLE LIFTS. SEE EQUIPMENT PLAN
7. CONNECT WELDING STATIONS. SEE EQUIPMENT PLAN
8. RETRACTABLE CORD REEL FOR WORKSTATION. QUAD OUTLETS.
9. FLOOR BOX FOR WORKSTATION. PROVIDE 2-DUPLEX RCPTS AND 4-CAT6 JACKS.
10. EQUIPMENT WALL, PROVIDE RECEPTACLES ON 8' CENTERS. SEE ARCH EQUIPMENT PLAN FOR REQUIRED AREAS.
11. BOX FOR WORKSTATION. PROVIDE 2-QUAD RCPTS AND 4-CAT6 JACKS.
12. 20A 240V AND 4-20A RECEPTACLES. LOCATE FOR IDF RACK.

GENERAL NOTES:

PLAN IS INTENDED TO IDENTIFY MINIMUM REQUIREMENTS FOR SYSTEMS SHOWN. REFER TO CONTRACTOR DESIGN SECTIONS OF SPECIFICATIONS AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL DETAILS AND REQUIREMENTS.

FUTURE EQUIPMENT AND MECHANICAL SHALL BE INCLUDED IN FINAL SERVICE LOAD CALCULATIONS. REFER TO ARCHITECTURAL AND MECHANICAL FOR DETAILS.

REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EQUIPMENT REQUIRING ELECTRICAL SERVICE.



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ELECTRICAL PLAN

E-1

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