ABBREVIATIONS

&	AND	I.D.	INSIDE DIAMETER
L	ANGLE	INSUL.	INSULATION
@	AT	INT.	INTERIOR
℄	CENTERLINE	JT.	JOINT
ø	DIAMETER OF ROUND	KIT.	KITCHEN
#	POUND OR NUMBER	LAM.	LAMINATE
(E)	EXISTING	LAV.	LAVATORY
(R)	RELOCATED	LT.	LIGHT
(N)	NEW	L.E.D.	LIGHT EMITTING DIODE
A.F.F.	ABOVE FINISH FLOOR	MAX.	MAXIMUM
A.D.	AREA DRAIN	M.C.	MEDICINE CABINET
ADJ.	ADJUSTABLE	MECH.	MECHANICAL
AGGR.	AGGREGATE	MEMB.	MEMBRANE
AL.	ALUMINUM	MTL.	METAL
APPROX.	APPROXIMATE	MFR.	MANUFACTURER
ARCH.	ARCHITECTURAL	MIN.	MINIMUM
ASB.	ASBESTOS	MIR.	MIRROR
ASPH.	ASPHALT	MISC.	MISCELLANEOUS
BD.	BOARD	M.O.	MASONRY OPENING
BITUM.	BITUMINOUS	MTD.	MOUNTED
BLDG.	BUILDING	MUL.	MULLION
BLKG.	BLOCKING	N.	NORTH
BM.	BEAM	N.I.C.	NOT IN CONTRACT
BOT.	BOTTOM	NO. OR #	NUMBER
CAB.	CABINET	NOM.	NOMINAL
CEM.	CEMENT	N.T.S.	NOT TO SCALE
CER.	CERAMIC	O.A.	OVERALL
C.I.	CAST IRON	OBS.	OBSCURE
CLG.	CEILING	O.C.	ON CENTER
CLKG.	CAULKING	O.D.	OUTSIDE DIAMETER
CLO.	CLOSET	OFF.	OFFICE
CLR./CL.	CLEAR	OPNG.	OPENING
C.O.	CASED OPENING	OPP.	OPPOSITE
COL.	COLUMN	PL.	PLATE
CONC.	CONCRETE	P.LAM.	PLASTIC LAMINATE
CONN.	CONNECTION	PLAS.	PLASTER
CONSTR.	CONSTRUCTION	PLYWD.	PLYWOOD
CONT.	CONTINUOUS	PR.	PAIR
CTSK.	COUNTERSUNK	PT.	POINT
CNTR.	COUNTER	PTN.	PARTITION
CTR.	CENTER	Q.T.	QUARRY TILE
DBL.	DOUBLE	QSR	QUICK SERVE RESTAURANT
DEPT.	DEPARTMENT	R OR RAD.	RADIUS
DET.	DETAIL	R.D.	ROOF DRAIN
DIA.	DIAMETER	REF.	REFERENCE
DIM.	DIMENSION	REFR.	REFRIGERATOR
DISP.	DISPENSER	RGTR.	REGISTER
DN.	DOWN	REINF.	REINFORCED
D.O.	DOOR OPENING	REQ'D	REQUIRED
DR.	DOOR	RESIL.	RESILIENT
DWR.	DRAWER	RM.	ROOM
D.S.	DOWNSPOUT	R.O.	ROUGH OPENING
DWG.	DRAWING	R.W.L.	RAIN WATER LEADER
E.	EAST	S.	SOUTH
EA.	EACH	S.C.	SOLID CORE
E.J.	EXPANSION JOINT	SCHED.	SCHEDULE
EL.	ELEVATION	S.D.	SOAP DISPENSER
ELEC.	ELECTRICAL	SECT.	SECTION
E.P.	ELECTRICAL PANELBOARD	SH.	SHELF
EQ.	EQUAL	SHR.	SHOWER
EQPT.	EQUIPMENT	SHT.	SHEET
EXST.	EXISTING	SIM.	SIMILAR
EXP.	EXPANSION	SPEC.	SPECIFICATION
EXT.	EXTERIOR	SQ.	SQUARE
F.E.	FIRE EXTINGUISHER	S.S.	STAINLESS STEEL
F.F.	FLOOR FINISH	STD.	STANDARD
FDN.	FOUNDATION	STL.	STEEL
FIN.	FINISH	STOR.	STORAGE
FL.	FLOOR	STRL.	STRUCTURAL
FLASH'G	FLASHING	SYM.	SYMMETRICAL
FLUOR.	FLUORESCENT	T.B.S.	TO BE SPECIFIED
F.O.C.	FACE OF CONCRETE	TRD	TREAD
F.O.F.	FACE OF FINISH	T.B.	TOWEL BAR
F.O.S.	FACE OF STUD	T.C.	TOP OF CURB
FPRF.	FIREPROOF	TEL.	TELEPHONE
F.S.	FLOOR SINK	TER.	TERRAZZO
FT.	FOOT OR FEET	T&G	TONGUE & GROOVE
FTG.	FOOTING	THK.	THICK
FURR.	FURRING	T.P.	TOP OF PAVEMENT
FUT.	FUTURE	T.P.D.	TOILET PAPER DISPENSER
G.A.	GAUGE	T.V.	TELEVISION
GALV.	GALVANIZED	T.W.	TOP OF WALL
GL.	GLASS	TYP.	TYPICAL
GR.	GRADE	UNF.	UNFINISHED
GSM	GALVANIZED SHEET METAL	U.N.O.	UNLESS NOTED OTHERWISE
GYP.	GYPSUM	VERT.	VERTICAL
G.W.B.	GYPSUM WALL BOARD	V.C.T.	VINYL COMPOSITE TILE
H.B.	HOSE BIBB	W.	WEST
H.C.	HOLLOW CORE	W/	WITH
HDWD.	HARDWOOD	W.B.	WALL BASE
HDWE.	HARDWARE	W.C.	WATER CLOSET
H.M.	HOLLOW METAL	WD.	WOOD
HORIZ.	HORIZONTAL	W/O	WITHOUT
HR.	HOUR	WP.	WATERPROOF
HT.	HEIGHT	WSCT.	WAINSCOT
		WT.	WEIGHT

SYMBOLS

SECTION MARK — XX / XX.X

EXTERIOR ELEVATION TAG — XX / XX.X

ELEVATION TAG — X / X XX.X X / X

ELEVATION MARK — XX–XX" LOCATION

FINISH TAG — XX–X

WINDOW TAG — X

DOOR TAG — X

WALL TAG — XX

KEYED NOTE — XX

bp ARCO

BP WEST COAST PRODUCTS, LLC

ARCO 3400 am/pm
1402 S MERIDIAN
PUYALLUP, WA 98371

GENERAL PROJECT NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH APPLICABLE BUILDING CODES AND LOCAL RESTRICTIONS. CONTRACTORS MUST COMPLY WITH CONTRACTOR REGISTRATION REQUIREMENTS OF ALL GOVERNING AUTHORITIES. THE GENERAL BUILDING PERMITS SHALL BE PAID FOR BY THE OWNER UNLESS AGREED OTHERWISE. ALL OTHER PERMITS SHALL BE SECURED AND PAID FOR BY THE SUBCONTRACTOR DIRECTLY RESPONSIBLE. ALL REQUIRED CITY, COUNTY AND/OR STATE LICENSES SHALL BE ACQUIRED AND PAID FOR BY THE INDIVIDUAL SUBCONTRACTOR.
2. IT IS THE INTENT OF THE OWNER, THE ARCHITECT AND THEIR CONSULTANTS, THAT ALL WORK DEPICTED IN THESE DRAWINGS AND SPECIFICATIONS IS TO BE PROVIDED BY THE GENERAL CONTRACTOR. ANY REFERENCES TO THE CONTRARY THROUGHOUT THE CONSTRUCTION DOCUMENTS OR SPECIFICATIONS IS NOT INTENDED. ADDITIONALLY, CONTRACTOR IS TO REFER TO THE BID DOCUMENT PACKET AND/OR OWNER'S SCOPE OF WORK DOCUMENT(S) WHICH SHALL TAKE PRECEDENCE OVER SCOPE THAT MAY BE PRESENTED IN THIS SET OF CONSTRUCTION DOCUMENTS OR SPECIFICATIONS. THE SCOPE OF WORK DOCUMENT IS INTENDED TO IDENTIFY ALL OWNER SUPPLIED ITEMS OR WORK PROVIDED BY OTHERS. ABSENCE OF THESE DOCUMENTS MEANS ALL WORK NOTED IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR UNLESS THE OWNER HAS SPECIFIED OTHERWISE DURING THE BID PROCESS.
3. APPROVED PLANS SHALL BE KEPT IN A PLAN BOX AND SHALL NOT BE USED BY WORKMEN. ALL CONSTRUCTION SETS SHALL REFLECT SAME INFORMATION AS THE APPROVED PLANS. CONTRACTOR SHALL MAINTAIN ONE COMPLETE SET OF PLANS ON THE PREMISES IN GOOD CONDITION AT ALL TIMES. THIS SHALL INCLUDE ALL ADDENDA AND CHANGE ORDERS.
4. DISCREPANCIES BETWEEN PORTIONS OF THE CONTRACT DOCUMENTS, DRAWINGS AND SPECIFICATIONS ARE NOT INTENDED. THE CONTRACTOR IS TO CLARIFY ANY SUCH DISCREPANCIES WITH THE ARCHITECT OR PROJECT MANAGER PRIOR TO COMMENCING WORK. STATED DIMENSIONS TAKE PRECEDENCE OVER GRAPHICS, DO NOT SCALE DRAWINGS TO DETERMINE LOCATIONS. THE ARCHITECT OR PROJECT MANAGER SHALL BE NOTIFIED OF ANY SUCH DISCREPANCIES PRIOR TO CONTINUING WITH WORK.
5. IT IS THE INTENT OF THE ARCHITECT THAT THIS WORK BE IN CONFORMANCE WITH ALL REQUIREMENTS OF THE BUILDING AUTHORITIES HAVING JURISDICTION OVER THIS TYPE OF CONSTRUCTION AND OCCUPANCY. THE CONTRACTOR SHALL NOTIFY ARCHITECT IMMEDIATELY OF CONFLICTS WITH GOVERNING CODE REQUIREMENTS BEFORE PROCEEDING FURTHER WITH THE AFFECTED WORK.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES AND TO PROTECT THEM FROM DAMAGE. CONTRACTOR SHALL BEAR THE EXPENSE OF REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED BY OPERATIONS IN CONJUNCTION WITH THE EXECUTION OF THE WORK.
7. THE CONTRACTOR TO PROVIDE FIRE SPRINKLER SYSTEM AND ALARM SYSTEM (WHEN REQUIRED BY CODE AND NOTED AS REQUIRED BY THESE PLANS) IN ACCORDANCE WITH NFPA REQUIREMENTS. FIRE SPRINKLER CONTRACTOR IS TO SUBMIT COMPLETE SHOP DRAWINGS, LAYOUT AND RELATED DATA TO BUILDING DEPARTMENT AND FIRE MARSHAL FOR APPROVAL PRIOR TO INSTALLATION.
8. FOR CONSTRUCTION DETAILS NOT SHOWN, USE THE MANUFACTURER'S APPROVED SHOP DRAWINGS/DATA SHEETS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE IN THE WORK EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.
9. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL FOOD SERVICE EQUIPMENT AND COORDINATE LOCATION OF ALL UTILITIES INCLUDING FLOOR SINKS, FLOOR DRAINS, SLOPES/SLAB DEPRESSIONS AND RAISED CURBS, ELECTRICAL AND PLUMBING AND STUBOUTS FOR FUTURE EQUIPMENT WHERE NOTED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE SECURITY OF THE SITE WHILE JOB IS IN PROGRESS AND UNTIL BUILDING IS OCCUPIED.
11. ALL DEBRIS SHALL BE REMOVED FROM PREMISES REGULARLY AND ALL AREAS SHALL BE LEFT IN A CLEAN (BROOM) CONDITION AT ALL TIMES.
12. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THE SAFETY OF THE OCCUPANTS AND WORKERS AT ALL TIMES.
13. CONTRACTOR SHALL PROVIDE TEMPORARY WATER, POWER, TELEPHONE, FACSIMILE OR METHOD TO RECEIVE E-MAIL, PRINTER AND TOILET FACILITIES AS REQUIRED.
14. GENERAL CONTRACTOR IS RESPONSIBLE FOR RECEIVING, UNLOADING, UN-CRATING, INSTALLATION AND HOOKUP OF ALL FOOD SERVICE EQUIPMENT AND OTHER OWNER OR VENDOR FURNISHED ITEMS.
15. GENERAL CONTRACTOR IS REQUIRED TO LABEL ALL ELECTRICAL PANELS, PLUMBING VALVES, AND ROOF TOP EQUIPMENT WITH PLASTIC PHENOLIC ENGRAVED PLATES ATTACHED TO IDENTIFY THE EQUIPMENT USE OR PURPOSE.
16. CONTRACTOR SHALL SUPPLY, LOCATE AND BUILD INTO THE WORK ALL INSERTS, ANCHORS, ANGLES, PLATES, OPENINGS, SLEEVES, HANGERS, SLAB DEPRESSIONS AND PITCHES AS MAY BE REQUIRED TO ATTACH AND ACCOMMODATE OTHER WORK. SPECIAL INSPECTION REQUIREMENTS MAY APPLY TO ALL STRUCTURAL EMBEDMENTS OR POST INSTALLED ANCHORS. CONTRACTOR SHALL CONFIRM REQUIREMENTS PRIOR TO INSTALLATION.
17. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE MEANS AND METHODS FOR ERECTION PROCEDURE AND SEQUENCE OF THE CONSTRUCTION. CONTRACTOR TO INSURE THE SAFETY OF ALL INSTALLED IMPROVEMENTS, BUILDINGS AND THEIR COMPONENT PARTS DURING ERECTION.
18. MATERIALS LISTED IN DRAWINGS ARE BASED ON DESIGN INTENT. ALTERNATE SPECIFICATIONS MAY BE ACCEPTED PROVIDED THEY CLOSELY MATCH AND ARE DEEMED EQUAL TO SPECIFIED MATERIAL. GENERAL CONTRACTOR IS TO SUBMIT PROPOSED SAMPLES OF SUBSTITUTIONS, ALONG WITH SAMPLE OF THAT SPECIFIED IN DRAWINGS FOR REVIEW BY THE ARCHITECT OR PROJECT MANAGER. SUBSTITUTIONS WILL ONLY BE APPROVED IF SPECIFIED MATERIAL IS PROVEN TO BE UNAVAILABLE WITHIN A REASONABLE TIME FRAME OR THE SUBSTITUTION IS A BENEFIT TO THE OWNER RELATED TO COST OR SCHEDULE TIME SAVINGS.
19. THE PROJECT BOUNDARIES SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE OWNERS ATTENTION IMMEDIATELY BEFORE PROCEEDING WITH CONSTRUCTION.
20. ALL LABOR, MATERIALS AND INSTALLATIONS MUST COMPLY WITH THE CODES AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION. ANY DISCREPANCY WHICH EXISTS BETWEEN THE REQUIREMENTS BY THE PLANS, SPECIFICATIONS, SAID CODES, RULES AND REGULATIONS, SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT, IN WRITING FOR RESOLUTION. IF ANY CHANGE IN THE PLANS AND / OR SPECIFICATIONS OCCURS AS A RESULT OF THE REQUIREMENTS OF THE LIFE SAFETY CODE (NFPA 101) OR ANY OTHER AUTHORITIES HAVING JURISDICTION AFTER THE SUBMISSION OF BIDS, THEN THE BIDDERS WILL BE GIVEN THE OPPORTUNITY TO ADJUST THEIR BIDS, IF NECESSARY, ONLY FOR THE CHANGE.
21. THE CONTRACTOR SHALL COORDINATE THE WORK WITH MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR ALL NECESSARY OPENINGS AND PENETRATIONS THROUGH WALLS, CEILING AND FLOORS.
22. ALL EXPOSED PIPES, CONDUITS OR DUCTS IN FINISHES AREAS, WHETHER SHOWN ON DRAWINGS OR NOT, SHALL BE FURRED OUT WITH GYPSUM BOARD.
23. LOCATION OF ACCESS DOORS SUPPLIED BY MECHANICAL TRADES AND INSTALLED BY OTHERS SHALL BE DETERMINED IN THE FIELD THROUGH COORDINATION OF TRADES, LOCATION OF LIGHT FIXTURES SHALL GOVERN POSITION OF DUCTS AND PIPES FOR WHICH ACCESS DOORS ARE REQUIRED. ACCESS DOORS SHALL NOT BE PLACED IN INACCESSIBLE POSITIONS OR IN THE WAY OF LIGHTS, GRILLS, REGISTERS, CONCEALED BY CASEWORK, ECT.

PROJECT DATA

PROJECT ADDRESS:
1402 SOUTH MERIDIAN,
PUYALLUP, WA 98371

ASSESSOR'S PARCEL NUMBER:
773000-028-1 & 773000-028-8: TITLE PARCEL A
773000-003-1 & 773000-002-1: TITLE PARCEL B

ZONING:
GENERAL COMMERCIAL (GC)

SITE AREA:

51,520 S.F. (1.18 AC)

BUILDINGS:

CONVENIENCE STORE

CONSTRUCTION TYPE: V-B (NON SPRINKLERED)
USE GROUP: M
GROSS AREA: 3,349 S.F.

CANOPY

CONSTRUCTION TYPE: II-B
USE GROUP: M
GROSS AREA: 6,321 S.F.

CAR WASH
CONSTRUCTION TYPE: V-B
USE GROUP: B
GROSS AREA: 1,158 S.F.

PARKING REQUIREMENTS

NO. OF SPACES REQUIRED: 1 SPACE PER 300 SQUARE FEET
3,349/300 = 11.16

NO. OF SPACES PROVIDED: 21

NO. OF ACCESSIBLE PARKING: 1 VAN ACCESSIBLE PER 1-25 AUTO STALLS

NO. OF BICYCLE PARKING: 1 PER 25 AUTO STALLS (2 PROVIDED)

NO. OF EV PARKING:
PER IBC WA AMENDMENT 429, M-OCCUPANCY IS EXEMPT FROM PROVIDING EV CHARGING INFRASTRUCTURE WHEN IT DOES NOT DESIGNATE EMPLOYEE PARKING. HOWEVER, TWO (2) EV PARKING SPACES ARE PROVIDED.

OCCUPANCY LOAD CALCULATION

SEE SHEET G1.3

SCOPE OF WORK

CONSTRUCTION OF NEW 3,349 S.F. ARCO AM/PM CONVENIENCE STORE WITH 4,607 S.F. FUEL CANOPY (49'x94') WITH EIGHT (8) MULTI PRODUCT DISPENSERS, AND TWO (2) UNDERGROUND STORAGE TANKS. CAR WASH AND ASSOCIATED SITE IMPROVEMENTS.

PERMITTED SEPERATELY

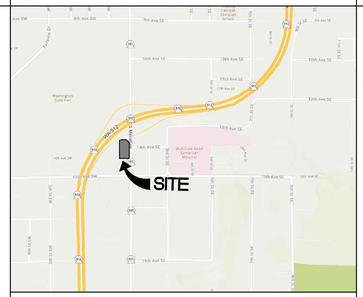
- SIGNAGE UNDER SEPARATE PERMIT
- ELECTRICAL SHEETS ARE FOR REFERENCE ONLY - PERMIT WILL BE ISSUED BY L&I

APPLICABLE CODES

BUILDING CODE :	2018 INTERNATIONAL BUILDING CODE*
PLUMBING CODE:	2018 UNIFORM PLUMBING CODE*
ELECTRICAL CODE:	2018 NATIONAL ELECTRICAL CODE
MECHANICAL CODE:	2018 INTERNATIONAL MECHANICAL CODE AND INTERNATIONAL FUEL GAS CODE*
ENERGY CODE:	2018 WASHINGTON STATE ENERGY CODE
FIRE CODE:	2018 INTERNATIONAL FIRE CODE*
ACCESSIBILITY CODE:	ICC/ANSI A117.1-2009
LOCAL CODES:	PUYALLUP MUNICIPAL CODE

*AS AMENDED BY STATE AND LOCAL JURISDICTION

SITE VICINITY MAP



PROJECT DIRECTORY

APPLICANT/DEVELOPER

BP PRODUCTS, NA
PO BOX 696049
SAN ANTONIO, TX 78269-9931
CONTACT: RANDALL ARNOLD
RANDALL.ARNOLD@BP.COM
PHONE

ARCHITECT

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVE. SOUTH
KENT, WA 98032
CONTACT: MONIKA UEHLIN
PHONE: 425-251-6222 EXT. 7491

CIVIL ENGINEER

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVE. SOUTH
KENT, WA 98032
CONTACT: ALEX WHITE
PHONE: 425-251-6222

LANDSCAPE ARCHITECT

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVE. SOUTH
KENT, WA 98032
CONTACT: JEFF VARLEY
PHONE: 425-251-6222

STRUCTURAL ENGINEER

PCS STRUCTURAL SOLUTIONS
811 FIRST AVENUE, SUITE 620
SEATTLE, WA
CONTACT: JACK PINKARD
PHONE: 206.292.5076

STRUCTURAL ENGINEER (CANOPY)

PERRY BUILDERS
12405LOCKSLEY LANE
AUBURN, CA
CONTACT: LOGAN GRAVES
PHONE: 530-745-0580

PLUMBING, MECHANICAL ELECTRICAL ENGINEER

ABOSSEIN ENGINEERING LLC.
2100 11TH AVE NE
BELLEVUE, WA 98004
CONTACT: ALEX ABOSSEIN
PHONE: 425.462.9441

FUEL TANKS

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVE. SOUTH
KENT, WA 98032
CONTACT: OMAR VASQUEZ
PHONE: 425.251.6222

DEVELOPMENT CONTACTS

ZONING AND LAND USE

CITY OF PUYALLUP
PLANNING SERVICES
333 SOUTH MERIDIAN
PUYALLUP, WA 98371
253-864-4165

BUILDING

CITY OF PUYALLUP
BUILDING SERVICES/FIRE PROTECTION
333 SOUTH MERIDIAN
PUYALLUP, WA 98371
253-864-4165

ENVIRONMENTAL - FOOD

TACOMA-PIERCE COUNTY
HEALTH DEPARTMENT
3629 S. D STREET
TACOMA, WA 98418
253-649-1706

STORMWATER, WATER QUALITY, SANITARY SEWER

CITY OF PUYALLUP
PUBLIC WORKS
1100 39TH AVENUE S.E.
PUYALLUP, WA 98371
253-841-5505

FIRE

SOUTH PIERCE COUNTY
FIRE & RESCUE
902 7TH STREET N.W.
PUYALLUP, WA 98371
253-538-6402

ENVIRONMENTAL - FUEL

WASHINGTON STATE
DEPARTMENT OF ECOLOGY
P.O. BOX 47655
OLYMPIA, STATE 98504
360-407-7382

AIR QUALITY

PUGET SOUND CLEAN AIR AGENCY
1904 THIRD AVENUE
SEATTLE, WA 98101
206-689-4063

ELECTRIC

WASHINGTON STATE
DEPARTMENT OF LABOR AN INDUSTRIES (L&I)
P.O. BOX 44000
OLYMPIA, STATE 98504
360-902-5800

PERMIT SUBMITTAL DATES

- 10/04/2023

PERMIT ISSUE DATES

ARCO APPROVAL DATES

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2 OF 2 ALTA & NSPS LAND TITLE SURVEY

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1 OF 1 SITE PLAN

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U2.5 SEWER PROFILE CANOPY & CAR WASH

1

City of Puyallup
Building
ACCEPTED
JMontgomery
03/11/2024
9:56:57 AM
CITY OF PUYALLUP STATE OF WASHINGTON

FULL SIZED LEDGIBLE **COLOR** PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITTEE ON

SITE FOR ALL INSPECTIONS
(MIN. PLAN SIZE 24" X 36")

SITE KEY PLAN

CLIENT:

bp ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	2/6/24	PERMIT RESUBMITTAL
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

SEAL:

10697 REGISTERED ARCHITECT
DANIEL B GOALWIN
STATE OF WASHINGTON
EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
1402 S MERIDIAN
PUYALLUP, WA 98371

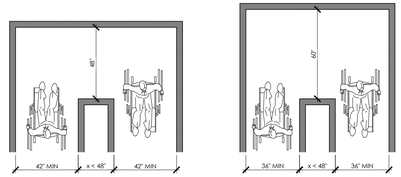
FACILITY #7184

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
COVER SHEET

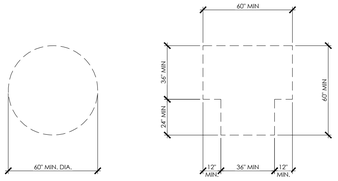
SHEET NO:
G1.1

ACCESSIBLE AND USABLE BUILDINGS & FACILITIES - ICC ANSI A117.1



(a) (b)

FIG. 403.5.1
CLEAR WIDTH AT 180° TURN



(a) CIRCULAR

(b) T-SHAPED

FIG. 304.3
SIZE OF TURNING SPACE

21 TURNING SPACE

SCALE: NOT TO SCALE

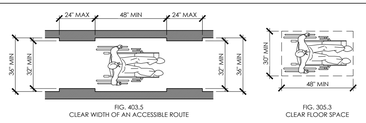


FIG. 403.5
CLEAR WIDTH OF AN ACCESSIBLE ROUTE

FIG. 305.3
CLEAR FLOOR SPACE

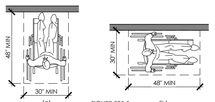


FIGURE 305.5
POSITION OF CLEAR FLOOR SPACE

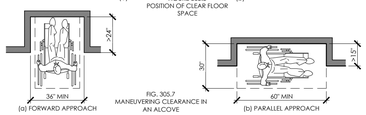


FIG. 305.7
MANEUVERING CLEARANCE IN AN ALCOVE

20 MINIMUM CLEAR FLOOR SPACE

SCALE: NOT TO SCALE

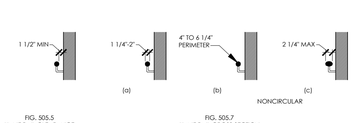
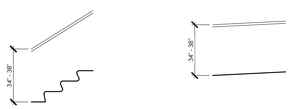


FIG. 505.6
HANDRAIL CLEARANCE

FIG. 505.7
HANDRAIL CROSS SECTION

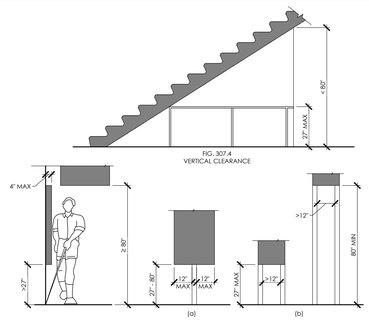
15 HANDRAIL CLEARANCE

SCALE: NOT TO SCALE



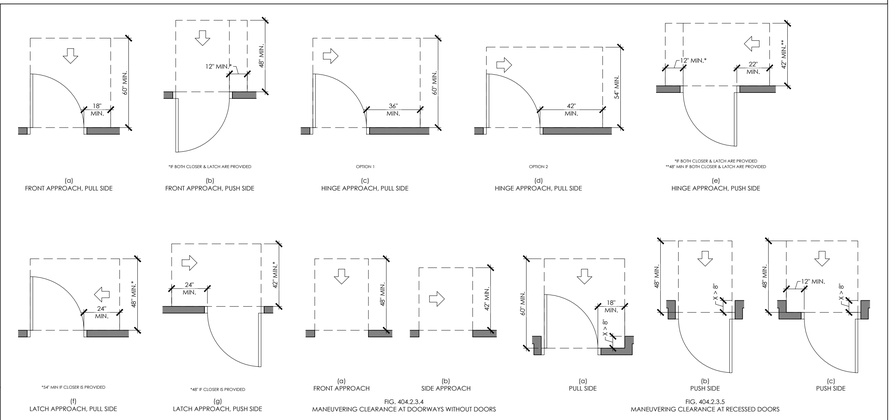
14 HANDRAILS

SCALE: NOT TO SCALE



11 PROTRUDING OBJECTS

SCALE: NOT TO SCALE



8 DOOR CLEARANCES

SCALE: NOT TO SCALE

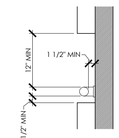


FIG. 609.3
SPACING OF GRAB BARS

7 GRAB BAR SPACING

SCALE: NTS

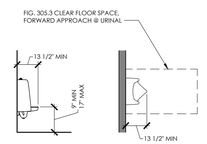


FIG. 305.3 CLEAR FLOOR SPACE, FORWARD APPROACH @ URINAL

6 URINAL HEIGHT & CLEARANCE

SCALE: NTS

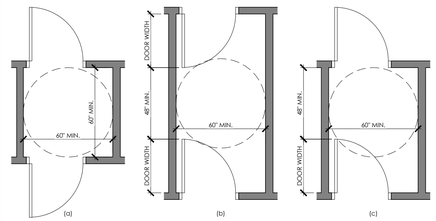


FIG. 404.2.5
TWO DOORS IN A SERIES

2 DOORS IN A SERIES

SCALE: NOT TO SCALE

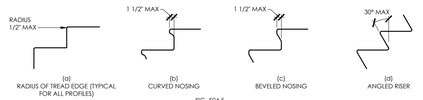


FIG. 504.5
STAIR NOSINGS

19 TREAD WIDTH/ NOSINGS

SCALE: NOT TO SCALE

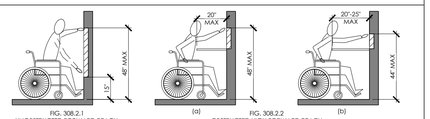


FIG. 308.2.1
UNOBSTRUCTED FORWARD REACH

FIG. 308.2.2
OBSTRUCTED HIGH FORWARD REACH

18 FORWARD REACH

SCALE: NOT TO SCALE

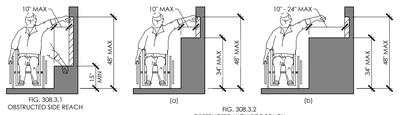
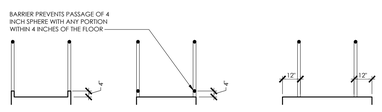


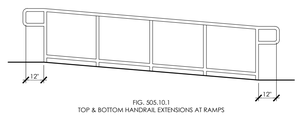
FIG. 308.3.1
OBSTRUCTED SIDE REACH

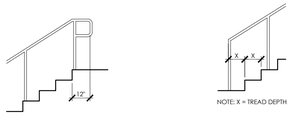
FIG. 308.3.2
OBSTRUCTED HIGH SIDE REACH

17 SIDE REACH

SCALE: NOT TO SCALE

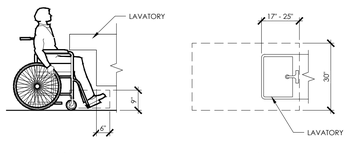






13 HANDRAILS

SCALE: NOT TO SCALE



16 LAVATORY KNEE & TOE CLEARANCES

SCALE: NOT TO SCALE

LOCATION:
- LATCH SIDE @ SINGLE DOOR
- ON INACTIVE DOOR LEAF
- RIGHT SIDE @ DOUBLE DOOR
- NEAREST ADJACENT WALL IF ABOVE DOES NOT EXIST

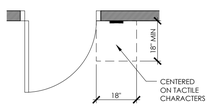


FIG. 703.3.11
LOCATION OF SIGNS AT DOORS

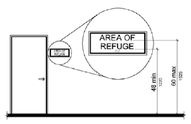


FIG. 703.4.5
HEIGHT OF TACTILE CHARACTERS ABOVE FINISH FLOOR OR GROUND

FIG. 703.4.4
POSITION OF BRAILLE

10 TACTILE SIGNS

SCALE: NOT TO SCALE

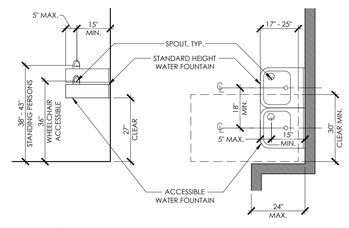


FIG. 602.5
DRINKING FOUNTAIN SPOUT LOCATION
(W/ LO CONFIGURATION SHOWN)

9 DRINKING FOUNTAIN

SCALE: NOT TO SCALE

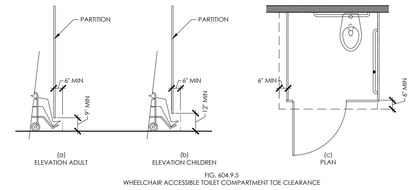
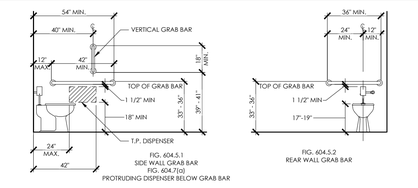


FIG. 604.9.5
WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT TOE CLEARANCE

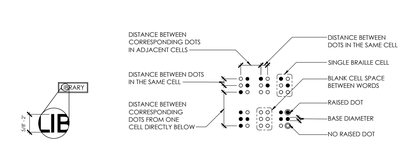
5 WHEELCHAIR TOE CLEARANCE

SCALE: NOT TO SCALE



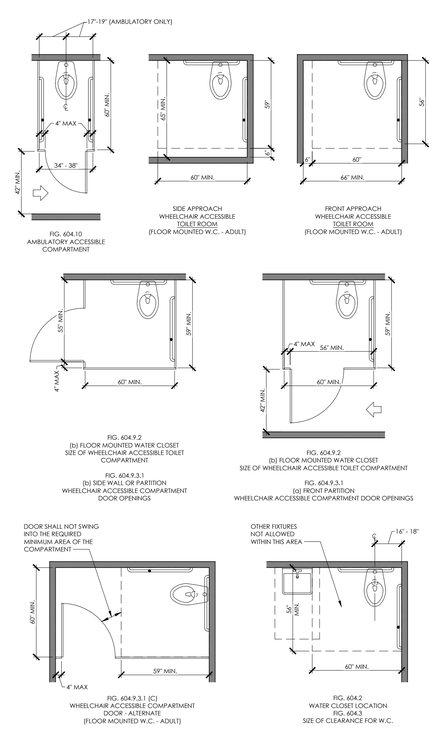
4 GRAB BAR & PROTRUDING DISPENSER @ WATER CLOSET

SCALE: NOT TO SCALE



3 HEIGHT OF RAISED CHARACTERS

SCALE: NOT TO SCALE



1 WATER CLOSET & TOILET COMPARTMENT

SCALE: NOT TO SCALE

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	2/6/24	PERMIT RESUBMITTAL
2		
3		
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12		

SEAL:

10697 REGISTERED ARCHITECT
DANIEL B GOALWIN
STATE OF WASHINGTON
EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

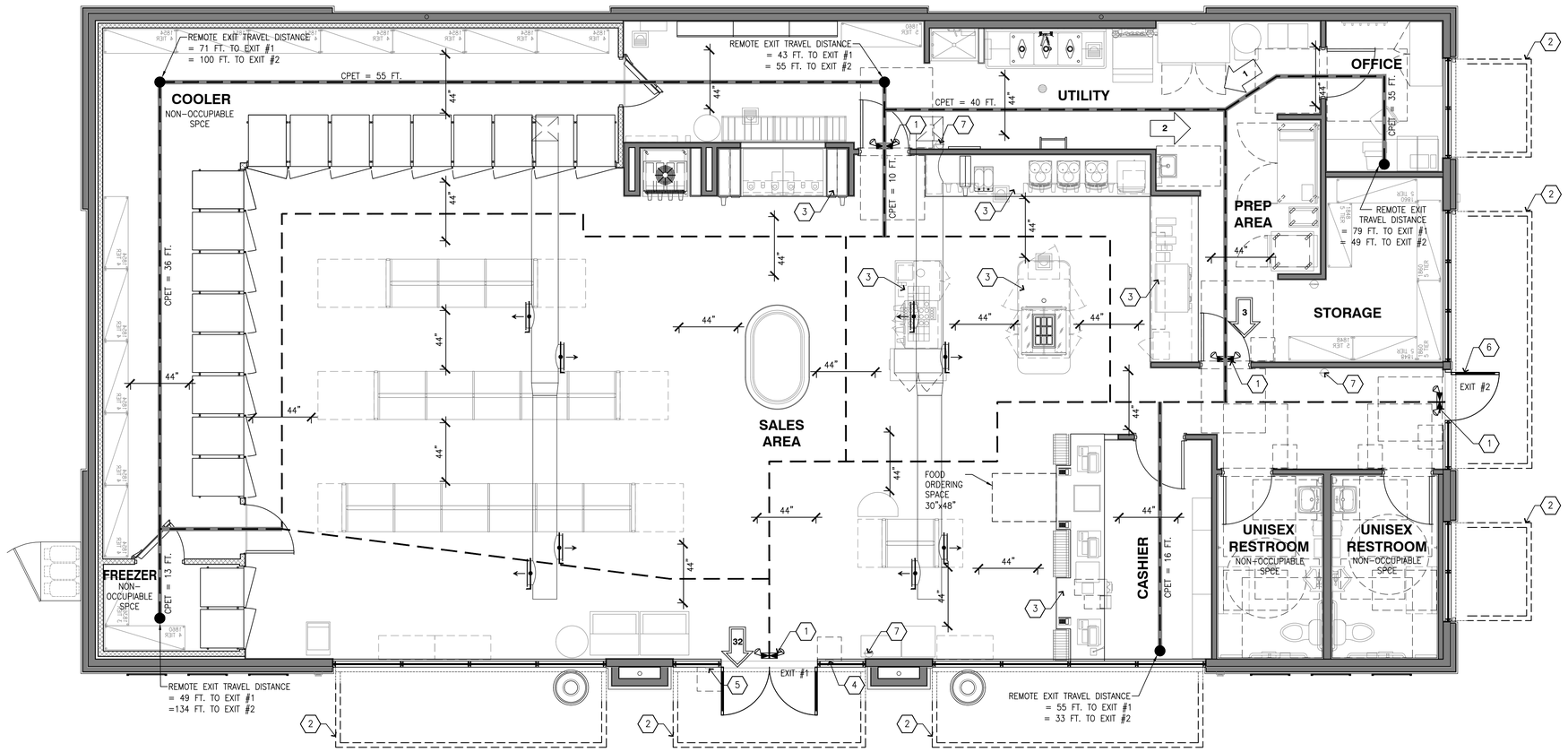
DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:

ACCESSIBILITY DETAILS

SHEET NO:

G1.2



01 — EGRESS/ACCESSIBILITY FLOOR PLAN
SCALE: 1/4"=1'-0"

EXIT REQUIREMENTS

1. EXIT SIGNS SHALL BE INTERNALLY OR EXTERNALLY ILLUMINATED.
2. EXIT SIGNS ILLUMINATED BY AN EXTERNAL SOURCE SHALL HAVE AN INTENSITY OF NOT LESS THAN 5 FOOT CANDLES.
3. INTERNALLY ILLUMINATED SIGNS SHALL BE LISTED AND LABELED AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTION AND CBC SECTION 2702.
4. EXIT SIGNS SHALL BE ILLUMINATED AT ALL TIMES.
5. EXIT SIGNS SHALL BE CONNECTED TO AN EMERGENCY POWER SYSTEM THAT WILL PROVIDE AN ILLUMINATION OF NOT LESS THAN 90 MIN. IN CASE OF PRIMARY POWER LOSS.
6. EGRESS DOORS SHALL BE READILY OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT. SEE 1008.1.8.3 FOR EXCEPTIONS.
7. DOOR HANDLES, LOCK AND OTHER OPERATING DEVICES SHALL BE INSTALLED AT A MIN. 34" AND A MAX. 48" ABOVE THE FINISHED FLOOR.
8. THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED
9. ALL EGRESS DOOR OPERATION SHALL ALSO COMPLY WITH SECTION 1008.1.8 – 1008.1.8.6.
10. THE MEANS OF EGRESS, INCLUDING THE EXIT DISCHARGE, SHALL BE ILLUMINATED AT ALL TIMES THE BUILDING SPACE SERVED BY THE MEANS OF EGRESS IS OCCUPIED.
11. THE MEANS OF EGRESS ILLUMINATION LEVEL SHALL NOT BE LESS THAN 1 FOOT–CANDLE AT THE WALKING SURFACE
12. THE POWER SUPPLY FOR MEANS OF EGRESS ILLUMINATION SHALL NORMALLY BE PROVIDED BY THE PREMISES' ELECTRICAL SUPPLY. IN THE EVENT OF POWER SUPPLY FAILURE, AN EMERGENCY ELECTRICAL SYSTEM SHALL AUTOMATICALLY ILLUMINATE THE FOLLOWING AREAS:
    a. AISLES AND UNENCLOSED EGRESS STAIRWAYS IN ROOMS AND SPACES THAT REQUIRE TWO OR MORE MEANS OF EGRESS
    b. CORRIDORS, EXIT ENCLOSURES AND EXIT PASSAGEWAYS IN BUILDINGS REQUIRED TO HAVE TWO OR MORE EXITS.
    c. EXTERIOR EGRESS COMPONENTS AT OTHER THAN THE LEVEL OF EXIT DISCHARGE UNTIL EXIT DISCHARGE IS ACCOMPLISHED FOR BUILDINGS REQUIRED TO HAVE TWO OR MORE EXITS.
    d. INTERIOR EXIT DISCHARGE ELEMENTS, AS PERMITTED IN SECTION 1024.1, IN BUILDINGS REQUIRED TO HAVE TWO OR MORE EXITS.
    e. EXTERIOR LANDINGS, AS REQUIRED BY SECTION 1008.1.5, FOR EXIT DISCHARGE DOORWAYS IN BUILDINGS REQUIRED TO HAVE TWO OR MORE EXITS.
13. THE EMERGENCY POWER SYSTEM SHALL PROVIDE POWER FOR A DURATION OF NOT LESS THAN 90 MINUTES AND SHALL CONSIST OF STORAGE BATTERIES, UNIT EQUIPMENT OR AN ON–SITE GENERATOR. THE INSTALLATION OF THE EMERGENCY POWER SYSTEM SHALL BE IN ACCORDANCE WITH SECTION 2702.
14. EMERGENCY LIGHTING FACILITIES SHALL BE ARRANGED TO PROVIDE INITIAL ILLUMINATION THAT IS AT LEAST AN AVERAGE OF 1 FOOT–CANDLE (11 LUX) AND A MINIMUM AT ANY POINT OF 0.1 FOOT–CANDLE (1 LUX) MEASURED ALONG THE PATH OF EGRESS AT FLOOR LEVEL. ILLUMINATION LEVELS SHALL BE PEMLITTED TO DECLINE TO 0.6 FOOT–CANDLE (6 LUX) AVERAGE AND A MINIMUM AT ANY POINT OF 0.06 FOOT–CANDLE (0.6 LUX) AT THE END OF THE EMERGENCY LIGHTING TIME DURATION. A MAXIMUM–TO–MINIMUM ILLUMINATION UNIFORMITY RATIO OF 40 TO 1 SHALL NOT BE EXCEEDED.

EMERGENCY EGRESS LIGHTING

ELECTRICAL CONTRACTOR SHALL VERIFY THE FOLLOWING PRIOR TO INSTALLING NEW EMERGENCY LIGHTING AND PROVIDE THIS INFORMATION ON THEIR PERMIT SUBMITTAL PLANS:
EMERGENCY LIGHTING SHALL BE ARRANGED TO PROVIDE AN INITIAL ILLUMINATION THAT IS AT LEAST AVERAGE OF 1 FOOT–CANDLE AND A MINIMUM AT ANY POINT OF 0.1 FOOT–CANDLE MEASURED ALONG THE PATH OF EGRESS AT FLOOR LEVEL. ILLUMINATION LEVELS SHALL BE PERMITTED TO DECLINE TO 0.6 FOOT–CANDLES AVERAGE AND A MINIMUM AT ANY POINT OF 0.06 FOOT–CANDLES AT THE END OF THE EMERGENCY LIGHTING TIME DURATION. A MAXIMUM–TO–MINIMUM ILLUMINATION UNIFORMITY RATIO OF 40:1 SHALL NOT BE EXCEEDED.
EMERGENCY POWER SYSTEM SHALL BE PROVIDED FOR A DURATION OF NOT LESS THAN 90 MINUTES AND SHALL CONSIST OF STORAGE BATTERIES, UNIT EQUIPMENT, OR AN ON–SITE GENERATOR.

CODE ANALYSIS:

IBC CHAPTER 2, OCCUPIABLE SPACE
A ROOM OR ENCLOSED SPACE DESIGNED FOR HUMAN OCCUPANCY IN WHICH THE INDIVIDUALS CONGREGATE FOR AMUSEMENT, EDUCATIONAL OR SIMILAR PURPOSES OR IN WHICH OCCUPANTS ARE ENLARGED IN LABOR.

IBC SECTION 504.1, BUILDING HEIGHT AND NUMBER OF STORIES
ALLOWABLE BUILDING HEIGHT AND NUMBER OF STORIES SHALL BE DETERMINED BASED ON THE TYPE OF CONSTRUCTION, OCCUPANCY CLASSIFICATION AND AUTOMATIC SPRINKLERS.

* ASSUME AN OCCUPANCY WITH GROUP "M", MERCANTILE, WITH TYPE VB CONSTRUCTION AND NON–SPRINKLERED

IBC TABLE 504.3, ALLOWABLE BUILDING HEIGHT
MAXIMUM ALLOWABLE HEIGHT, GROUP M: 40 FEET

IBC TABLE 504.4, ALLOWABLE STORIES
MAXIMUM NUMBER OF STORIES, GROUP M: 1 STORY

IBC SECTION 506.1, BUILDING AREA
ALLOWABLE BUILDING AREA SHALL BE DETERMINED BASED ON THE TYPE OF CONSTRUCTION, OCCUPANCY CLASSIFICATION, AUTOMATIC SPRINKLERS AND THE AMOUNT OF BUILDING FRONTAGE ON A PUBLIC WAY.

IBC TABLE 506.2, ALLOWABLE BUILDING AREA
MAXIMUM ALLOWABLE AREA, GROUP M: 9,000 SQUARE FEET

* TOTAL PROPOSED BUILDING AREA: 3,216 SQUARE FEET

IBC SECTION 602.5, TYPE V
TYPE V CONSTRUCTION IS THAT TYPE OF CONSTRUCTION IN WHICH THE STRUCTURAL ELEMENTS, EXTERIOR WALLS AND INTERIOR WALLS ARE OF ANY MATERIALS PERMITTED BY THIS CODE.

TABLE 601, FIRE RESISTANCE RATING FOR BUILDING ELEMENTS
FOR TYPE V–B CONSTRUCTION IN HOURS
PRIMARY STRUCTURAL FRAME: 0
EXTERIOR BEARING WALLS: 0
INTERIOR BEARING WALLS: 0
EXTERIOR NON–BEARING WALLS: 0
INTERIOR NON–BEARING WALLS: 0
FLOOR CONSTRUCTION: 0
ROOF CONSTRUCTION: 0

IBC TABLE 1004.1.2, FLOOR AREAS PER OCCUPANT
SEE PLAN ABOVE FOR OCCUPANCY CALCULATIONS.

IBC SECTION 1006.2.1, EGRESS BASED ON OCCUPANT LOAD
TWO EXITS OR EXIT ACCESS DOORWAYS SHALL BE PROVIDED WHERE THE DESIGN OCCUPANT LOAD OR COMMON PATH OF EGRESS TRAVEL EXCEEDS THE VALUES IN TABLE 1006.2.1

IBC TABLE 1006.2.1, SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY
A SPACE IN AN "M" OCCUPANCY WITH AN OCCUPANT LOAD OF 49 OR LESS AND A COMMON PATH OF EGRESS TRAVEL OF 75 FEET IS ALLOWED TO HAVE ONLY ONE EXIT.

* THE TOTAL OCCUPANT LOAD FOR THE C–STORE IS 32 OCCUPANTS.
THE COMMON PATH OF EGRESS TRAVEL IS LESS THAN 75 FEET.
ONE EXIT IS ALLOWED

CODE ANALYSIS cont.:

IBC SECTION 1008.2.1, ILLUMINATION LEVEL UNDER NORMAL POWER
THE MEANS OF ILLUMINATION LEVEL SHALL NOT BE LESS THAN 1 FOOTCANDLE AT THE WALKING SURFACE.

IBC SECTION 1008.3.1, EMERGENCY POWER FOR ILLUMINATION
IN THE EVENT OF POWER FAILURE, AN EMERGENCY ELECTRICAL SYSTEM SHALL ILLUMINATE THE FOLLOWING AREAS:
AISLES, CORRIDORS, EXIT ACCESS STAIRWAYS AND RAMPS.

IBC SECTION 1009.1, ACCESSIBLE MEANS OF EGRESS
ACCESSIBLE SPACES SHALL BE PROVIDED WITH NOT LESS THAN ONE ACCESSIBLE MEANS OF EGRESS. WHERE MORE THAN ONE MEANS OF EGRESS ARE REQUIRED, EACH ACCESSIBLE PORTION OF THE SPACE SHALL HAVE NOT LESS THAN TWO ACCESSIBLE MEANS OF EGRESS.

IBC SECTION 1010.1.1, SIZE OF DOORS
THE MINIMUM WIDTH OF EACH DOOR OPENING SHALL BE SUFFICIENT FOR THE OCCUPANT LOAD AND SHALL PROVIDE A CLEAR WIDTH OF 32 INCHES MINIMUM.

IBC SECTION 1010.1.2.1, DIRECTION OF SWING
DOORS SHALL SWING IN THE DIRECTION OF TRAVEL WHERE SERVING A ROOM OR AREA CONTAINING AN OCCUPANT LOAD OF 50 OR MORE PERSONS.

IBC SECTION 1010.1.9, DOOR OPERATIONS
EGRESS DOORS SHALL BE READILY OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.

IBC SECTION 1013.1, EXIT SIGNS, WHERE REQUIRED
EXITS AND EXIT ACCESS DOORS SHALL BE MARKED BY AN APPROVED EXIT SIGN READILY VISIBLE FROM ANY DIRECTION OF TRAVEL.
EXCEPTION 1: EXIT SIGNS ARE NOT REQUIRED IN ROOMS OR AREAS THAT REQUIRE ONLY ONE EXIT OR EXIT ACCESS.

IBC SECTION 1013.4, RAISED CHARACTER AND BRAILLE EXIT SIGNS
A SIGN STATING "EXIT" IN RAISED CHARACTERS AND BRAILLE AND COMPLYING WITH ICC ANSI A117.1 SHALL BE PROVIDED ADJACENT TO EACH EXIT DISCHARGE DOOR.

IBC TABLE 1017.2, EXIT ACCESS TRAVEL DISTANCE

OCCUPANCY	WITHOUT SPRINKLER
M	200 FEET

IBC SECTION 1103.2.9 EQUIPMENT SPACES
SPACES FREQUENTED ONLY BY SERVICE PERSONNEL FOR MAINTENANCE, REPAIR OR OCCASSIONAL MONITORING OF EQUIPMENT ARE NOT REQUIRED TO COMPLY WITH THIS CHAPTER

IBC SECTION 1103.2.14 WALK–IN COOLERS & FREEZERS
WALK–IN COOLERS AND FREEZERS INTENDED FOR EMPLOYEE USE ONLY ARE NOT REQUIRED TO COMPLY WITH THIS CHAPTER

IBC SECTION 1104.1 SITE ARRIVAL ROUTE
ACCESSIBLE ROUTES WITHIN THE SITE SHALL BE PROVIDED FROM PUBLIC TRANSPORTATION STOPS, ACCESSIBLE PARKING, ACCESSIBLE PASSENGER LOADING ZONES, AND PUBLIC STREETS OR SIDEWALKS TO THE ACCESSIBLE BUILDING ENTRANCE.

EXCEPTION: AN ACCESSIBLE ROUTE IS NOT REQUIRED BETWEEN ACCESSIBLE BUILDINGS, FACILITIES, ELEMENTS AND ACCESSIBLE SPACES THAT HAVE AS THE ONLY MEANS OF ACCESS BETWEEN THEM, A VEHICULAR WAY NOT PROVIDING FOR PEDESTRIAN ACCESS.

CODE ANALYSIS cont.:

IBC SECTION 1104.2, WITHIN A SITE
AT LEAST ONE ACCESSIBLE ROUTE SHALL CONNECT ACCESSIBLE BUILDINGS, FACILITIES, ELEMENTS AND ACCESSIBLE SPACES THAT ARE ON THE SAME SITE.
EXCEPTION: AN ACCESSIBLE ROUTE IS NOT REQUIRED BETWEEN ACCESSIBLE BUILDINGS, FACILITIES, ELEMENTS AND ACCESSIBLE SPACES THAT HAVE AS THE ONLY MEANS OF ACCESS BETWEEN THEM, A VEHICULAR WAY NOT PROVIDING FOR PEDESTRIAN ACCESS.

IBC TABLE 2902.1, MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES

OCCUPANCY	WATER CLOSETS		LAVATORIES	
	MALE	FEMALE	MALE	FEMALE
M	1/500	1/500	1/750	1/750

OCCUPANTS:
M 32 OCCUPANTS = 16 MALE AND 16 FEMALE

TOTAL REQUIRED PLUMBING FIXTURES EACH SEX:
MALE = 1 WATER CLOSET AND 1 LAV
FEMALE = 1 WATER CLOSET AND 1 LAV

PLUMBING FIXTURES PROVIDED:
MALE = 1 WATER CLOSET AND 1 LAV
FEMALE = 1 WATER CLOSET AND 1 LAV

IFC 505.1, ADDRESS IDENTIFICATION
NEW BUILDINGS SHALL BE PROVIDED WITH APPROVED ADDRESS IDENTIFICATION. IT SHALL BE LEGIBLE AND PLACED IN A POSITION THAT IS VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY. CHARACTERS SHALL CONTRAST WITH THEIR BACKGROUND, BE ARABIC NUMBERS (NOT SPELLED OUT) AND NOT LESS THAN 4" HIGH WITH A MINIMUM STROKE OF 1/2". WHERE REQUIRED BY THE FIRE OFFICIAL, ADDRESS IDENTIFICATION SHALL BE PROVIDED IN ADDITIONAL APPROVED LOCATIONS. ADDRESS IDENTIFICATION SHALL BE MAINTAINED.

IFC 906, PORTABLE FIRE EXTINGUISHERS
PORTABLE FIRE EXTINGUISHERS SHALL BE PROVIDED IN ACCORDANCE WITH IFC 906 AND NFPA 10, WITH A MAXIMUM TRAVEL DISTANCE OF 75 FEET.

IFC 1008.3.3, EMERGENCY POWER FOR ROOMS AND SPACES
IN THE EVENT OF POWER SUPPLY FAILURE, AN EMERGENCY ELECGTRICAL SYSTEM SHALL AUTOMATICALLY ILLUMINATE ELECTRICAL EQUIPMENT ROOMS, FIRE COMMAND CENTERS, FIRE PUMP ROOMS, GENERATOR ROOMS AND PUBLIC RESTROOMS GREATER THAN 300 SQUARE FEET.

IFC 1010.1.9.4, LOCKS AND LATCHES
LOCKS AND LATCHES ARE PERMITTED TO PREVENT OPERATION OF DOORS IN GROUP B AND M OCCUPANCIES. THE MAIN DOOR(S) ARE PERMITTED TO BE EQUIPPED WITH KEY–OPERATED LOCKING DEVISES FROM THE EGRESS SIDE PROVIDED:
* THE LOCKING DEVISE IS READILY DISTINGUISHABLE AS LOCKED
* A READILY VISABLE SIGN IS POSTED ON THE EGRESS SIDE STATING "THIS DOOR TO REMAIN UNLOCKED WHEN SPACE IS OCCUPIED"
SEE IFC SECTION 1010.1.9.4 FOR ADDITIONAL REQUIREMENTS.

IFC 6109.15, LP GAS CYLINDER FOR RESALE
IN ADDITION TO OTHER APPLICABLE REQUIREMENTS, FACILITIES OPERATING LP–GAS CYLINDER EXCHANGE STATIONS THAT ARE OPEN TO THE PUBLIC SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
1. CYLINDERS SHALL BE SECURED IN A LOCKABLE, VENTILATED METAL CABINET OR OTHER APPROVED ENCLOSURE
2. CYLINDERS SHALL BE AVAILABLE ONLY BY AUTHORIZED PERSONNEL OR BY USE OF AN AUTOMATIC EXCHANGE SYSTEM IN ACCORDANCE WITH IFC 6109.15.1.
3. A SIGN SHALL BE POSTED ON THE ENTRY DOOR OF THE BUSINESS STATING "DO NOT BRING LP GAS CYLINDERS INTO THE BUILDING"
4. AN EMERGENCY CONTACT INFORMATION SIGN SHALL BE POSTED WITHIN 10 FEET OF THE CYLINDER STORAGE CABINET. CONTENT, LETTERING, SIZE, COLOR AND LOCATION SHALL BE AS REQUIRED BY THE CODE OFFICIAL.

EXITING NOTES

CONSTRUCTION TYPE: V–B, NON–SPRINKLED

USE GROUP: M (CONVENIENCE STORE)
ACTUAL GROSS AREA: 3,349 S.F.

OCCUPANCY AND EGRESS:

CONVENIENCE STORE

SEE OCCUPANCY LOAD CALCULATION ON THIS SHEET

EXITS REQUIRED: 1
EXITS PROVIDED: 2

OVERALL DIAGONAL DISTANCE = 93'–0"
ONE–HALF DISTANCE = 46'–6"
PROVIDED DISTANCE = 48'–3" (REQUIREMENTS MET)

CBC 1017 – EXIT ACCESS TRAVEL DISTANCE = 200' MAX.
REFER TO PLAN FOR DISTANCES (REQUIREMENTS MET)

CBC 1018.4 – COMMON PATH OF EGRESS TRAVEL (CPET) = 75' MAX.
REFER TO PLAN FOR DISTANCES (REQUIREMENTS MET)

CBC 11B–403.5.1 – ACCESSIBLE ROUTE CLEAR WIDTH
AISLE WIDTH SERVING ELEMENTS ON ONE SIDE = 36" MIN.
AISLE WIDTH SERVING ELEMENTS ON BOTH SIDES = 44" MIN.
REFER TO PLAN FOR CLEAR WIDTHS (REQUIREMENTS MET)

LEGEND

ROUTE FROM MOST REMOTE POINT WITHIN SPACE TO AN EXIT

COMMON PATH OF EGRESS TRAVEL (CPET) WITHIN OVERALL TRAVEL DISTANCE FROM REMOTE LOCATION TO EXIT

MOST REMOTE POINT WITHIN THIS AREA

OCCUPANCY LOAD

(M OCCUPANCY)

SALES – 1,906 S.F.(1906/60)	=	32
OFFICE – 69 S.F. (69/100)	=	1
RESTROOMS – 172 S.F. (EXEMPT)	=	0
STORAGE – 101 S.F. (101/300)	=	1
UTILITY – 254 S.F. (254/200)	=	2
PREP AREA – 206 S.F. (206/200)	=	2
COOLER/FREEZER – 530 S.F. (EXEMPT)	=	0
FOOD ORDERING AREA – 10 S.F. (10/5 NET)	=	2
INTERIOR WALLS– 111 S.F. (EXEMPT)	=	0
TOTAL (NET): 3,238 S.F.	=	40 OCCUPANTS

TOTAL (GROSS): 3,349 S.F.

EXITS REQUIRED: 1
EXITS PROVIDED: 2

CODE PLAN KEYED NOTES

1. EMERGENCY EXIT LIGHTING
2. EXTERIOR AWNING OVERHEAD
3. 34" A.F.F. MAXIMUM COUNTER HEIGHT, SEE INTERIOR ELEVATIONS
4. RAISED BRAILLE EXIT SIGN
5. INTERNATIONAL SYMBOL OF ACCESSIBILITY
6. EXIT DOOR SHALL BE READILY OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT. NO SPECIAL FEATURES SHOULD ADDED THAT WOULD AFFECT THE EXITING OPERATION
7. FIRE EXTINGUISHER

CLIENT:
bp
ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	2/6/24	PERMIT RESUBMITTAL
2		
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5		
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7		
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10		
11		
12		

SEAL:
10697 REGISTERED ARCHITECT
DANIEL B COALWIN
STATE OF WASHINGTON
EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

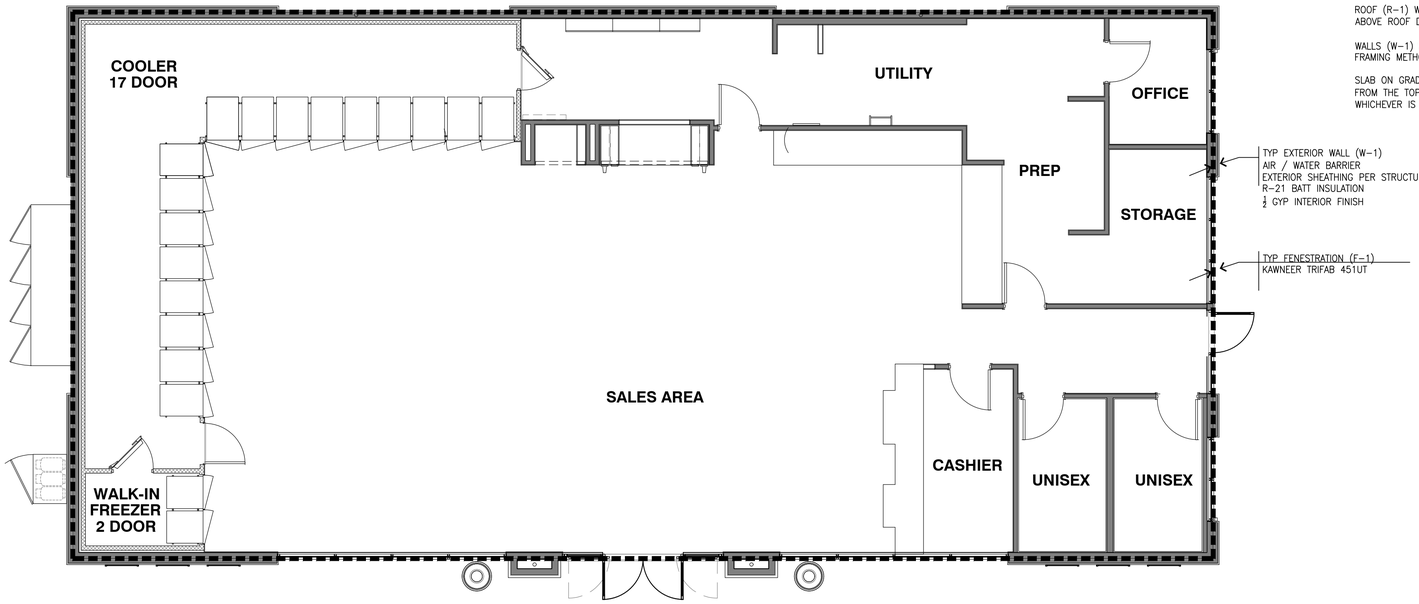
SITE ADDRESS:
1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

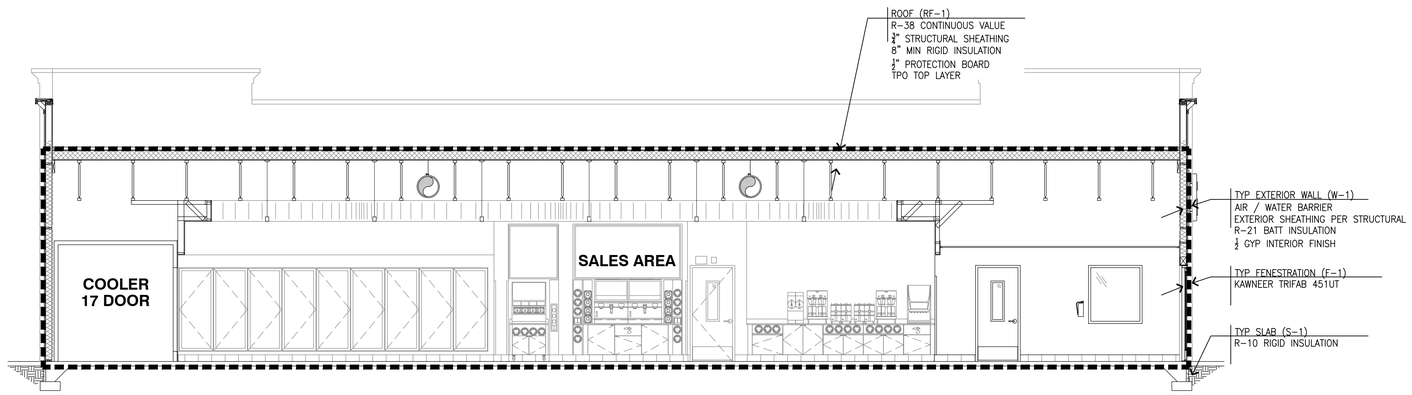
DESIGNED BY:	ALLIANCE ZADM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
ACCESSIBILITY FLOOR PLAN

SHEET NO:
G1.3



01 / – **THERMAL ENVELOPE PLAN**
SCALE: 3/16"=1'-0"



02 / G2.1 **THERMAL ENVELOPE SECTION**
SCALE: 3/16"=1'-0"

GENERAL NOTES (cont.)

PATH:

ENERGY CODE COMPLIANCE PATH IS COMPONENT PERFORMANCE

ENVELOPE SUMMARY:

ROOF (R-1) WILL HAVE CONTINUOUS MINIMUM 8" RIGID INSULATION ABOVE ROOF DECK TO MAINTAIN A CONTINUOUS R-VALUE OF 38

WALLS (W-1) WILL HAVE R-21 ASSEMBLY WITH 5 ¼" BATT INSULATION. FRAMING METHOD IS STANDARD FRAMING

SLAB ON GRADE (S-1) WILL HAVE R-10 VERTICAL RIGID INSULATION FROM THE TOP OF SLAB TO TOP OF FOOTING, OR 24" DOWN, WHICHEVER IS LESS

GENERAL NOTES

1. INSULATION IDENTIFICATION MARK SHALL BE APPLIED TO ALL INSULATION AND READILY OBSERVABLE. SEE WALL TYPE SCHEDULE FOR EXTERIOR WALL INSULATION.
2. ALL EXTERIOR FENESTRATION PRODUCTS ARE TO BE LABELED WITH NFRC U-FACTOR, SHGC, VT AND LEAKAGE RATING.
3. WHERE TWO OR MORE LAYERS OF RIGID INSULATION WILL BE USED, EDGE JOINTS BETWEEN LAYERS MUST BE STAGGERED.
4. ALL WOOD FRAMING AT THERMAL ENVELOPE SHALL BE STANDARD FRAMING.
5. EQUIPMENT CURBS THAT INTERRUPT THE ABOVE ROOF INSULATION SHALL BE INSULATED TO A MINIMUM OF R-13 IN ALL LOCATIONS WHERE THERE ARE NOT ROOF OPENINGS FOR DUCTWORK. THE SPACE BETWEEN THE ROOF OPENING AND THE DUCTWORK SHALL BE SEALED TO MAINTAIN THE BUILDING AIR BARRIER.
6. SEE A3.# SECTIONS AND A4.# DETAILS FOR LOCATIONS AND THICKNESS OF INSULATION. ALL INSULATION SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS. ROOF INSULATION, WHEN TAPERED WILL MAINTAIN 8" MINIMUM THICKNESS.
7. ALL VERTICAL WINDOWS WITHIN THE THERMAL ENVELOPE SHALL HAVE AN NFRC U-FACTOR OF 0.38 MINIMUM AND A SHGC OF 0.38 MINIMUM.
8. WINDOWS TO THE SOUTH HAVE PERMANENT SHADING DEVICES WITH A PF OF 0.46.
9. ALL GLAZED STOREFRONT DOORS WITHIN THE THERMAL ENVELOPE SHALL HAVE AN NFRC U-FACTOR OF 0.60 MINIMUM AND A SHGC OF 0.38 MINIMUM.
10. ALL RELIEF, OUTSIDE AIR INTAKE AND EXHAUST OPENINGS SHALL BE PROVIDED WITH DAMPERS IN ACCORDANCE WITH MECHANICAL SECTION C403.7.8.
11. RECESSED LIGHTING FIXTURES SHALL COMPLY WITH C402.5.8. WHERE OBJECTS PENETRATE THE AIR BARRIER, MAINTAIN THE INTEGRITY OF THE AIR BARRIER.
12. RECESSED LIGHTING INSTALLED IN THE BUILDING ENVELOPE SHALL BE IC RATED, HAVE AN AIR LEAKAGE RATE OF NOT MORE THAN 2.0 CFM AND CAULKED OR GASKETED.
13. A CONTINUOUS AIR BARRIER SHALL BE PROVIDED THROUGHOUT THE BUILDING THERMAL ENVELOPE PER WSEC C402.5.1, AIR BARRIERS.
14. PER WSEC 402.5.1.2, BUILDING TEST, THE COMPLETED BUILDING SHALL BE TESTED IN ACCORDANCE WITH ASTM E779, ASTM E1827 OR AN EQUIVALENT METHOD APPROVED BY THE CODE OFFICIAL. TARGET LEAKAGE RATE IS 0.25 CFM/FT2.
15. THE AIR BARRIER SHALL BE CONTINUOUS FOR ALL ASSEMBLIES THAT ARE WITHIN THE THERMAL ENVELOPE OF THE BUILDING AND ACROSS JOINTS AND ASSEMBLIES.
16. JOINTS AND SEAMS SHALL BE SEALED.
17. PENETRATIONS SHALL BE CAULKED OR GASKETED.
18. SUBMIT BUILDING ENCLOSURE AIR LEAKAGE TEST REPORTS TO THE LOCAL JURISDICTION AND OWNER;
    - 18.1. IF THE INITIAL TEST RESULTS EXCEED 0.25 CFM/FT2 INDICATE THAT INSPECTION AND ALL PRACTICAL CORRECTIVE ACTIONS BE COMPLETED AND DOCUMENTED IN THE AIR LEAKAGE REPORT.
    - 18.2. IF INITIAL TEST RESULT EXCEEDS 0.40 CFM/FT2, INDICATE THAT CORRECTIVE ACTIONS SHALL ALSO INCLUDE TRE-TESTING.
    - 18.3. INDICATE THAT CORRECTIVE MEASURES AND RETESTING MUST BE REPORTED UNTIL THE TEST RESULT IS 0.40 CFM/FT2 OR LESS
    - 18.4. INCLUDE AIR BARRIER TEST REPORT IN PROJECT CLOSE OUT DOCUMENTATION PROVIDED TO BUILDING OWNER.
19. PROJECT CLOSEOUT DOCUMENTATION IS REQUIRED INCLUDING APPLICABLE CALCULATIONS, WSEC ENVELOPE COMPLIANCE REPORTS, AND FENESTRATION NFRC RATING CERTIFICATES.
20. ENERGY EFFICIENCY PACKAGE CREDITS PER WSEC ARE TO BE ACHIEVED PER MECHANICAL AND ELECTRICAL.
21. PERIMETER FOUNDATION STEM WALLS TO HAVE R-10 RIGID INSULATION/FROM T.O. SLAB DOWN 24" OR TO TO T.O. FOOTING, WHICHEVER IS LESS

LEGEND

AIR BARRIER TO MEET WSEC C402.5.1 AT THERMAL ENVELOPE

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen
Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	2/6/24	PERMIT RESUBMITTAL
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SEAL:

10697 REGISTERED ARCHITECT
DANIEL B GOALWIN
STATE OF WASHINGTON
EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	ALLIANCE ZADM:
CHECKED BY:	BP REPM:
DRAWN BY: DJ	ALLIANCE FM:
VERSION: - -	PROJECT NO: 21730

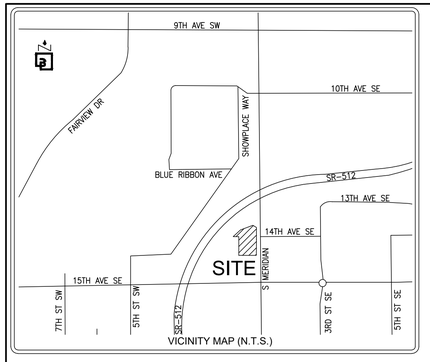
DRAWING TITLE:

C-STORE ENERGY CODE PLAN

SHEET NO:

G1.6

ALTA/NSPS LAND TITLE SURVEY



VICINITY MAP (N.T.S.)

SURVEY INFORMATION:

HORIZONTAL DATUM – BASIS OF BEARINGS:
NAD 83/2011 WASHINGTON STATE COORDINATE SYSTEM, SOUTH ZONE, ESTABLISHED BY GPS OBSERVATION UTILIZING THE WASHINGTON STATE REFERENCE NETWORK. THE BASIS OF BEARINGS IS N 00°33'46"E BETWEEN THE FOUND 2" BRASS DISK AT THE INTERSECTION OF S. MERIDIAN ST. & 15TH AVE SW AND THE FOUND 2" IRON PIPE W/TACK IN MONUMENT CASE AT THE INTERSECTION OS S. MERIDIAN ST. & THE ON/OFF RAMP TO SR 512.

VERTICAL DATUM
VERTICAL DATUM FOR THIS SURVEY IS NAVD88 ESTABLISHED FROM WSDOT MONUMENT ID NO. 247. ELEVATION = 80.449' (NAVD88)

LOT AREA
52,078± SF (1.20± AC)

ADDRESS
1402 S. MERIDIAN, PUYALLUP, WA 98371

TAX PARCEL NUMBER
773000-028-1 & 773000-028-8: TITLE PARCEL A
773000-003-1 & 773000-002-1: TITLE PARCEL B

REFERENCE SURVEYS:
1. PIERCE COUNTY SHORT PLAT OF MERIDIAN CENTER – AFN 77-315 (1977)
2. PLAT OF SOURWINE'S ACRE LOTS – VOL 8 PLATS, PAGE 10 (1905)
3. PIERCE COUNTY SHORT PLAT – AFN 8706010381 (1987)
4. WSDOT SR 512 96TH ST TO JCT. SR 167, DATED MAY 23, 1968

DATE OF SURVEY:
THIS SURVEY REPRESENTS VISIBLE PHYSICAL IMPROVEMENT CONDITIONS EXISTING ON MARCH 22, 2022 & JULY 14, 2023. ALL SURVEY CONTROL INDICATED AS "FOUND" WAS RECOVERED FOR THIS PROJECT IN MARCH OF 2022 & JULY OF 2023.

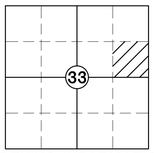
FLOOD INFORMATION:
FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) INFORMATION: FIRM (FLOOD INSURANCE RATE MAP) MAP NO. 53053C0341E PANEL 341 OF 1375, DATED MARCH 7, 2017. THE SUBJECT PROPERTY IS IN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

ZONING INFORMATION:
(A ZONING REPORT WAS NOT FURNISHED FOR THIS SITE)

SURVEYOR'S NOTES:

- ALL DISTANCES SHOWN HEREON ARE GROUND MEASUREMENTS IN U.S. SURVEY FEET.
- THE BOUNDARY CORNERS AND LINES DEPICTED ON THIS MAP REPRESENT DEED LINES ONLY, AND DON'T PURPORT TO SHOW OWNERSHIP LINES THAT MAY OTHERWISE BE DETERMINED BY A COURT OF LAW. NO GUARANTEE OF OWNERSHIP IS EXPRESSED OR IMPLIED.
- UNDERGROUND UTILITIES AND FEATURES DEPICTED HEREON ARE BASED ON FIELD OBSERVATION, MARKINGS, DEVELOPMENT PLANS, AND/OR AVAILABLE RECORD DOCUMENTS ONLY. THE TRUE LOCATION, NATURE AND/OR EXISTENCE OF BELOW GROUND FEATURES, DETECTED OR UNDETECTED, SHOULD BE VERIFIED.
- THE LEGAL DESCRIPTION AND SPECIAL EXCEPTIONS SHOWN HEREON ARE PER THE ABOVE REFERENCED TITLE REPORT UNLESS OTHERWISE NOTED.
- THIS SURVEY HAS DEPICTED ALL VISIBLE OCCUPATIONAL INDICATORS (IE. FENCE LINES, BUILDINGS, WALLS, ETC. – SEE MAP FOR PARTICULARS) PER W.A.C. 332-130. LINES OF OCCUPATION, AS DEPICTED, MAY INDICATE AREAS OF POTENTIAL CLAIMS OF UNWRITTEN OWNERSHIP. THIS SURVEY HAS ONLY DEPICTED THE RELATIONSHIP BETWEEN LINES OF OCCUPATION AND DEEDED LINES OF RECORD. NO RESOLUTION OF OWNERSHIP BASED ON UNWRITTEN RIGHTS HAS BEEN MADE BY THIS SURVEY OR BY ANY PERSONNEL OF BARGHAUSEN CONSULTING ENGINEERS, INC.
- THIS IS A FIELD TRAVERSE SURVEY. TOPCON GT AND TOPCON HYPER HR GPS AND DELL TABLET DATA COLLECTOR WERE USED TO MEASURE THE ANGULAR AND DISTANCE RELATIONSHIPS BETWEEN THE CONTROLLING MONUMENTATION AS SHOWN. CLOSURE RATIOS OF THE TRAVERSE MET OR EXCEEDED THOSE SPECIFIED IN W.A.C. 332-130-090. ALL INSTRUMENTS AND EQUIPMENT HAVE BEEN MAINTAINED IN ADJUSTMENT ACCORDING TO MANUFACTURERS' SPECIFICATIONS AND USED BY APPROPRIATELY TRAINED PERSONNEL.
- THIS SURVEY MEETS OR EXCEEDS THE "RELATIVE POSITIONAL PRECISION" REQUIREMENTS SET FORTH IN THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS IN SECTION 3(E).
- THE RECORD DESCRIPTION FOR THE SUBJECT PROPERTY MATHEMATICALLY CLOSES.
- ELEMENTS AND FEATURES DEPICTED HEREON SATISFY THE REQUIREMENTS STATED WITHIN W.A.C. 332-130-145 FOR TOPOGRAPHIC MAPS, INCLUDING THE FOLLOWING: THE SOURCE OF THE CONTOURS SHOWN HEREON ARE BASED UPON DIRECT FIELD OBSERVATIONS. THE CONTOUR ACCURACY IS PER NATIONAL MAPPING STANDARDS, ONE HALF OF THE CONTOUR INTERVAL (1'). THE PURPOSE OF THIS SURVEY IS TO MAP THE CURRENT CONDITIONS FOR ENGINEERING DESIGN.
- BARGHAUSEN CONSULTING ENGINEERS, INC. SURVEY CREWS DETECTED NO OBSERVABLE EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS ON THE SUBJECT PROPERTY.
- BARGHAUSEN CONSULTING ENGINEERS, INC. SURVEY CREWS DETECTED NO OBSERVABLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.
- THERE IS NO VISIBLE EVIDENCE OF ANY CEMETERIES OR BURIAL GROUNDS.
- THERE IS EVIDENCE OF PHYSICAL ACCESS TO PUBLIC RIGHT-OF-WAY.

TWP. 20N R.4E



INDEXING INFORMATION
N.T.S.

TITLE INFORMATION:

TITLE COMMITMENT:
ALL TITLE INFORMATION SHOWN ON THIS MAP HAS BEEN EXTRACTED FROM STEWART TITLE GUARANTY COMPANY COMMITMENT NO. 21000200719, DATED JULY 29, 2021 AT 8:00 AM. INCLUDED ARE APPURTENANT EASEMENTS AND ADJOINING DEEDS FOR UNPLATTED LOTS, IF ANY. IN PREPARING THIS MAP, BARGHAUSEN CONSULTING ENGINEERS, INC. HAS CONDUCTED NO INDEPENDENT TITLE SEARCH NOR IS BARGHAUSEN CONSULTING ENGINEERS, INC. AWARE OF ANY TITLE ISSUES AFFECTING THE SURVEYED PROPERTY OTHER THAN THOSE SHOWN ON THE MAP AND DISCLOSED BY SAID COMMITMENT. BARGHAUSEN CONSULTING ENGINEERS, INC. HAS RELIED WHOLLY ON SAID TITLE COMPANY'S REPRESENTATIONS OF THE TITLE'S CONDITION TO PREPARE THIS SURVEY AND THEREFORE BARGHAUSEN CONSULTING ENGINEERS, INC. QUALIFIES THE MAP'S ACCURACY AND COMPLETENESS TO THAT EXTENT.

LEGAL DESCRIPTION
(PER ABOVE REFERENCED TITLE REPORT)
PARCEL A: (773000-028-1 & 773000-028-8)
LOT 1 AND THE NORTH 15 FEET OF THE EAST 178.33 FEET OF "COMMON ACCESS TRACT A", OF PIERCE COUNTY SHORT PLAT RECORDED UNDER RECORDING NO. 77-315, RECORDS OF PIERCE COUNTY WASHINGTON, FORMERLY BEING DESCRIBED AS THE NORTH 161.5 FEET OF THE WEST 178.33 FEET OF THE EAST 188.33 FEET OF LOT 20, SOURWINE'S ACRE LOTS, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 8 OF PLATS, PAGE 10, RECORDS OF PIERCE COUNTY, WASHINGTON;
TOGETHER WITH THAT PORTION OF 14TH AVENUE SW, VACATED BY ORDINANCE NO. 2304 ABUTTING THEREON AND ATTACHED THERETO, RECORDED UNDER RECORDING NO. 9206040385.
PARCEL A1:
RIGHTS TO USE THAT PORTION OF THE WITHIN DESCRIBED PROPERTY LYING WITHIN COMMON ACCESS TRACT "A" OF SIDE SHORT PLAT, FOR INGRESS, EGRESS, AND INSTALLATION AND MAINTENANCE OF UTILITIES, AS SET FORTH AND DELINEATED ON PIERCE COUNTY SHORT PLAT NO. 77-315;
EXCEPT ANY PORTION LYING WITHIN PARCEL A ABOVE.
PARCEL A2:
AN EASEMENT FOR INGRESS AND EGRESS AS SET FORTH IN DOCUMENTS ENTITLED "STATUTORY WARRANTY DEED" AS RECORDED UNDER RECORDING NUMBERS 2741876 AND 2792268.
PARCEL B: (773000-003-1 & 773000-002-1)
LOT 2, SOURWINE'S ACRE LOTS, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 8 OF PLATS, PAGE 10, RECORDS OF PIERCE COUNTY, WASHINGTON;
EXCEPT THAT PORTION LYING WITHIN STATE HIGHWAY NO. SR-512, 96TH STREET TO JUNCTION SR-167;
TOGETHER WITH THAT PORTION OF 14TH AVENUE SW, VACATED BY ORDINANCE NO. 2304 ABUTTING THEREON AND ATTACHED THERETO, RECORDED UNDER RECORDING NO. 9206040385.
SITUATE IN THE COUNTY OF PIERCE, STATE OF WASHINGTON.

SPECIAL EXCEPTIONS:
(PER ABOVE REFERENCED TITLE REPORT)

ITEMS 1 THOUGH 18 ARE NOT SURVEY RELATED.

19. TEMPORARY RIGHT, PERMIT, LICENSE AND EASEMENT TO USE AND OCCUPY A PORTION OF SAID LOT 20 FOR THE PURPOSE OF CONSTRUCTING HIGHWAY SLOPES AND OPERATING ALL NECESSARY MACHINERY AND EQUIPMENT THEREON AT ANY AND ALL TIMES UNTIL COMPLETION OF CONSTRUCTION FOR STATE RAD NO. 512 AS APPROPRIATED BY THE STATE OF WASHINGTON IN PIERCE COUNTY SUPERIOR COURT CAUSE NO. 198127. AFTER COMPLETION OF CONSTRUCTION, ALL RIGHTS OF EASEMENT SHALL BE EXTINGUISHED.
AFFECTS: PARCEL A
(BLANKET IN NATURE)(POTENTIALLY EXTINGUISHED)

20. RELINQUISHMENT OF ACCESS TO STATE HIGHWAY AND OF LIGHT, VIEW AND AIR BY DEED TO THE STATE OF WASHINGTON:
RECORDED: NOVEMBER 19, 1966
RECORDING NO.: 2321816
AFFECTS: PARCEL A
(APPLIES TO OFFSITE ADJACENT PROPERTY)

21. RELINQUISHMENT OF ACCESS TO STATE HIGHWAY AND OF LIGHT, VIEW AND AIR BY DEED TO THE STATE OF WASHINGTON:
RECORDED: OCTOBER 20, 1975
RECORDING NO.: 2632004
AFFECTS: PARCEL B
(BLANKET IN NATURE)

22. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
GRANTEE: PUGET SOUND POWER AND LIGHT COMPANY
PURPOSE: ELECTRIC TRANSMISSION AND/OR DISTRIBUTION SYSTEM
AFFECTS: EAST 10 FEET OF PARCEL A AND INCLUDES OTHER PROPERTY
RECORDED: MAY 26, 1976
RECORDING NO.: 2667305
(PLOTTED HEREON)

23. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
GRANTEE: PUGET SOUND POWER AND LIGHT COMPANY
PURPOSE: ELECTRIC TRANSMISSION AND/OR DISTRIBUTION SYSTEM
AFFECTS: PORTION OF PARCEL A AND INCLUDES OTHER PROPERTY
RECORDED: MAY 26, 1976
RECORDING NO.: 2667306
(BLANKET IN NATURE)

24. COVENANTS, CONDITIONS AND RESTRICTIONS AND EASEMENTS CONTAINED IN SHORT PLAT:
RECORDED: MAY 25, 1977
RECORDING NO.: 77-315
(PLOTTED HEREON)(COMMON ACCESS TRACT "A")

25. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
PURPOSE: INGRESS, EGRESS AND UTILITIES
AFFECTS: PORTION OF TRACT A LYING WITHIN PARCEL A
RECORDED: JANUARY 16, 1958
RECORDING NO.: 2792268
(PLOTTED HEREON)

26. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
PURPOSE: INGRESS AND EGRESS
AFFECTS: TRACT A OF SHORT PLAT 77-315
RECORDED: JUNE 8, 1977
RECORDING NO.: 2741876
(PLOTTED HEREON)

27. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
GRANTEE: CITY OF PUYALLUP
PURPOSE: CONSTRUCTING, INSTALLING, REPAIRING AND MAINTAINING STREET IMPROVEMENTS ACCORDING TO THE PLAN ENTITLED "SOUTH MERIDIAN STREET IMPROVEMENTS"
AFFECTS: PARCEL A
RECORDED: JUNE 10, 1987
RECORDING NO.: 8706100397
(PLOTTED HEREON)

28. MUTUAL MAINTENANCE AGREEMENT AND THE TERMS AND CONDITIONS THEREOF:
RECORDED: MAY 17, 1991
RECORDING NO.: 9105170239
AFFECTS: PARCEL A
(NOT SURVEY RELATED)

29. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
GRANTEE: WASHINGTON NATURAL GAS
PURPOSE: GAS PIPELINE OR PIPELINES
AFFECTS: NORTHERLY PORTION OF PARCEL A
RECORDED: MARCH 30, 1992
RECORDING NO.: 9203300111
(PLOTTED HEREON)

30. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
GRANTEE: CITY OF PUYALLUP
PURPOSE: STORMWATER, SANITARY AND WATERMAIN PIPE LINE AND APPURTENANCES
AFFECTS: SOUTH 30 FEET OF PARCEL B
RECORDED: JUNE 4, 1992
RECORDING NO.: 9206040382
(PLOTTED HEREON)

31. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
GRANTEE: CITY OF PUYALLUP
PURPOSE: STORMWATER, SANITARY AND WATERMAIN PIPE LINE AND APPURTENANCES
AFFECTS: NORTH 30 FEET OF PARCEL A
RECORDED: JUNE 4, 1992
RECORDING NO.: 9206040383
(PLOTTED HEREON)(OFFSITE ADJACENT EASEMENT)

32. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
GRANTEE: CITY OF PUYALLUP
PURPOSE: STORMWATER, SANITARY AND WATERMAIN PIPE LINE AND APPURTENANCES
AFFECTS: NORTH 30 FEET OF PARCEL A
RECORDED: JUNE 4, 1992
RECORDING NO.: 9206040384
(PLOTTED HEREON)

33. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
GRANTEE: PUGET SOUND POWER AND LIGHT COMPANY
PURPOSE: ELECTRIC TRANSMISSION AND/OR DISTRIBUTION SYSTEM
AFFECTS: PORTION OF PARCEL B
RECORDED: JULY 28, 1992
RECORDING NO.: 9207280563
(PLOTTED HEREON)(OFFSITE ADJACENT EASEMENT)

34. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
GRANTEE: PUGET SOUND POWER AND LIGHT COMPANY
PURPOSE: ELECTRIC TRANSMISSION AND/OR DISTRIBUTION SYSTEM
AFFECTS: PORTION OF PARCEL A
RECORDED: JULY 28, 1992
RECORDING NO.: 9207280564
(PLOTTED HEREON)

SURVEYOR'S CERTIFICATION:

TO: BP PRODUCTS NORTH AMERICA INC., A MARYLAND CORPORATION AND STEWART TITLE GUARANTY COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS AND INCLUDES ITEMS 2, 3, 4, 7(a), 7(b)(1), 7(c), 8, 9, 11, 13, 14, 16, 17, 18, AND 19 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON MARCH 22, 2022.

DATE OF PLAT OR MAP: JULY 19, 2023.

MATTHEW K. ABBAS, PLS — DATE
WASHINGTON REGISTRATION NO. 20109892
MABBAS@BARGHAUSEN.COM



No.	Date	By	Ckd.	Appr.	Revision
1	7/18/23	KJR	MKA	MKA	ADDED TOPO AND UTILITIES TO THE ROAD SOUTH OF THE SITE TO 15TH AVE SE

Title: **ALTA/NSPS LAND TITLE SURVEY**
PTN OF THE SE1/4, OF THE NE1/4 OF SEC. 33, TWP. 20 N., RGE 4 E., W. M.
CITY OF PUYALLUP, PIERCE COUNTY, WASHINGTON STATE

For: **BP FUELS NA**

PRCNC20231424
Convenience Store

Scale: Horizontal N/A Vertical

Designed AEF | Drawn MKA | Checked MKA | Approved MKA | Date 7/19/23

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032 **barghausen.com**
425.251.6222

Job Number 21730

Sheet 1 of 2

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ALTA/NSPS LAND TITLE SURVEY

LEGEND

(NOTE: NOT ALL SYMBOLS MAY APPEAR ON THE MAP)

- SURVEY MONUMENT (AS NOTED)
- SECTION CORNER (AS NOTED)
- FOUND REBAR/CAP (AS NOTED)
- SET 2"x2" HUB/TACK LINE STAKE
- MAG/WASHER OR LEAD/TACK (AS NOTED)
- LUMINAIRE (LUM.)
- YARD LIGHT
- TRAFFIC SIGNAL LIGHTS
- POWER METER
- POWER POLE
- JUNCTION BOX (AS NOTED)
- CATCH BASIN (CB)
- STORM MANHOLE (SDMH)
- SANITARY SEWER MANHOLE (SSMH)
- CLEANOUT (AS NOTED)
- GAS METER
- GAS VALVE
- WATER VALVE (WV)
- FAUCET
- FIRE HYDRANT(FH) / CONNECTION(FDC)
- WATER METER
- SIGN
- IRRIGATION SPRINKLER
- DIRECTIONAL ARROW
- ADA SYMBOL
- CHAIN LINK FENCE
- WOOD FENCE
- HOGWIRE FENCE
- GUARD RAIL/CABLE FENCE
- WATER LINE
- GAS LINE
- T(XX) TELEPHONE LINE (OH) OR (UG)
- P(XX) POWER LINE (OH) OR (UG)
- SD STORM LINE
- SS SEWER LINE
- DECIDUOUS TREE (R#)
- CONIFEROUS TREE (OH)
- CONCRETE (UG)
- GRAVEL/SAND (AS NOTED) (TYP)
- ASPHALT (C)
- BUILDING LINE (M)

ABBREVIATIONS

- REFERENCE SURVEYS
- OVERHEAD
- UNDERGROUND
- TYPICAL
- CALCULATED
- MEASURED

SCALE: 1"=20'

No.	Date	By	Ckd.	Appr.	Revision
1	7/18/23	KJR	MKA	MKA	ADDED TOPO AND UTILITIES TO THE ROAD SOUTH OF THE SITE TO 15TH AVE SE

Title: **ALTA/NSPS LAND TITLE SURVEY**
PTN OF THE SE1/4, OF THE NE1/4 OF SEC. 33, TWP. 20 N., RGE 4 E., W. M.
CITY OF PUYALLUP, PIERCE COUNTY, WASHINGTON STATE

For: **BP FUELS NA**

PRCNC20231424
Convenience Store

Designed AEF | Drawn MKA | Checked MKA | Approved MKA | Date 7/19/23

Scale: Horizontal 1"=20' Vertical

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222 barghausen.com

Job Number 21730

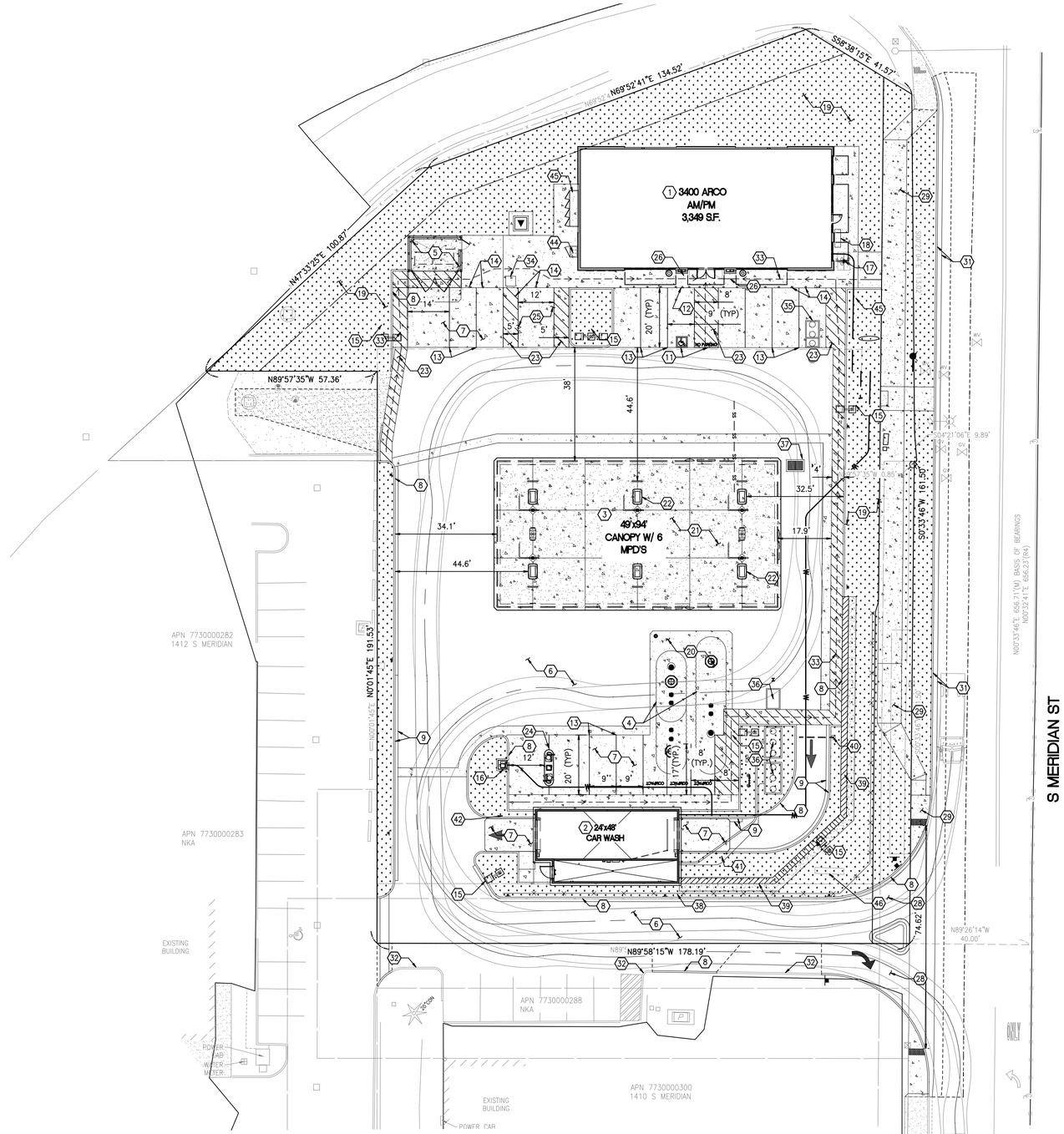
Sheet 2 of 2

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ARCHITECTURAL SITE PLAN

CONSTRUCTION NOTES:

1. CONVENIENCE STORE.
2. CAR WASH.
3. FUEL CANOPY.
4. UNDERGROUND STORAGE TANKS. SEE FUEL PLANS FOR DETAILS.
5. TRASH ENCLOSURE AND CONCRETE TRASH ENCLOSURE SLAB. TRASH ENCLOSURE UNDER SEPARATE PERMIT.
6. ON-SITE ASPHALT PAVEMENT. SEE CIVIL DRAWINGS.
7. ON-SITE CONCRETE PAVEMENT. SEE CIVIL DRAWINGS. PROVIDE EXPANSION AND CONTROL JOINTS PER CIVIL DRAWINGS.
8. BARRIER CURB. SEE CIVIL DRAWINGS.
9. CURB AND GUTTER. SEE CIVIL DRAWINGS.
10. CONCRETE SIDEWALK, WIDTH VARIES. SEE CIVIL DRAWINGS.
11. ACCESSIBLE PARKING STALL AND AISLE. SEE CIVIL DRAWINGS.
12. BOLLARD MOUNTED ACCESSIBLE PARKING STALL SIGNAGE. SEE CIVIL DRAWINGS.
13. PARKING STALL WITH 4" WIDE WHITE REFLECTIVE PAINT STRIPE (TYP.). SEE CIVIL DRAWINGS.
14. BOLLARD (TYP.). SEE CIVIL DRAWINGS.
15. LOT LIGHT. SEE DETAIL ON-SITE PHOTOMETRIC PLANS FOR MORE DETAILS. COORDINATE ALL CONDUIT RUNS, WIRING REQUIREMENTS, LOT LIGHT BASE, ETC. WITH ELECTRICAL PLANS. SEE CIVIL DRAWINGS.
16. AIR/WATER UNIT. ARCHITECTURAL PLANS FOR MORE DETAILS.
17. BICYCLE STORAGE. SEE CIVIL DRAWINGS.
18. SEATING BENCH.
19. LANDSCAPING. SEE LANDSCAPE PLANS.
20. CONCRETE TANK FUEL SLAB. SEE FUEL PLANS FOR DESIGN.
21. UNDER CANOPY CONCRETE SLAB. SEE ARCHITECTURAL PLANS FOR DETAILS.
22. FUEL DISPENSERS WITH HOOP BOLLARDS (TYP.). SEE FUEL PLANS FOR DETAILS.
23. PAVEMENT MARKINGS – 4" WIDE WHITE PAINTED STRIPES @ 2' O.C/45° ANGLE. SEE CIVIL DRAWINGS.
24. VACUUM UNIT. REFER TO ARCHTIECTURAL CAR WASH DRAWINGS, 01/CWA4.2.
25. VAN ACCESSIBLE AND STANDARD EV CHARGING STATION, SEE CIVIL DRAWINGS.
26. TRASH RECEPTACLE (TYP).
27. CONCRETE DRIVEWAY PER CITY OF PUYALLUP STANDARD DRAWING NO. 01.02.17. CIVIL DRAWINGS.
28. CONCRETE DRIVEWAY PER CITY OF PUYALLUP STANDARD DRAWING NO. 01.02.16. CIVIL DRAWINGS.
29. CONCRETE SIDEWALK PER CITY OF PUYALLUP STANDARD DRAWING NO. 01.02.01. SEE CIVIL DRAWINGS.
30. TYPE I CURB RAMP PER CITY OF PUYALLUP STANDARD DRAWING NO. 01.02.19. SEE CIVIL DRAWINGS.
31. OFF-SITE CURB AND GUTTER PER CITY OF PUYALLUP STANDARD DRAWING NO. 01.02.09. SEE CIVIL DRAWINGS.
32. PROTECT EXISTING CURB/CURB AND GUTTER TO REMAIN.
33. ACCESSIBLE PATH. REFER TO CIVIL GRADING PLAN FOR SLOPE REQUIREMENTS.
34. FREEWIRE EV CHARGING STATION TO BE INSTALLED
35. GREASE INTERCEPTOR. REFER TO CIVIL AND PLUMBING DRAWINGS.
36. WATER RECLAIM TANKS AND SEPARATOR. REFER TO CAR WASH, PLUMBING AND CIVIL DRAWINGS FOR CONTINUATION
37. SAND-OIL-WATER SEPARATOR. REFER TO CIVIL DRAWINGS.
38. VEHICLE GUARD RAIL. REFER TO CIVIL AND STRUCTURAL DRAWINGS.
39. RETAINING WALL. REFER TO CIVIL AND STRUCTURAL DRAWINGS.
40. CAR WASH OVERHEAD HEIGHT WARNING BAR. REFER TO ARCHITECTURAL CAR WASH DRAWINGS AND STRUCTURAL DETAILS.
41. CAR WASH PAY STATION. REFER TO ARCHITECTURAL CAR WASH DRAWINGS.
42. DRYER COUNT DOWN DISPLAY. REFER TO CAR WASH DRAWINGS.
43. PROPANE EXCHANGE CAGE
44. ELECTRICAL SWITCHGEAR. REFER TO ELECTRICAL DRAWINGS.
45. PROPOSED NEW MONUMENT SIGN. PERMITTED SEPARATELY.
46. EXISTING POLE SIGN TO BE RESURFACED WITH ARCO/AMPM SIGNAGE. PERMITTED SEPARATELY.



N

0 10' 20' 40'

SCALE: 1"=20'

GENERAL NOTES

1. SEE CIVIL FOR ADDITIONAL INFO
2. SEE ELECTRICAL FOR ADDITIONAL INFO

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	2/6/24	PERMIT RESUBMITTAL
2		
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SEAL:

10697 REGISTERED ARCHITECT
DANIEL B GOALWIN
STATE OF WASHINGTON

EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

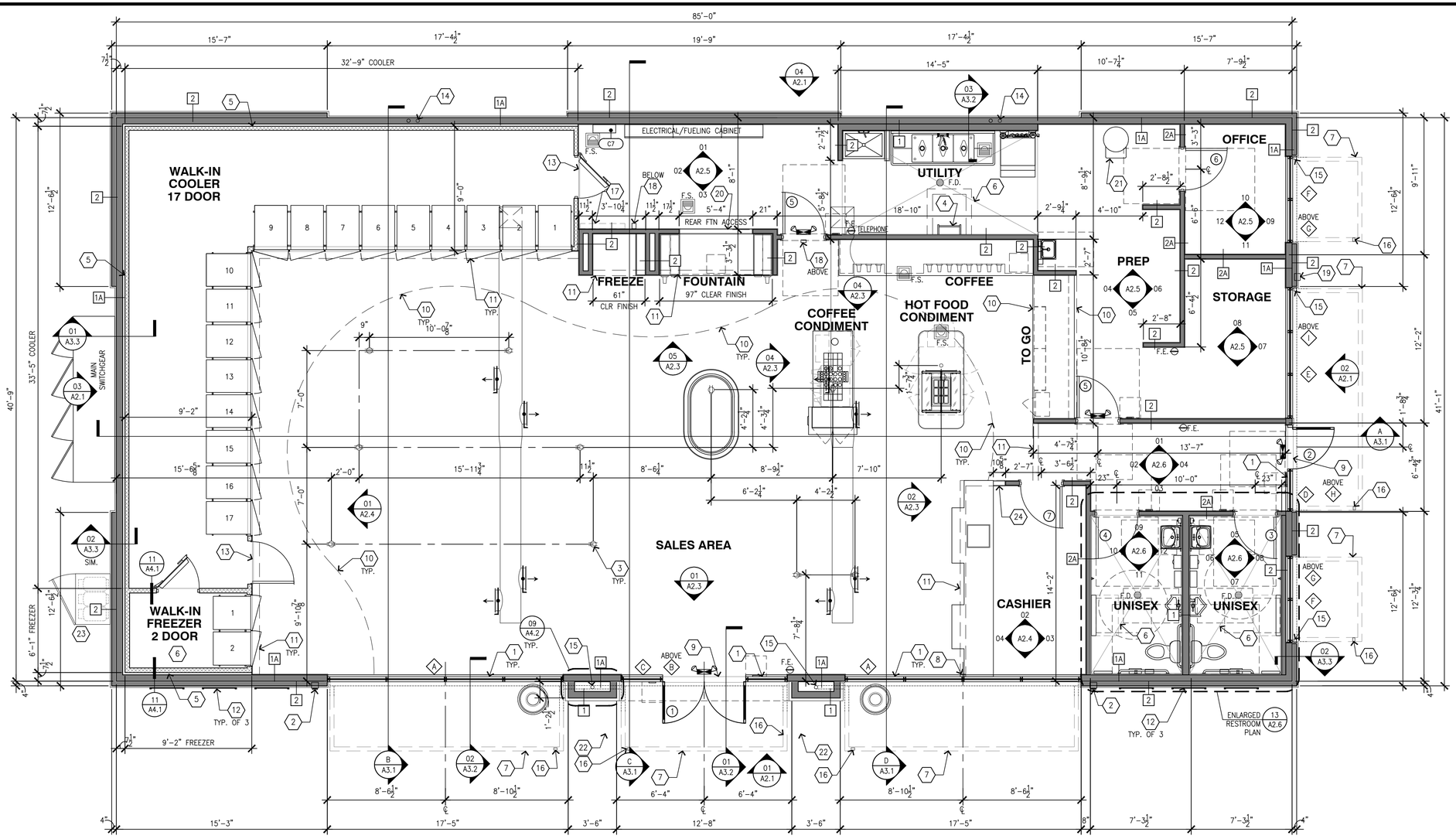
DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: -	PROJECT NO: 21730

DRAWING TITLE:

ARCHITECTURAL SITE PLAN

SHEET NO:

AS1.0



01 CONSTRUCTION FLOOR PLAN
SCALE: 1/4"=1'-0"

GENERAL NOTES

A. ALL DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE.
B. ALL DENOTED DIMENSIONS ARE TO BE USED. PLANS SHALL NOT BE SCALED.
C. EXTERIOR WALL ARE 2x6, INTERIOR WALLS 2x4 U.N.O., SEE STRUCTURAL PLANS FOR FRAMING REQUIREMENTS.
D. SEE PLUMBING PLANS FOR DIMENSIONS TO PLUMBING FIXTURES
E. REFER TO SHEET Q1.1 FOR FOR EQUIPMENT PLAN.
F. REFER TO SHEET Q2.1 FOR EQUIPMENT SCHEDULE.
G. ALL EQUIPMENT SHALL MEET ACCESSIBILITY REACH RANGE REQUIREMENTS.
H. PROVIDE PLASTIC CORNER GUARDS AT EDGES BELOW 6'-0".
I. ALL COUNTERTOPS SHALL BE MAX. 34" A.F.F. WITH A 3-FOOT WIDE TRANSACTION AREA AT CASHIER. CONTRACTOR SHALL COORDINATE WORK WITH CABINET INSTALLER FOR CABINET INSTALLATION. CONTRACTOR TO ROUTE UTILITIES THROUGH CABINETS. CONTACT CABINET INSTALLER FOR SITE SPECIFIC CABINET SHOP DRAWINGS.
J. 4" HIGH BACKSPLASH AT ALL COUNTERTOPS THAT TERMINATE AT WALL. BACKSPLASH TO MATCH COUNTERTOP MATERIAL.
K. THE CONTRACTOR SHALL ASSIST STORE PERSONNEL BY ASSEMBLING MERCHANDISE GONDOLAS AND SHELVING AS SHOWN ON Q1.1
L. ALL EQUIPMENT AND CABINETS SHALL BE FREE OF SHARP EDGES. CONTACT MANUFACTURER OR PREP EDGES FOR SAFETY.
M. CONTRACTOR SHALL ROUTE ALL CONDENSATE DRAIN LINES TO FLOOR SINKS.
N. CONTRACTOR SHALL INSTALL NEW PARTITIONS/WALLS WITH GYPSUM WALL BOARD AND FINISHES AS NOTED ON FINISH SCHEDULE AND INTERIOR ELEVATIONS ON SHEET A2.3 THRU A2.7. ALL PARTITIONS/WALLS SHALL BE BRACED FOR LATERAL FORCES, PER BUILDING CODE REQUIREMENTS.
O. FLAME SPREAD CLASSIFICATIONS FOR INTERIOR WALLS SHALL COMPLY WITH LOCAL CODES.
P. FIRE EXTINGUISHERS (2A:10B:C) SHALL BE INSTALLED AT SALES COUNTER, BACK ROOM, SALES AREA, & FUEL CANOPY LOCATIONS IF NOT SHOWN ELSEWHERE ON THESE DRAWINGS. VERIFY WITH OWNER FOR DETAILS, CONFIRM FINAL DETAILS WITH LOCAL FIRE INSPECTOR.
Q. CONTRACTOR SHALL ASSIST THE OWNER WITH STORE EQUIPMENT TO PREPARE A DELIVERY STAGING AREA. COORDINATE WITH OWNER FOR THE DELIVERY SCHEDULE AND SHIPPING DAMAGES, AS APPLICABLE.
R. CONTRACTOR SHALL PROVIDE A CLEAN, SMOOTH SURFACE FOR GRAPHICS INSTALLATION.
S. ALL DIMENSIONS SHALL BE FIELD VERIFIED BY CONTRACTOR FROM CABINET AND EQUIPMENT CLEARANCES PRIOR TO WALL ERECTION. DISCREPANCIES SHALL BE DIRECTED TO OWNER.
T. WATER HEATERS SHALL BE CAPABLE OF DELIVERING MIN. 120° WATER TO ALL SINKS.
U. ALL FLOOR/WALL TILE AND COVE BASE SHALL BE INSTALLED BY THE GENERAL CONTRACTOR ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
V. ALL DOORS MUST HAVE NO MORE THAN 5 LBS OPENING FORCE AND MUST HAVE A SWEEP PERIOD OF 3 SECONDS TO CLOSE FROM 70° OPEN TO 3° FROM THE LATCH.
W. CARBONATOR BACK-FLOW PREVENTOR DRAIN LINE OUTLET SHALL BE TO FLOOR SINK PROVIDED FOR THIS AREA.

KEYED NOTES

1. ALUMINUM ENTRANCE AND STOREFRONT SYSTEM, REFER TO SHEET A5.1 & SPECIFICATION.
2. EMERGENCY SWITCH OFF, VERIFY LOCATION PRIOR TO INSTALLATION. REFER TO ELECTRICAL PLANS FOR SPECIFICATION.
3. FLOOR RECEPTACLES, REFER TO ELECTRICAL PLANS.
4. ROOF LADDER PER DETAIL 07/A4.1.
5. 1" MINIMUM AIR GAP AT PREFABRICATED COOLER/FREEZER.
6. DEPRESSED SLAB, REFER TO FOUNDATION PLAN.
7. LINE OF CANOPY ABOVE.
8. BREAK METAL CLOSURE AT BULKHEAD AND STOREFRONT VERTICAL MULLION. REFER TO DETAIL 11/A4.2
9. THRESHOLD, REFER TO DOOR SCHEDULE ON SHEET A5.1.
10. LINE OF SOFFIT ABOVE.
11. BULKHEAD ABOVE.
12. WALL SIGNS.
13. TRANSITION STRIP.
14. ROOF DRAIN AND OVERFLOW, REFER TO CIVIL PLANS FOR CONTINUATION.
15. CANOPY DOWNSPOUT, REFER TO CIVIL PLANS FOR CONTINUATION.
16. CANOPY OVERFLOW ABOVE, REFER TO DETAIL 09/A4.2.
17. FUTURE SOLAR EQUIPMENT.
18. CO2 SAFETY MONITORING EQUIPMENT, REFER TO SHEETS Q1.1 AND Q2.1 FOR LOCATION AND SPECIFICATION.
19. RECESSED STAINLESS STEEL FILL BOX WITH QUICK-DISCONNECT MALE FILL AND VENT HOSE CONNECTION FOR CO2 TANK.
20. 64"x60" FOUNTAIN ACCESS OPENING @ 34" A.F.F.
21. WATER HEATER PLATFORM, REFER TO DETAIL 06/A4.2 & ELEVATIONS 08 & 09 ON SHEET A2.5.
22. NATURAL BROWN STONE AGGREGATE TRASH RECEPTACLE WITH BROWN FLAT LID, 35 GAL. CAPACITY, SUPPLIER: TREETOP PRODUCTS, MODEL: 4CR5127, PLASTIC LINER MODEL: 4CR5128. VERIFY LOCATION WITH CIVIL PLANS.
23. PORTABLE PROPANE TANK DISPLAY, REFER TO SHEETS Q1.1 AND Q2.1 FOR SPECIFICATION.
24. PARTIAL HEIGHT WALL, REFER TO THE INTERIOR ELEVATIONS

ROOM FINISH SCHEDULE

INTERIOR FINISHES	SALES	CASHIER	RESTROOMS	OFFICE	PREP/UTILITY	WALK-IN
FLOOR	GLAZED PORCELAIN TILE REFER TO FINISH CALLOUT ON A1.2.			QUARRY TILE REFER TO FINISH CALLOUT ON A1.2.		CLEAR CONCRETE SEALER REFER TO FINISH CALLOUT ON A1.2.
BASE	CERAMIC SANITARY COVE BASE REFER TO FINISH CALLOUT ON A1.2.		PORCELAIN COVE BASE REFER TO FINISH CALLOUT ON A1.2.	QUARRY SANITARY COVE BASE. REFER TO FINISH CALLOUT ON A1.2.		INTEGRAL METAL COVE BASE WITH 3/8" RADIUS, BY COOLER MFR. REFER TO SPECIFICATION ON Q1.2.
WALLS	PAINTED SMOOTH FINISH 5/8" GYPSUM BOARD. REFER TO CALLOUT ON SHEET A2.3 – A2.6.		WALL TILE OVER 5/8" WATER RESISTANT GYPSUM BOARD. REFER TO CALLOUT ON A2.6.	PAINTED SMOOTH FINISH 5/8" GYPSUM BOARD. REFER TO CALLOUT ON SHEET A2.6.	FRP OVER 5/8" WATER RESISTANT GYPSUM BOARD. REFER TO CALLOUT ON A2.5.	STUCCO-GALVALUM. BY COOLER MFR. REFER TO SPECIFICATION ON Q1.2.
FASCIA/SOFFIT	FASCIA PAINTED SMOOTH FINISH 5/8" GYPSUM BOARD. REFER TO CALLOUT ON A2.3 & A2.4. SOFFIT PAINTED SMOOTH FINISH 5/8" WATER RESISTANT GYPSUM BOARD. REFER TO CALLOUT ON A1.3.		NOT APPLICABLE			
CEILING	PAINTED PLYWOOD AND OPEN WEB TRUSSES. REFER TO CALLOUT ON A1.3.	WASHABLE SUSPENDED WHITE CEILING TILE REFER TO CALLOUT ON A1.3.				STUCCO-GALVALUM. BY COOLER MFR. REFER TO CALLOUT ON Q1.2 AND A1.3.

LEGEND

- WOOD FRAMED WALL
- PREFABRICATED COOLER/FREEZER WALL
- 1 — 2x6 STUDS @ 16"o.c.
- 1A — 2x6 STUDS @ 16"o.c. W/ THERMAL INSULATION
- 2 — 2x4 STUDS @ 16"o.c.
- 2A — 2x4 STUDS @ 16"o.c. W/ SOUND BATT INSULATION
- X — DOOR SYMBOL, REFER TO SHEET A5.1 FOR DETAILS
- X — WINDOW SYMBOL, REFER TO SHEET A5.1 FOR DETAILS

CLIENT: bp / ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	2/6/24	PERMIT RESUBMITTAL
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11		
12		

SEAL:
10697 REGISTERED ARCHITECT
DANIEL B COALWIN
STATE OF WASHINGTON
EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

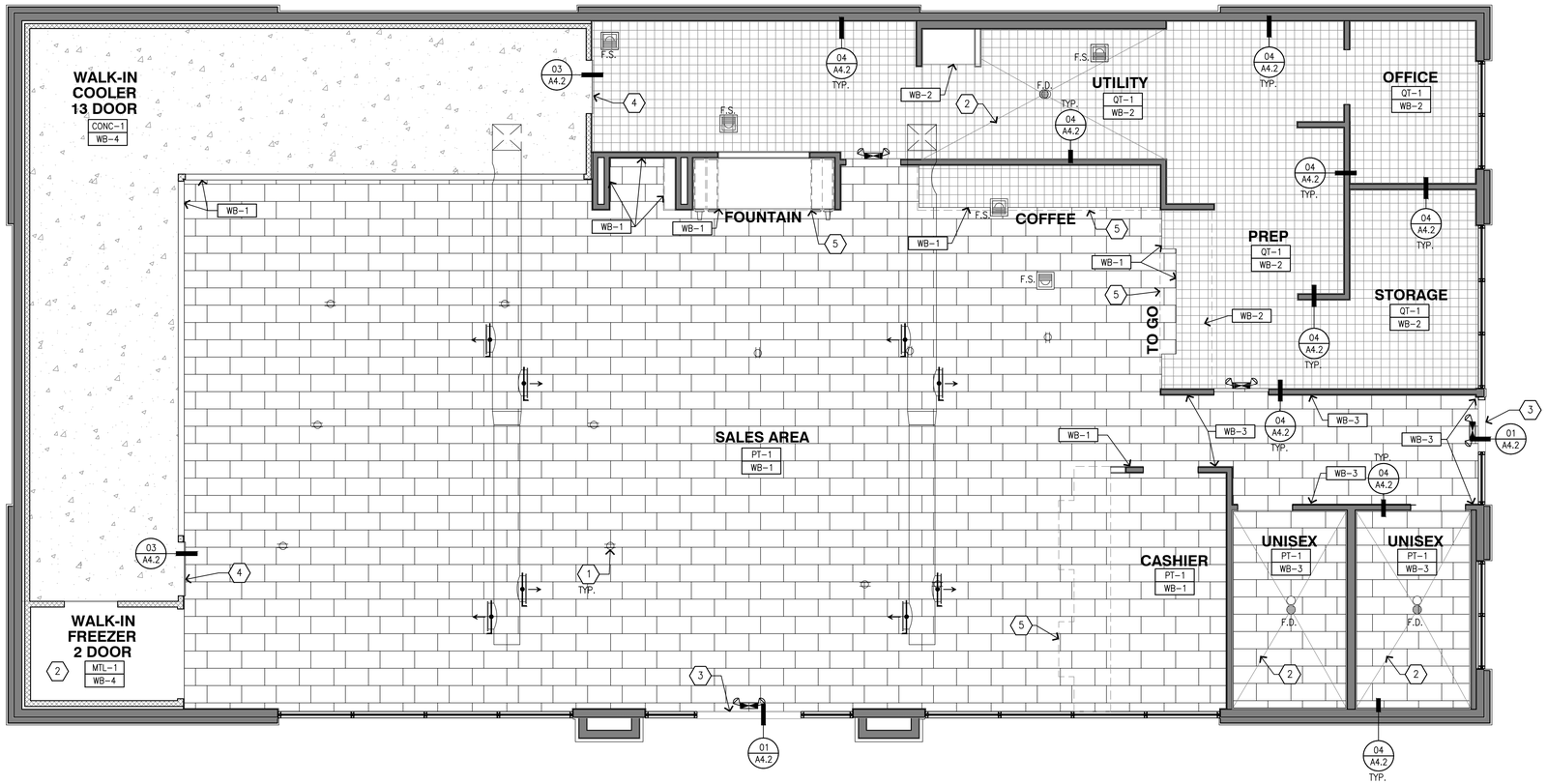
SITE ADDRESS:
1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	ALLIANCE ZAOM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
CONSTRUCTION FLOOR PLAN

SHEET NO:
A1.1



01 – **FLOOR FINISH PLAN**
SCALE: 1/4"=1'-0"

FLOOR FINISH NOTES

A. FLOOR FINISH TRANSITIONS BETWEEN ROOMS SHALL OCCUR UNDER CENTER OF DOOR WHERE APPLICABLE.
B. ALL FLOORS SHALL BE CLEANED AND SEALED PER MANUFACTURERS RECOMMENDATIONS. ALL FLOORS UNDER SALES SHELVING SHALL BE CLEANED PRIOR TO SHELF PLACEMENT. THE CONTRACTOR SHALL ARRANGE A SECOND CLEANING JUST PRIOR TO STORE OPENING.
C. CONTINUOUS TILE COVE BASE TYPICAL THROUGHOUT FOOD SERVICE AREAS AND RESTROOMS. REFER TO PLAN FOR SPECIFIC LOCATIONS.
D. PREFERRED FULL TILE FLOORING AT CENTER OF STOREFRONT ENTRANCE.
E. PRIOR TO TILE INSTALLATION, REMOVE DUST, CURING COMPOUNDS, OIL AND OTHER FOREIGN SUBSTANCES FROM SURFACES.
F. FLOOR J-BOXES AND CLEANOUTS THROUGHOUT THE STORE ARE TO BE FLUSH WITH FINISH FLOOR MATERIAL.

KEYED NOTES

1. FLOOR RECEPTACLES, REFER TO ELECTRICAL PLANS.
2. DEPRESSED SLAB, REFER TO FOUNDATION PLAN.
3. HEAVY DUTY THRESHOLD, REFER TO DOOR SCHEDULE ON SHEET A5.1
4. HEAVY DUTY TRANSITION STRIP, MFR: NGP, MODEL: 325HDx37"L, FINISH: ALUMINUM MILL
5. EDGE OF COUNTER

FLOOR FINISH

PT-1 PORCELAIN TILE
MFR: DALTILE
PRODUCT: PORTFOLIO
COLOR: PF08 CHOCOLATE
SIZE: 12"x24"
PATTERN: 33% STAGGERED BRICK-JOINT, VERTICAL ORIENTATION
GROUT: 1/8" NON- SANDED #540 TRUFFLE
BY CUSTOM BUILDING PRODUCTS
TILE & GROUT SEALER: AQUA MIX SEALER'S CHOICE GOLD
BY CUSTOM BUILDING PRODUCTS
INSTALLATION: PREFERRED START POINT AT CENTER OF ENTRY.
ADJUST AS NEEDED SO NO LESS THAN 3" TILE AT WALLS.
CLEANING PRODUCTS: FILA-DETERDEK 5 LITER (INITIAL CLEANING BY GC)
*TILES TO BE BACK BUTTERED

CONC-1 CONCRETE SEALER
MFR: L.M. SCOFIELD COMPANY
PRODUCT: CURESEAL-W (SEMI-GLOSS)
COLOR: CLEAR

QT-1 QUARRY TILE
MFR: DALTILE
PRODUCT: ABRASIVE GRAIN FIELD TILE
COLOR: 0Q40 RED BLAZE
SIZE: 6"x6"
GROUT: 3/8" SANDED #540 TRUFFLE BY CUSTOM BUILDING PRODUCTS
CLEANING PRODUCTS: FILA-DETERDEK 5 LITER (INITIAL CLEANING BY GC)
*TILES TO BE BACK BUTTERED
*SMOOTH TILE UNDER EQUIPMENT

MTL-1 .05" SMOOTH ALUMINUM W/ NON-SKID STRIP

WALL BASE

WB-1 CERAMIC SANITARY COVE BASE
MFR: DALTILE
PRODUCT: PORTFOLIO
COLOR: PF08 "CHOCOLATE"
SHAPE: P36C9T (CORNER- PC36C9T)
SIZE: 6"x12"
GROUT: 1/8" NON-SANDED #540 TRUFFLE BY CUSTOM BUILDING PRODUCTS
CLEANING PRODUCTS: FILA-DETERDEK 5 LITER (INITIAL CLEANING BY GC)
*TILES TO BE BACK BUTTERED

WB-2 QUARRY COVE BASE
MFR: DALTILE
PRODUCT: QUARRY
COLOR: 0Q40
SHAPE: Q-3565
SIZE: 5"x6"
GROUT: 3/8" SANDED #540 TRUFFLE BY CUSTOM BUILDING PRODUCTS
CLEANING PRODUCTS: FILA-DETERDEK 5 LITER (INITIAL CLEANING BY GC)
*TILES TO BE BACK BUTTERED

WB-3 PORCELAIN COVE BASE
MFR: DALTILE
PRODUCT: PORTFOLIO
COLOR: PF11 "NOCE"
SHAPE: P36C9T (CORNER- PC36C9T)
SIZE: 6"x12"
GROUT: 1/8" NON-SANDED #386 OYSTER GRAY BY CUSTOM BUILDING PRODUCTS
CLEANING PRODUCTS: FILA-DETERDEK 5 LITER (INITIAL CLEANING BY GC)
*TILES TO BE BACK BUTTERED

WB-4 INTEGRAL METAL COVE BASE WITH 3/8" RADIUS

CLIENT:
bp
ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen
Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
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SEAL:
10697 REGISTERED ARCHITECT
DANIEL B COALWIN
STATE OF WASHINGTON
EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

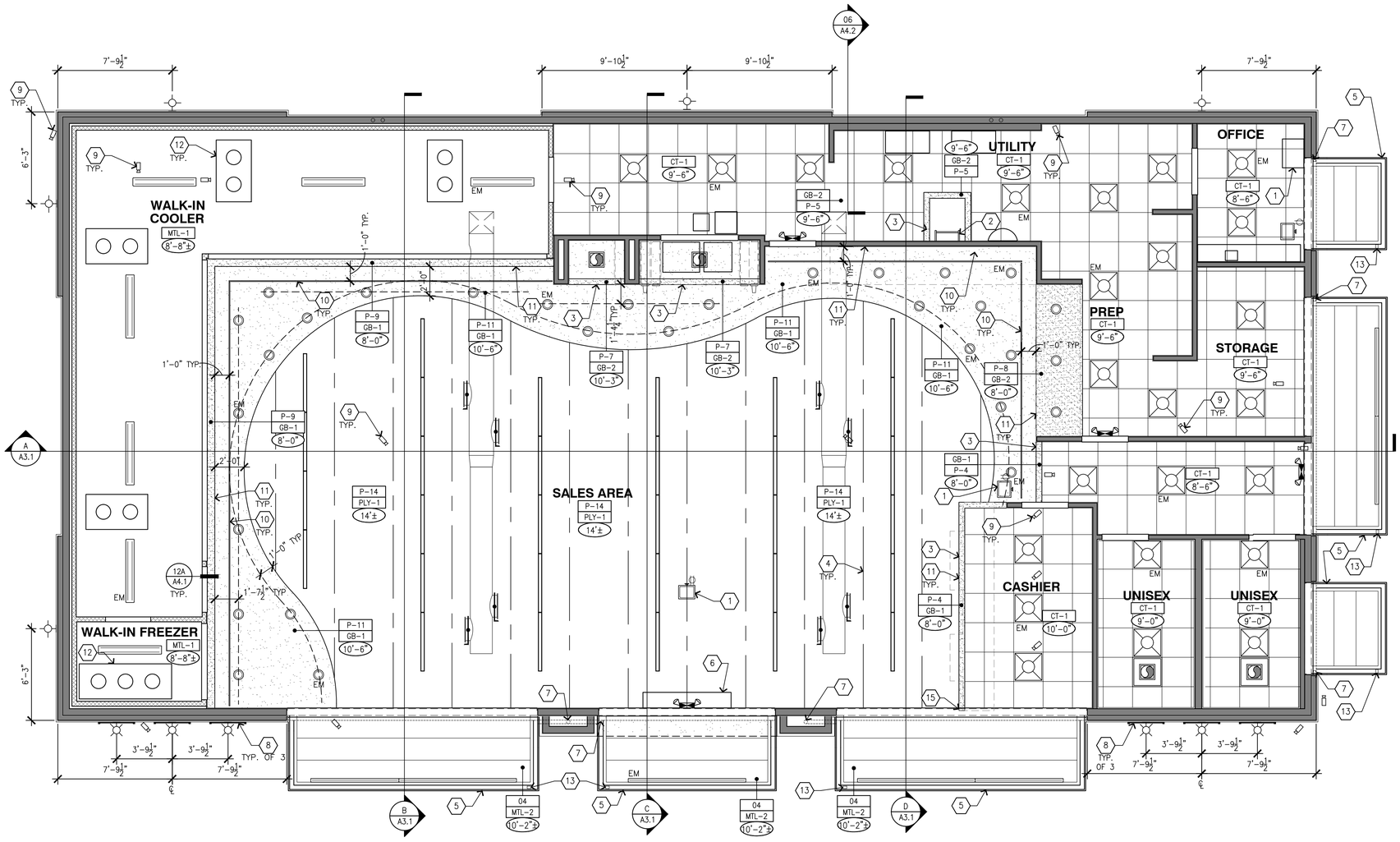
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1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

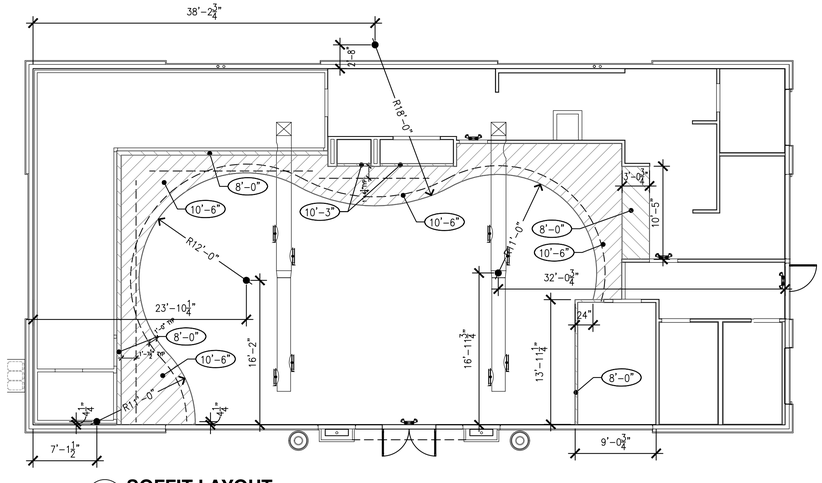
DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
FLOOR FINISH PLAN

SHEET NO:
A1.2



01 — **REFLECTED CEILING PLAN**
SCALE: 1/4"=1'-0"



02 — **SOFFIT LAYOUT**
SCALE: 1/8"=1'-0"

SECURITY NOTE

- ALL CAMERA AND MONITOR LOCATIONS TO BE CONFIRMED WITH OWNER OR SECURITY VENDER PRIOR TO INSTALLATION. ADDITIONAL MONITOR AT CASHIER AREA OR CAMERAS MAY BE REQUIRED.

EMERGENCY EGRESS LIGHTING

ELECTRICAL CONTRACTOR SHALL VERIFY THE FOLLOWING PRIOR TO INSTALLING NEW EMERGENCY LIGHTING AND PROVIDE THIS INFORMATION ON THEIR PERMIT SUBMITTAL PLANS:
EMERGENCY LIGHTING SHALL BE ARRANGED TO PROVIDE AN INITIAL ILLUMINATION THAT IS AT LEAST AVERAGE OF 1 FOOT-CANDLE AND A MINIMUM AT ANY POINT OF 0.1 FOOT-CANDLE MEASURED ALONG THE PATH OF EGRESS AT FLOOR LEVEL. ILLUMINATION LEVELS SHALL BE PERMITTED TO DECLINE TO 0.6 FOOT-CANDLES AVERAGE AND A MINIMUM AT ANY POINT OF 0.06 FOOT-CANDLES AT THE END OF THE EMERGENCY LIGHTING TIME DURATION. A MAXIMUM-TO-MINIMUM ILLUMINATION UNIFORMITY RATIO OF 40:1 SHALL NOT BE EXCEEDED.
EMERGENCY POWER SYSTEM SHALL BE PROVIDED FOR A DURATION OF NOT LESS THAN 90 MINUTES AND SHALL CONSIST OF STORAGE BATTERIES, UNIT EQUIPMENT, OR AN ON-SITE GENERATOR.

ELECTRICAL NOTE

- ALL OVERHEAD CONDUITS AT OPEN CEILING SHALL BE FASTENED TO UNDERSIDE OF ROOF DECKING.

GENERAL NOTES

A. ALL DIMENSIONS SHOWN ON REFLECTED CEILING PLAN ARE FROM FINISHED FACE, UNLESS NOTED OTHERWISE.
B. REFER TO ELECTRICAL LIGHTING PLAN FOR LIGHTING SPECIFICATIONS AND FIXTURE MOUNTING HEIGHTS.
C. REFER TO SYMBOL (X'-X") FOR ALL CEILING HEIGHTS ON PLAN.

SUSPENDED CEILING NOTE

1. SUSPENDED CEILING SYSTEM MUST BE HEAVY DUTY SYSTEM CONFORMING TO ASTM C 635, ASTM C 636, AND IN ACCORDANCE NORTHWEST WALL & CEILING BUREAU TECHNICAL BULLETIN NO. 401.
2. SUSPENDED MEMBER GRID MUST BE ATTACHED TO TWO ADJACENT WALLS ON MINIMUM 2" WIDE WALL MOLDINGS OR CLOSURE ANGLES AT THESE WALLS.
3. ENDS OF SUSPENDED MEMBER MAIN RUNNERS AND CROSS RUNNERS MUST BE TIED TOGETHER TO PREVENT DISLOCATION.
4. LIGHT FIXTURES 10lbs. TO 55lbs. IN WEIGHT MUST BE SUPPORTED TO STRUCTURE BY AT LEAST TWO #12 GAUGE HANGER WIRES, EACH AT TWO OPPOSING SIDES, AND SHALL BE ATTACHED TO SUSPENDED MEMBER GRID AT TWO OPPOSING SIDES. WIRES MAY BE SLACK.
5. HVAC TERMINALS OR REGISTERS 20lbs. TO 56lbs. IN WEIGHT SHALL BE POSITIVELY ATTACHED TO SUSPENDED MEMBER MAIN RUNNERS, OR TO CROSS RUNNERS WITH EQUAL CARRYING CAPACITY, AND MUST ALSO BE SUPPORTED TO STRUCTURE BY AT LEAST TWO #12 GAUGE HANGER WIRES AT TWOOPPOSING SIDES. WIRES MAY BE SLACK.
6. EMT CONDUIT – SIZE AND LENGTHS: 1/2" EMT CONDUIT – UP TO 5'-10"; 3/4" EMT CONDUIT – UP TO 7'-8"; 1" EMT CONDUIT – UP TO 9'-9" OR METAL STUDS – SIZE AND LENGTH: SINGLE 1⅝" METAL STUD (20GA) – UP TO 12'-0"

KEYED NOTES

1. INSTALL SECURITY MONITOR, REFER TO SECURITY NOTE
2. ROOF HATCH LADDER, REFER TO DETAIL 07/A4.1
3. BULKHEAD FRAMING
4. OPEN WEB TRUSSES, REFER TO STRUCTURAL PLANS
5. STEEL CANOPY, REFER TO STRUCTURAL PLANS
6. AIR CURTAIN, REFER TO MECHANICAL PLANS
7. CANOPY DOWNSPOUTS, REFER TO CIVIL PLANS FOR CONTINUATION
8. EXTERIOR WALL SIGNS, UNDER SEPARATE PERMIT
9. SECURITY CAMERA, REFER TO SECURITY NOTE
10. LINEAR GRAPHICS FIXTURE WITH REVEAL, REFER TO DETAIL 07/A4.2
11. VINYL GRAPHIC PROVIDED & INSTALLED BY SIGN CONTRACTOR
12. WALK-IN COOLER/FREEZER EVAPORATOR, REFER TO SHEET Q1.2
13. CANOPY OVERFLOW, REFER TO DETAIL 09/A4.2
14. TYPE II HOOD, REFER TO MECHANICAL PLANS
15. BREAK METAL CLOSURE AT BULKHEAD AND STOREFRONT VERTICAL MULLION. REFER TO DETAIL 11/A4.2

FINISH SYMBOLS

PAINT COLOR (SEMI-GLOSS REQUIRED OVER ALL FOOD SERVICE AREAS AND RESTROOM)

- P-4 — BENJAMIN MOORE, 1079, "BAYSHORE BEIGE" EGGSHELL FINISH
- P-5 — BENJAMIN MOORE, 2121-70, "CHANTILLY LACE" SEMI-GLOSS FINISH
- P-6 — BENJAMIN MOORE, 2096-30, "GRANDFATHER CLOCK BROWN" SEMI-GLOSS FINISH
- P-7 — BENJAMIN MOORE, 2049-50, "SPECTRA BLUE" SEMI-GLOSS FINISH
- P-8 — BENJAMIN MOORE, 2019-30, "SUNFLOWER" SEMI-GLOSS FINISH
- P-9 — BENJAMIN MOORE, 768, "ATLANTIS BLUE" EGGSHELL FINISH
- P-10 — BENJAMIN MOORE, PM-28, "LINEN WHITE" SEMI-GLOSS FINISH
- P-11 — BENJAMIN MOORE, 2132-60, "METALLIC SILVER" EGGSHELL FINISH
- P-14 — BENJAMIN MOORE, 2108-40, "STARDUST" EGGSHELL FINISH
- 04 — HIGH HIDING WHITE (TO MATCH FORECOURT CANOPY PANELS) BENJAMIN MOORE, 2123-70, "ICE MIST" – P28 DTM

SUSPENDED CEILING

- CT-1 — WASHABLE SUSPENDED CEILING TILE USG, 3270, "CLIMAPLUS VINYL", 24"x48"x⅝" (WHITE) ACOUSTICAL SUSPENSION SYSTEM DONN, DX, 15/16" EXPOSED TEE SYSTEM (WHITE)

  NOTE: USE USG VARIABLE LOCKING HOLD-DOWN CLIP (CATALOG NUMBER- PZ) IN OFFICE AND RESTROOM SUSPENDED CEILING SYSTEM TO SECURE CEILING TILE.

SUBSTRATE

- GB-1 — ⅝" GYPSUM BOARD, SMOOTH FINISH
- GB-2 — ⅝" MOISTURE RESISTANT GYPSUM BOARD, SMOOTH FINISH
- PLY-1 — PLYWOOD, REFER TO STRUCTURAL FOR SPECIFICATION

METAL

- MTL-1 — STUCCO-GALVALUM, REFER TO Q1.2 SHEET
- MTL-2 — PRE-FINISHED ROLLED ROOFING PANELS, REFER TO A7.3 SPECIFICATION SHEET.

CEILING LEGEND

(EM) – DENOTES EMERGENCY BACKUP LIGHTING

- LED HIGH BAY FIXTURE MOUNTED 10'-6" A.F.F.
- 2'x2' LED RECESSED PANEL FIXTURE
- LED RECESSED DOWNLIGHT FIXTURE
- LED LINEAR GRAPHICS FIXTURE
- LED SURFACE MOUNTED COOLER FIXTURE
- LED EXTERIOR SURFACE MOUNTED AWNING FIXTURE
- LED EXTERIOR WALL MOUNTED FIXTURE @ 9'-6" A.F.F.
- LED EXTERIOR WALL MOUNTED FIXTURE @ 8'-0" A.F.F.
- ILLUMINATED EXIT SIGN
- ILLUMINATED EXIT SIGN W/ EMERGENCY LIGHTING
- SECURITY MONITOR
- SECURITY CAMERA
- OVERHEAD WALL RECEPTACLES
- EXHAUST FAN

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

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SEAL:

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DANIEL B GOALWIN
STATE OF WASHINGTON
EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

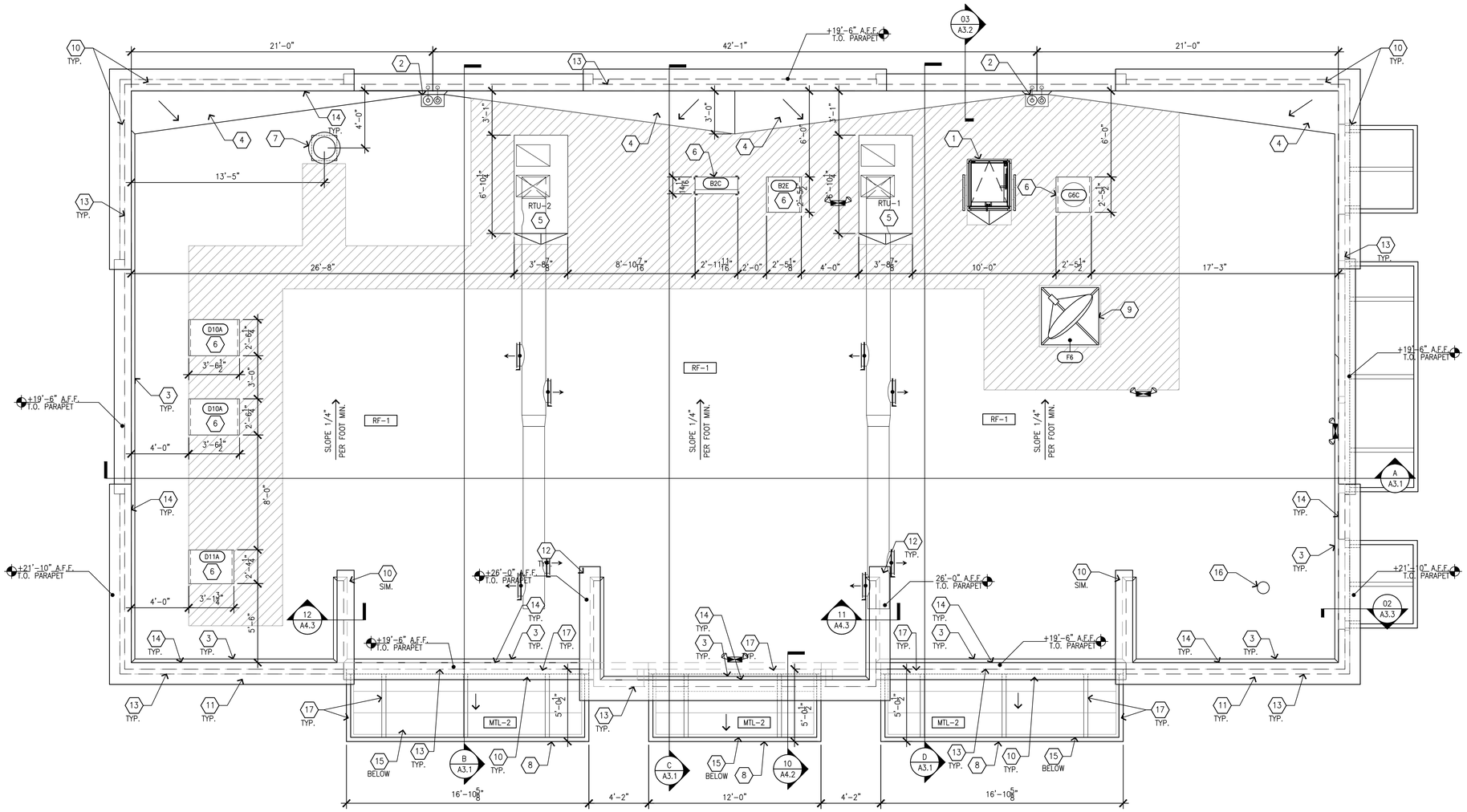
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CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:

REFLECTED CEILING PLAN

SHEET NO:

A1.3



01 – **ROOF PLAN**
SCALE: 1/4"=1'-0"

GENERAL NOTES

A. REFER TO SPECIFICATION SHEETS A7.3 & A7.4 FOR ROOF SYSTEM, INCLUDING GUARANTEES, CURBS, FLASHING, AND ETC.
B. REFER TO ROOFING MANUFACTURERS WRITTEN INSTRUCTIONS AND DETAILS FOR ROOFING SYSTEM INSTALLATION. CONTRACTOR TO PROVIDE COMPLETE ROOFING PACKAGE PER MANUFACTURERS RECOMMENDATIONS.
C. ROOF ASSEMBLY SHALL COMPLY WITH U.L. I-90 AND FM CLASS "B" RATINGS INCLUDING COPING, FLASHING, PARAPET WALL, AND ROOF SYSTEM.
D. DO NOT STOCKPILE EQUIPMENT OR MATERIALS ON THE ROOF STRUCTURE, UNLESS APPROVED IN WRITING BY THE ARCHITECT, STRUCTURAL ENGINEER, AND THE TRUSS MANUFACTURER.
E. FOR EQUIPMENT COMPRESSOR & CONDENSER REFER TO EQUIPMENT PLAN ON SHEET Q1.1 AND EQUIPMENT SCHEDULE ON SHEET Q2.1.
F. GENERAL CONTRACTOR IS TO PROVIDE TEMPORARY CONSTRUCTION PERIMETER GUARDRAIL TO COMPLY WITH CODE OF FEDERAL REGULATIONS 29 CFT 1926, SUBPART M (OSCA), GUARDRAIL TO BE 42" HEIGHT AND BE ABLE TO WITHSTAND 200 POUNDS AT TOP EDGE.
H. REFER TO MECHANICAL PLANS FOR VENT PIPE PENETRATION AND CURB DETAILS. ALL ROOF PENETRATIONS SHALL BE THROUGH THE CURBS, UNLESS NOTED OTHERWISE.
I. PARAPET ADJACENT TO MECHANICAL EQUIPMENT / ROOF ACCESS TO BE MINIMUM 42" HIGH WHEN WITHIN 10 FEET OF ROOF EDGE.

KEYED NOTES

1. 36"x30" ROOF ACCESS HATCH, BILCO, S-20, WITH BIL-GUARD 2.0 MODEL RL2-S PER DETAIL 07/A4.1
2. ROOF DRAIN AND OVERFLOW, REFER TO PLUMBING PLANS
3. CANT STRIP PER DETAIL 08/A4.1
4. TAPERED INSULATION CRICKET
5. ROOFTOP UNIT, REFER TO MECHANICAL PLANS.
6. CONDENSER, REFER TO EQUIPMENT AND ELECTRICAL PLAN
7. EXHAUST FAN, REFER TO MECHANICAL PLANS
8. STEEL AWNING BELOW, REFER TO SHEET A1.3 FOR DOWNSPOUT LOCATION
9. SATELLITE ON BALLASTED CURB
10. SHOP FORMED PRE-FINISHED METAL COPING, REFER TO DETAIL 01/A4.1
11. SHOP FORMED PRE-FINISHED METAL COPING, REFER TO DETAIL 01A/A4.1
12. SHOP FORMED PRE-FINISHED METAL COPING, REFER TO DETAIL 01/A4.3
13. FACE OF EXTERIOR WALL BELOW
14. FACE OF PARAPET WALL
15. STEEL AWNING GUTTER, REFER TO SHEET A1.3 FOR DOWNSPOUT LOCATION AND DETAIL 09/A4.2
16. ROOF JACK, REFER TO PLUMBING AND MECHANICAL PLANS
17. "L" SHAPE STEEL ANGLE FRAME, REFER TO STRUCTURAL PLANS

ROOFING

RF-1 TPO ROOFING MEMBRANE WITH PROTECTION BOARD AND R-40 RIGID INSULATION. REFER TO SPECIFICATIONS

MTL-2 PRE-FINISHED ROLLED ROOFING PANELS, REFER TO A7.3 SPECIFICATION SHEET

EQUIPMENT MAINTENANCE PATH

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

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SEAL:

10697 REGISTERED ARCHITECT
DANIEL B GOALWIN
STATE OF WASHINGTON
EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

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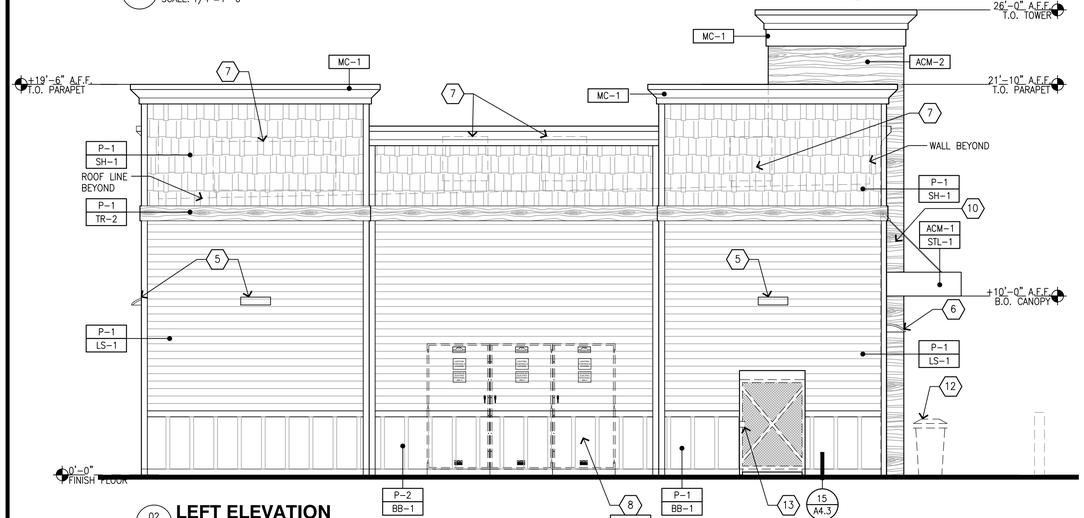
ROOF PLAN

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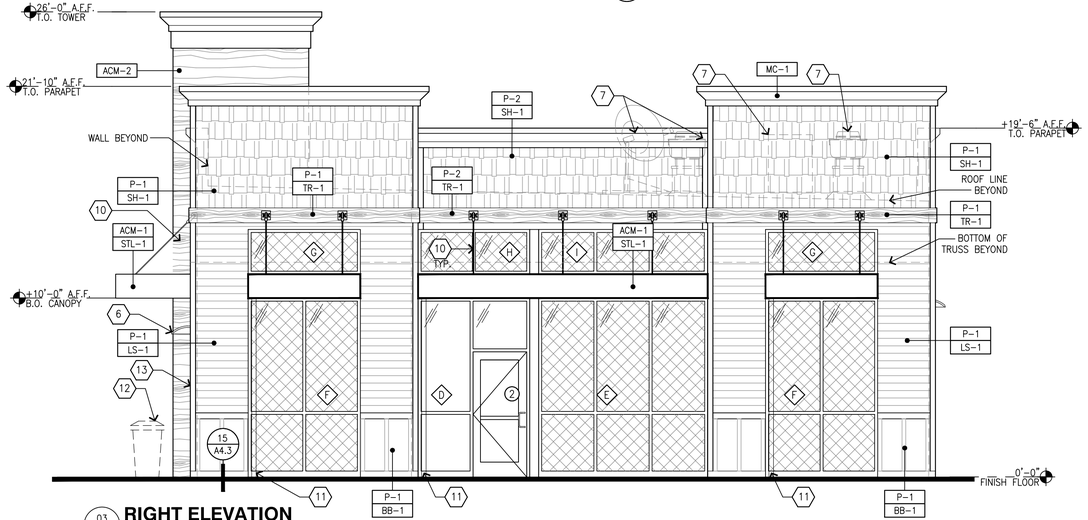
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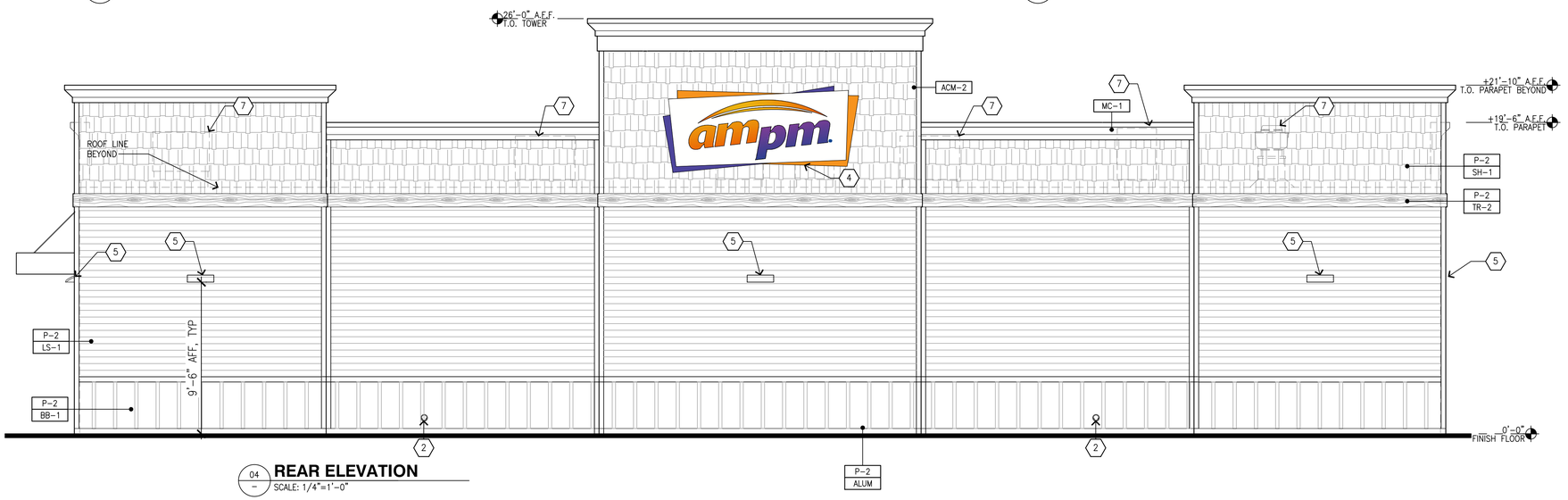
01 – **FRONT ELEVATION**
SCALE: 1/4"=1'-0"



02 – **LEFT ELEVATION**
SCALE: 1/4"=1'-0"



03 – **RIGHT ELEVATION**
SCALE: 1/4"=1'-0"



04 – **REAR ELEVATION**
SCALE: 1/4"=1'-0"

GENERAL NOTES

A. REVEAL LOCATIONS IN FINISH SYSTEM SHOWN ARE TO ALIGN AS CLOSELY AS POSSIBLE TO ELEVATIONS.

KEYED NOTES

1. ALUMINUM ENTRANCE AND STOREFRONT SYSTEM, REFER TO SHEET A5.1 FOR SPECIFICATION
2. OVERFLOW DRAIN
3. WALL POSTER, SIGNAGE UNDER SEPARATE PERMIT
4. LARGE INTERNALLY ILLUMINATED SURFACE MOUNTED WALL SIGN SIGNAGE UNDER SEPARATE PERMIT
5. WALL MOUNTED LED FIXTURE
6. WALL MOUNTED SIGN LIGHTING
7. ROOFTOP EQUIPMENT BEYOND
8. MAIN SWITCHGEAR
9. CO2 FILL/VENT BOX, VERIFY LOCATION PRIOR TO INSTALLATION
10. AWNING ROD AND CLEVIS. REFER TO SHEET A1.4 AND STRUCTURAL PLANS FOR DETAILS
11. CANOPY DOWNSPOUT PAINTED TO MATCH STOREFRONT, REFER TO CIVIL PLANS FOR CONTINUATION
12. NATURAL BROWN STONE AGGREGATE TRASH RECEPTACLE, REFER TO SHEET Q2.1 FOR SPECIFICATION
13. PORTABLE PROPANE TANK DISPLAY, REFER TO SHEET Q2.1 FOR SPECIFICATION
14. EMERGENCY SHUT OFF SWITCH, VERIFY LOCATION PRIOR TO INSTALLATION. REFER TO ELECTRICAL SHEETS FOR SPECIFICATIONS

COLOR LEGEND

P-1	BENJAMIN MOORE, 1077 "GREAT PLAINS GOLD", SATIN FINISH
P-2	BENJAMIN MOORE, 1030 "BRANDY CREAM", SATIN FINISH
P-3	BENJAMIN MOORE, 2121-30 "PEWTER", HIGH GLOSS FINISH

MATERIAL LEGEND

ACM-1	ALUMINUM COMPOSITE MATERIAL, PANTONE PMS 166c, "ORANGE"
ACM-2	ALUMINUM COMPOSITE MATERIAL, ALUCOBOND, "RUSTIC WALNUT"

MATERIAL LEGEND

ALUM	CLEAR ANODIZED ALUMINUM
STL-1	STEEL AWNING
BB-1	BATTEN AND BOARD WAINSCOT – JAMES HARDIE CEMENT FIBER BOARD HARDIE PANEL VERTICAL SIDING, SMOOTH, BOARD PORTION HARDIE TRIM, SMOOTH, 1"X3"X12'. BATTEN PORTION, SPACED 16" O.C, PROVIDE EVEN SPACES AT EACH END
LS-1	LAP SIDING – JAMES HARDIE FIBER BOARD HARDIE PLANK LAP SIDING, SMOOTH 7.25" WIDTH, 6" EXPOSURE
TR-1	TRIM OUTSIDE CORNERS & WAINSCOT CAP–JAMES HARDIE CEMENT FIBER BOARD HARDIE TRIM, SMOOTH, 5/4"X4"X12'
TR-2	BELLY BAND @ 14-3.5' TO BOTTOM – JAMES HARDIE CEMENT FIBER BOARD HARDIE TRIM, ROUGH TEXTURED, 5/4"X10"X12'.
SH-1	SHINGLE SIDING –JAMES HARDIE CEMENT FIBER BOARD HARDIESHINGLE SIDING, STAGGERED EDGE PANEL, ROUGH TEXTURED
MC-1	PRE-FINISHED , PRE-FORMED FULLY CLEATED METAL PARAPET CAP TO MATCH FINISH P-3

CLIENT: bp ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
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NO.	DATE	REVISION DESCRIPTION
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SEAL:
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Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 8 MPD's

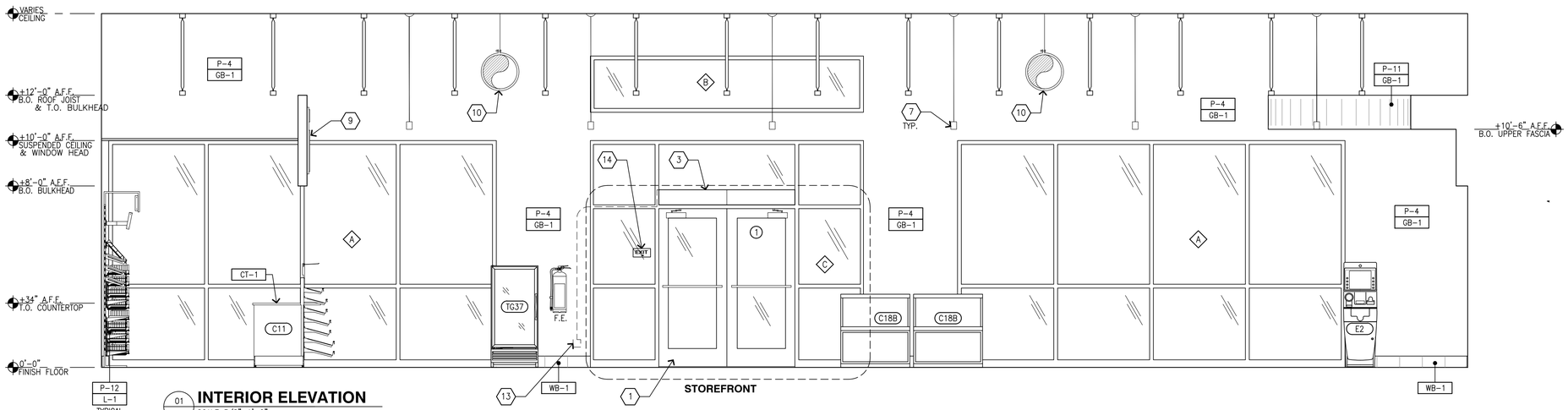
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SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON
FACILITY #TBD

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CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

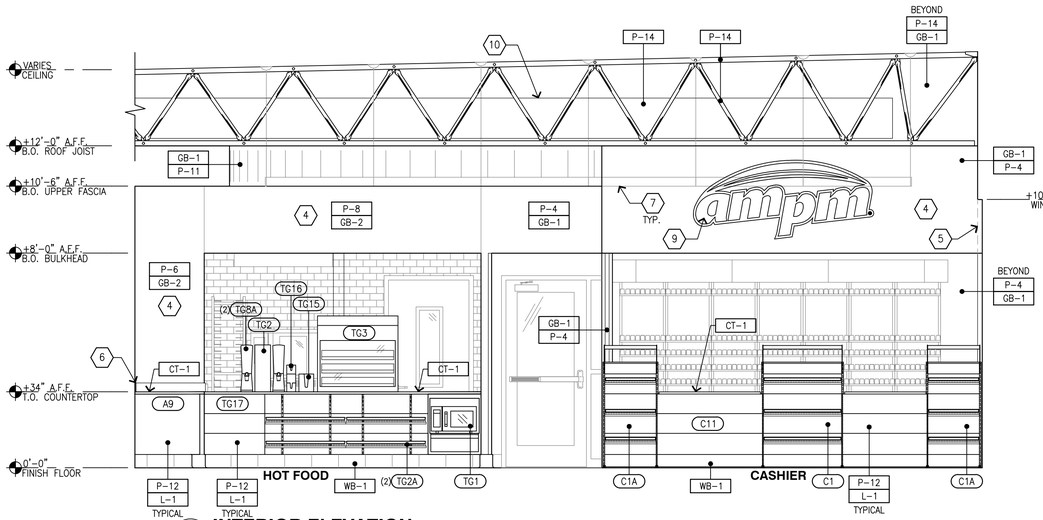
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EXTERIOR ELEVATIONS

SHEET NO:
A2.1

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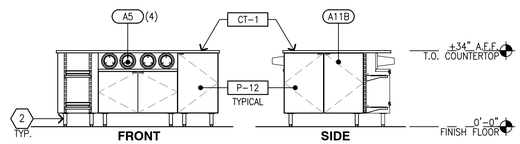


01 – **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"

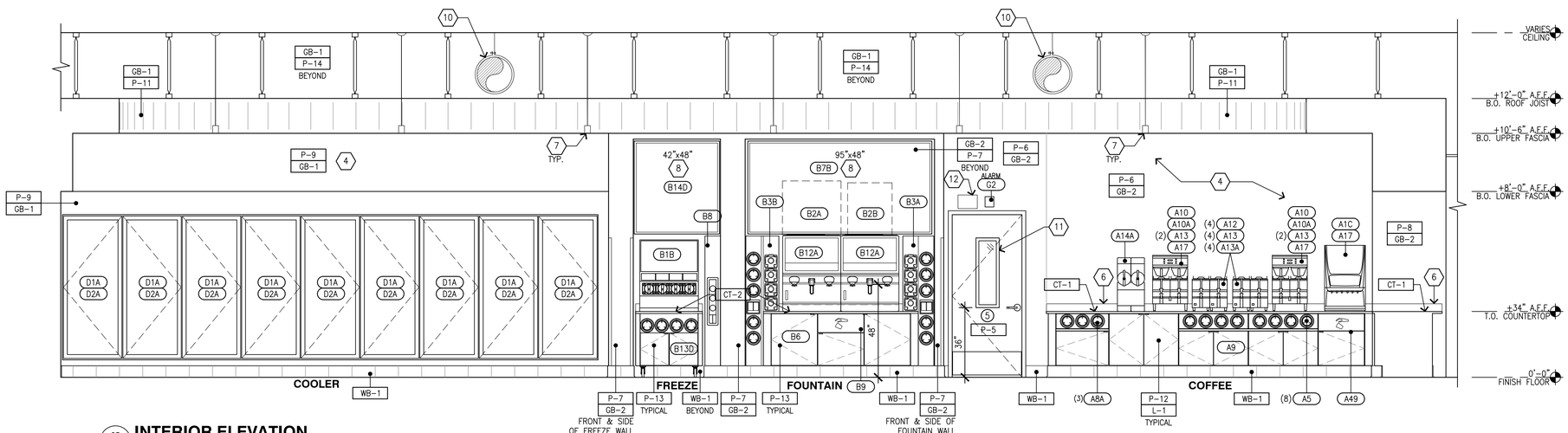


02 – **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"

03 – **NOT USED**
SCALE:



04 – **COFFEE CONDIMENT ELEVATION**
SCALE: 3/8"=1'-0"



05 – **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"

GENERAL NOTES

A. REFER TO SHEET Q1.1 FOR EQUIPMENT PLAN.
B. REFER TO SHEET Q2.1 FOR EQUIPMENT SCHEDULE.
C. ALL EQUIPMENT SHALL MEET LOCAL ACCESSIBILITY REQUIREMENTS.
D. PROVIDE STAINLESS STEEL CORNER GUARDS AT EDGES BELOW 6'-0" AND FULL HEIGHT AT CORNERS WITH WALL TILE.
E. PROVIDE 4" HIGH BACKSPLASH AT ALL COUNTERTOPS THAT TERMINATE AT WALL. BACKSPLASH TO MATCH COUNTERTOP MATERIAL.

KEY NOTES

1. ALUMINUM ENTRANCE AND STOREFRONT SYSTEM, REFER TO SHEET A5.1 & SPECIFICATION.
2. 6" STAINLESS STEEL LEGS PROVIDED BY SHOPCO
3. AIR CURTAIN WITH TRANSOM MOUNTING BRACKETS #B0042, REFER TO MECHANICAL PLANS FOR AIR CURTAIN SPECIFICATION
4. VINYL GRAPHIC PROVIDED & INSTALLED BY SIGN CONTRACTOR
5. BREAK METAL CLOSURE AT BULKHEAD AND STOREFRONT VERTICAL MULLION. REFER TO DETAIL 11/A4.2.
6. 4" BACKSPLASH TO MATCH COUNTERTOP FINISH
7. LED SUSPENDED LINEAR FIXTURE MOUNTED 10'-6" A.F.F., REFER TO SHEET A1.3 AND ELECTRICAL PLANS
8. HINGED ILLUMINATED GRAPHICS PANEL
9. SINTRA GRAPHIC PANEL PROVIDED & INSTALLED BY SIGN CONTRACTOR
10. EXPOSED DUCT RUNS TO BE PAINTED P-14 TO MATCH CEILING. REFER TO MECHANICAL PLANS FOR HVAC LAYOUT
11. 12"x36" VISION PANEL
12. CO2 ALARM WARNING SIGN MOUNTED NEXT TO THE UNIT
13. J-BOX FOR AIR CURTAIN AND CONCEALED CONDUIT IN WALL FRAMING. AT STOREFRONT JAMB AND MULLION, RUN CONDUIT IN METALLIC CONDUIT WITH METALLIC FITTINGS TO MATCH STOREFRONT UNTIL IT REACHES THE CONNECTION POINT FOR THE AIR CURTAIN.
14. TACTILE EXIT SIGN WITH BRAILLE MOUNTED ON INTERIOR SIDE. REFER TO DETAIL 10/G1.2 FOR MOUNTING REQUIREMENTS

FINISH SYMBOLS

PAINT COLOR

- P-4 BENJAMIN MOORE, 1079, "BAYSHORE BEIGE" EGGSHELL FINISH
- P-5 BENJAMIN MOORE, 2121-70, "CHANTILLY LACE" SEMI-GLOSS FINISH
- P-6 BENJAMIN MOORE, 2096-30, "GRANDFATHER CLOCK BROWN" SEMI-GLOSS FINISH
- P-7 BENJAMIN MOORE, 2049-50, "SPECTRA BLUE" SEMI-GLOSS FINISH
- P-8 BENJAMIN MOORE, 2019-30, "SUNFLOWER" SEMI-GLOSS FINISH
- P-9 BENJAMIN MOORE, 768, "ATLANTIS BLUE" EGGSHELL FINISH
- P-10 BENJAMIN MOORE, PM-28, "LINEN WHITE" SEMI-GLOSS FINISH
- P-11 BENJAMIN MOORE, 2132-60, "METALLIC SILVER" EGGSHELL FINISH
- P-12 RAL 9005, "JET BLACK"
- P-13 RAL 9006, "WHITE ALUMINUM" METALLIC FINISH
- P-14 BENJAMIN MOORE, 2108-40, "STARDUST" EGGSHELL FINISH

NOTE: FOOD SERVICE AREAS AND RESTROOMS SHALL BE SEMI-GLOSS FINISH

LAMINATE

- L-1 WOOD PLASTIC LAMINATE – FORMICA #9484-NG OXIDIZED BEAMWOOD NATURAL GRAIN

COUNTERTOP

- CT-1 SOLID SURFACE – FORMICA, LUNA SAND #757 (EASED EDGE)
  SOLID SURFACE – BASIX INTERNATIONAL, PRIMA DECORA, ACADIA (EASED EDGE)
- CT-2 STAINLESS STEEL

SUBSTRATE

- GB-1 TYPE: 5/8" GYPSUM BOARD
- GB-2 TYPE: 5/8" WATER-RESISTANT GYPSUM BOARD
- PLY-1 TYPE: 5/8" PLYWOOD
- PLY-2 TYPE: 5/8" MDO PLYWOOD

WALL BASE

- WB-1 CERAMIC SANITARY COVE BASE
  MFR: DALTILE
  PRODUCT: PORTFOLIO
  COLOR: PF08 "CHOCOLATE"
  SHAPE: P36C9T (CORNER- PC36C9T)
  SIZE: 6"x12"
  GROUT: 1/8" #540 TRUFFLE BY CUSTOM BUILDING PRODUCTS
- WB-2 QUARRY COVE BASE
  MFR: DALTILE
  PRODUCT: QUARRY
  COLOR: QQ40
  SHAPE: Q-3565
  SIZE: 5"x6"
  GROUT: 3/8" #540 TRUFFLE BY CUSTOM BUILDING PRODUCTS

CLIENT: bp / ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	2/6/24	PERMIT RESUBMITTAL
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4		
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10		
11		
12		

SEAL: 10697 REGISTERED ARCHITECT DANIEL B GOALWIN STATE OF WASHINGTON
EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm FUEL CANOPY w/ 6 MPD's

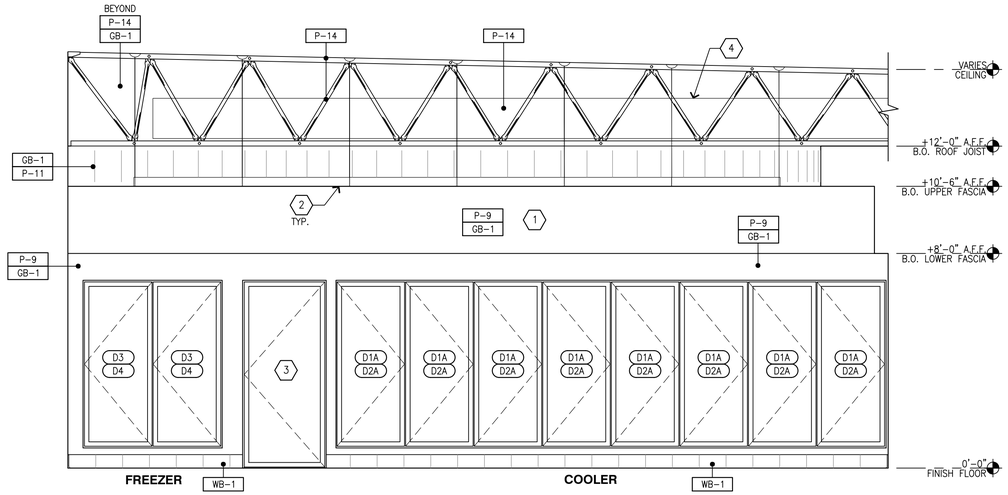
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1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

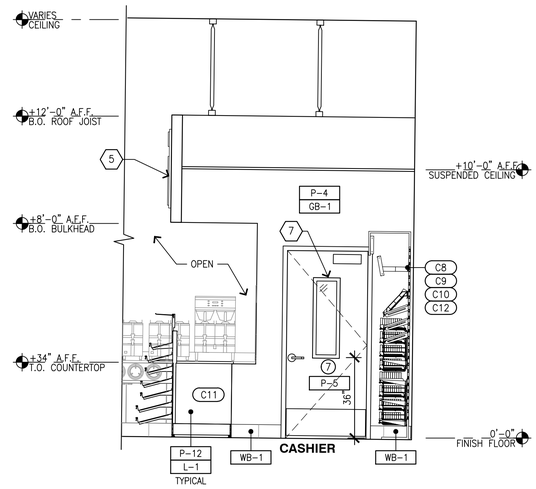
DESIGNED BY:	ALLIANCE ZADM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE FM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
INTERIOR ELEVATIONS

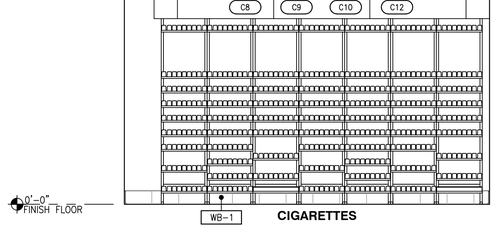
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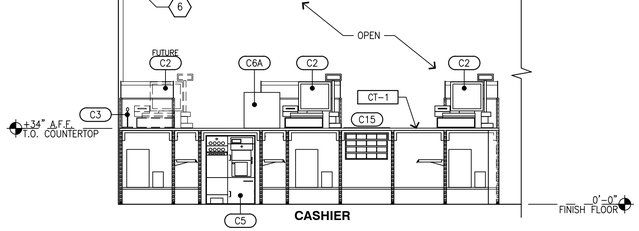
01 — **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"



02 — **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"



03 — **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"



04 — **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"

GENERAL NOTES

A. REFER TO SHEET Q1.1 FOR EQUIPMENT PLAN.
B. REFER TO SHEET Q2.1 FOR EQUIPMENT SCHEDULE.
C. ALL EQUIPMENT SHALL MEET LOCAL ACCESSIBILITY REQUIREMENTS.
D. PROVIDE STAINLESS STEEL CORNER GUARDS AT EDGES BELOW 6'-0" AND FULL HEIGHT AT CORNERS WITH WALL TILE.
E. PROVIDE 4" HIGH BACKSPLASH AT ALL COUNTERTOPS THAT TERMINATE AT WALL. BACKSPLASH TO MATCH COUNTERTOP MATERIAL.

KEY NOTES

1. VINYL GRAPHIC PROVIDED & INSTALLED BY SIGN CONTRACTOR
2. LED SUSPENDED LINEAR FIXTURE MOUNTED 10'-6" A.F.F., REFER TO SHEET A1.3 AND ELECTRICAL PLANS
3. WALK-IN COOLER GLASS ACCESS DOOR, REFER TO SHEET Q1.2
4. EXPOSED DUCT RUNS TO BE PAINTED P-14 TO MATCH CEILING. REFER TO MECHANICAL PLANS FOR HVAC LAYOUT
5. SINTRA GRAPHIC PANEL PROVIDED & INSTALLED BY SIGN CONTRACTOR
6. BREAK METAL CLOSURE AT BULKHEAD AND STOREFRONT VERTICAL MULLION. REFER TO DETAIL X/X.
7. 12"x36" VISION PANEL

FINISH SYMBOLS

PAINT COLOR

- P-4 — BENJAMIN MOORE, 1079, "BAYSHORE BEIGE" EGGSHELL FINISH
- P-5 — BENJAMIN MOORE, 2121-70, "CHANTILLY LACE" SEMI-GLOSS FINISH
- P-6 — BENJAMIN MOORE, 2096-30, "GRANDFATHER CLOCK BROWN" SEMI-GLOSS FINISH
- P-7 — BENJAMIN MOORE, 2049-50, "SPECTRA BLUE" SEMI-GLOSS FINISH
- P-8 — BENJAMIN MOORE, 2019-30, "SUNFLOWER" SEMI-GLOSS FINISH
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- P-10 — BENJAMIN MOORE, PM-28, "LINEN WHITE" SEMI-GLOSS FINISH
- P-11 — BENJAMIN MOORE, 2132-60, "METALLIC SILVER" EGGSHELL FINISH
- P-12 — RAL 9005, "JET BLACK"
- P-13 — RAL 9006, "WHITE ALUMINUM" METALLIC FINISH
- P-14 — BENJAMIN MOORE, 2108-40, "STARDUST" EGGSHELL FINISH

NOTE: FOOD SERVICE AREAS AND RESTROOMS SHALL BE SEMI-GLOSS FINISH

LAMINATE

- L-1 — WOOD PLASTIC LAMINATE - FORMICA #9484-NG OXIDIZED BEAMWOOD NATURAL GRAIN

COUNTERTOP

- CT-1 — SOLID SURFACE - FORMICA, LUNA SAND #757 (EASED EDGE)
  SOLID SURFACE - BASIX INTERNATIONAL PRIMA DECORA ACADIA (EASED EDGE)
- CT-2 — STAINLESS STEEL

SUBSTRATE

- GB-1 — TYPE: 5/8" GYPSUM BOARD
- GB-2 — TYPE: 5/8" WATER-RESISTANT GYPSUM BOARD
- PLY-1 — TYPE: 5/8" PLYWOOD
- PLY-2 — TYPE: 5/8" MDO PLYWOOD

WALL BASE

- WB-1 — CERAMIC SANITARY COVE BASE
  MFR: DALTILE
  PRODUCT: PORTFOLIO
  COLOR: PF08 "CHOCOLATE"
  SHAPE: P36C9T (CORNER- PC36C9T)
  SIZE: 6"x12"
  GROUT: 1/8" #540 TRUFFLE BY CUSTOM BUILDING PRODUCTS
- WB-2 — QUARRY COVE BASE
  MFR: DALTILE
  PRODUCT: QUARRY
  COLOR: QQ40
  SHAPE: Q-3565
  SIZE: 5"x6"
  GROUT: 3/8" #540 TRUFFLE BY CUSTOM BUILDING PRODUCTS

CLIENT: bp / ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	2/6/24	PERMIT RESUBMITTAL
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12		

SEAL:
10697 REGISTERED ARCHITECT
DANIEL B COALWIN
STATE OF WASHINGTON
EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

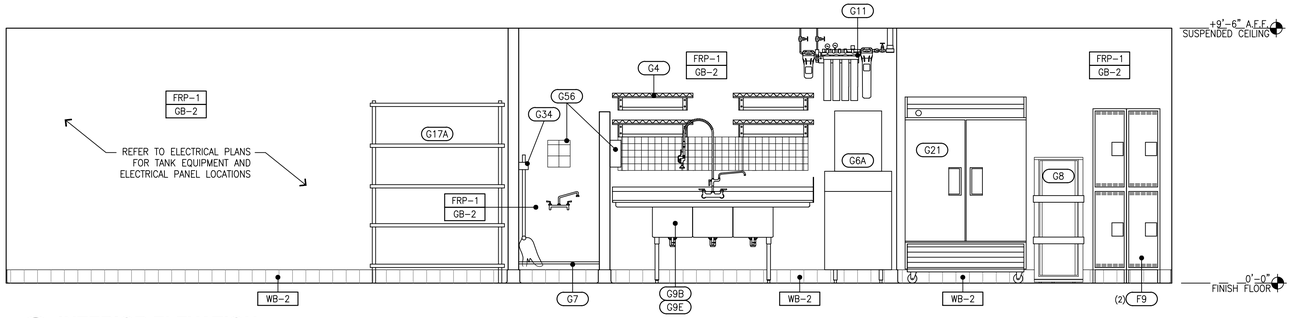
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1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

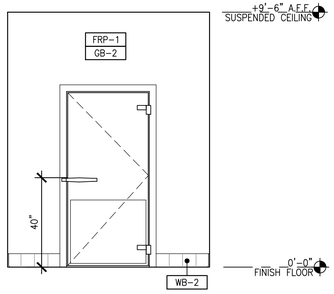
DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
INTERIOR ELEVATIONS

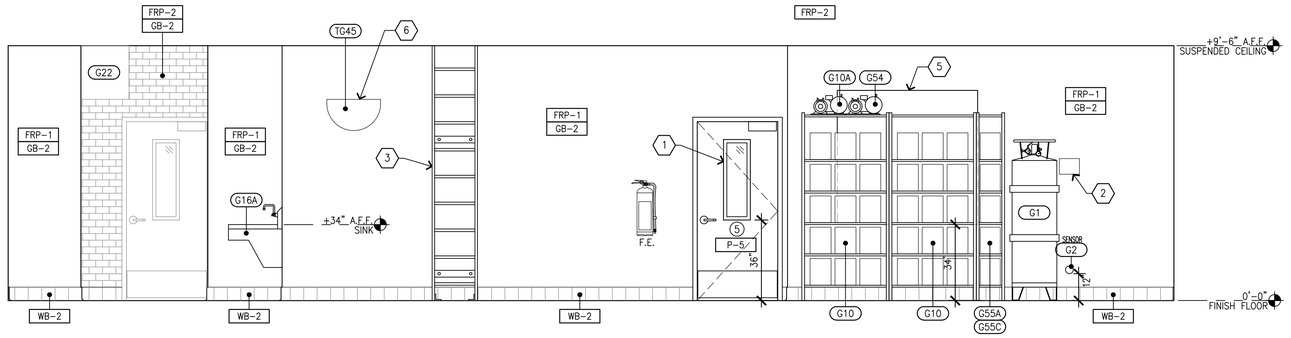
SHEET NO:
A2.4



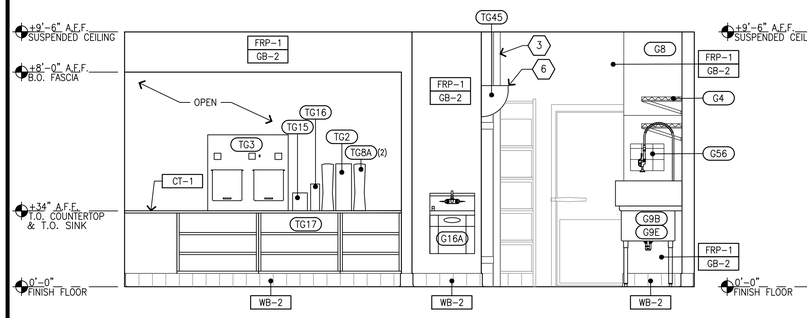
01 — **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"



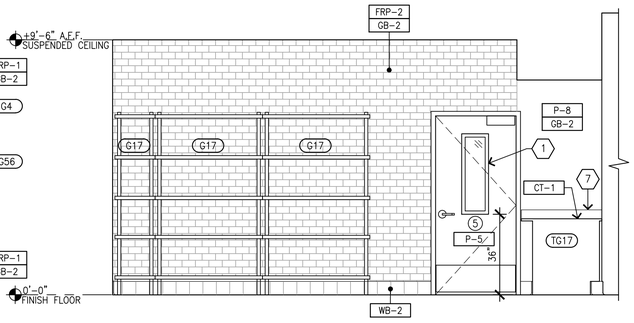
02 — **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"



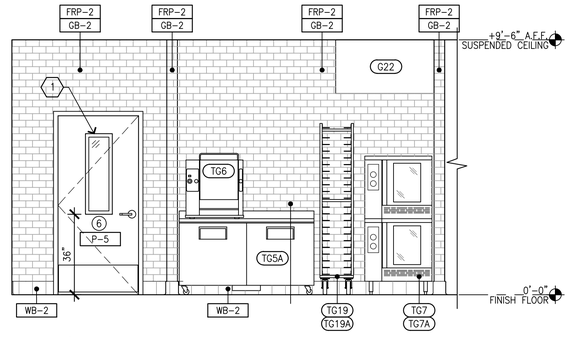
03 — **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"



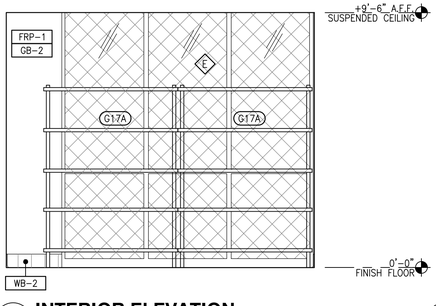
04 — **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"



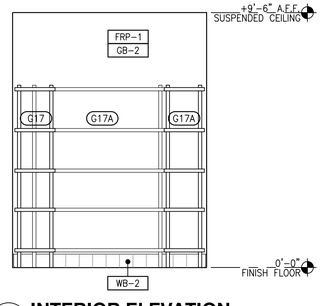
05 — **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"



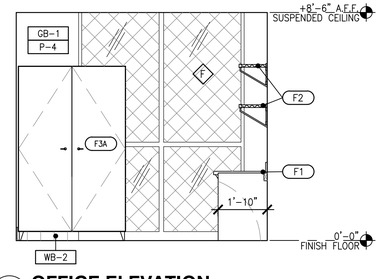
06 — **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"



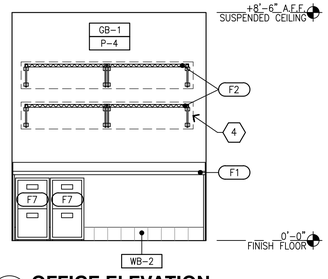
07 — **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"



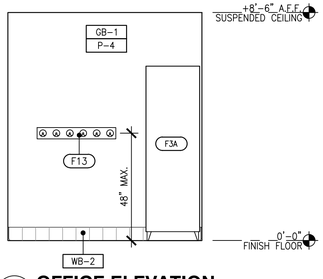
08 — **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"



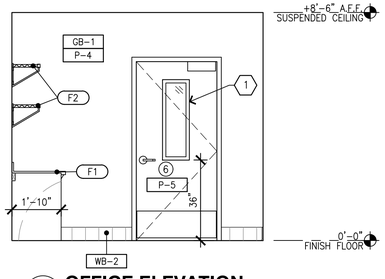
09 — **OFFICE ELEVATION**
SCALE: 3/8"=1'-0"



10 — **OFFICE ELEVATION**
SCALE: 3/8"=1'-0"



11 — **OFFICE ELEVATION**
SCALE: 3/8"=1'-0"



12 — **OFFICE ELEVATION**
SCALE: 3/8"=1'-0"

GENERAL NOTES

A. REFER TO SHEET Q1.1 FOR EQUIPMENT PLAN.
B. REFER TO SHEET Q2.1 FOR EQUIPMENT SCHEDULE.
C. ALL EQUIPMENT SHALL MEET LOCAL ACCESSIBILITY REQUIREMENTS.
D. PROVIDE STAINLESS STEEL CORNER GUARDS AT EDGES BELOW 6'-0" AND FULL HEIGHT AT CORNERS WITH WALL TILE.
E. PROVIDE PVC TRIM AT ALL FRP EDGES.
F. PROVIDE 4" HIGH BACKSPLASH AT ALL COUNTERTOPS THAT TERMINATE AT WALL. BACKSPLASH TO MATCH COUNTERTOP MATERIAL.

KEY NOTES

1. 12"x36" VISION PANEL
2. CO2 ALERT SENSOR WARNING SIGN MOUNTED AT 60" O.C.
3. ROOF LADDER, REFER TO DETAIL 07/A4.1
4. G.C. TO PROVIDE BLOCKING FOR SHELVING AS REQUIRED BY MFR, DASHED LINES ON ELEVATIONS REPRESENT APPROXIMATE LOCATION OF BLOCKING.
5. 64"x60" ACCESS OPENING AT WALL BEHIND FOUNTAIN @ 34" A.F.F.
6. UV FLY LIGHT FURNISHED AND INSTALLED BY VENDOR. TOP EDGE 24" FROM CEILING
7. 4" BACKSPLASH TO MATCH COUNTERTOP FINISH

FINISH SYMBOLS

PAINT COLOR

P-4 BENJAMIN MOORE, 1079, "BAYSHORE BEIGE" EGGSHELL FINISH

P-5 BENJAMIN MOORE, 2121-70, "CHANTILLY LACE" SEMI-GLOSS FINISH

P-6 BENJAMIN MOORE, 2096-30, "GRANDFATHER CLOCK BROWN" SEMI-GLOSS FINISH

P-7 BENJAMIN MOORE, 2049-50, "SPECTRA BLUE" SEMI-GLOSS FINISH

P-8 BENJAMIN MOORE, 2019-30, "SUNFLOWER" SEMI-GLOSS FINISH

P-11 BENJAMIN MOORE, 2132-60, "METALLIC SILVER" EGGSHELL FINISH

NOTE: FOOD SERVICE AREAS AND RESTROOMS SHALL BE SEMI-GLOSS FINISH

WALL PANEL

FRP-1 FIBER REINFORCED PANEL – CRANE COMPOSITES, GLASBORD, PEBBLED EMBOSSED TEXTURE, WHITE (85)

FRP-2 FIBER REINFORCED PANEL– MARLITE SYMMETRIX, BLUESKY ADVANCED FINISHING, SUBWAY TILE, (C 100-063 WHITE)

COUNTERTOP

CT-1 SOLID SURFACE – FORMICA, LUNA SAND #757 (EASED EDGE)

CT-2 STAINLESS STEEL

SUBSTRATE

GB-1 TYPE: 5/8" GYPSUM BOARD

GB-2 TYPE: 5/8" WATER-RESISTANT GYPSUM BOARD

PLY-1 TYPE: 5/8" PLYWOOD

PLY-2 TYPE: 5/8" MDO PLYWOOD

WALL BASE

WB-1 CERAMIC SANITARY COVE BASE
MFR: DALTILE
PRODUCT: PORTFOLIO
COLOR: PF08 "CHOCOLATE"
SHAPE: P36C9T (CORNER– PC36C9T)
SIZE: 6"x12"
GROUT: 1/8" #540 TRUFFLE BY CUSTOM BUILDING PRODUCTS

WB-2 QUARRY COVE BASE
MFR: DALTILE
PRODUCT: QUARRY
COLOR: 0040
SHAPE: Q-3565
SIZE: 5"x6"
GROUT: 3/8" #540 TRUFFLE BY CUSTOM BUILDING PRODUCTS

CLIENT:

ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
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SEAL:

10697 REGISTERED ARCHITECT
DANIEL B COALWIN
STATE OF WASHINGTON
EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

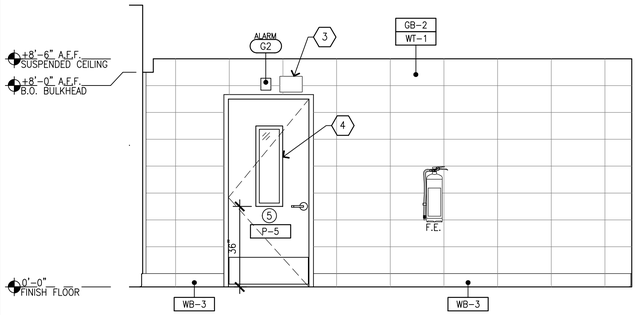
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FACILITY #7184

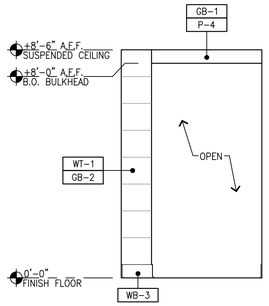
DESIGNED BY:	ALLIANCE Z&DM:
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DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
INTERIOR ELEVATIONS

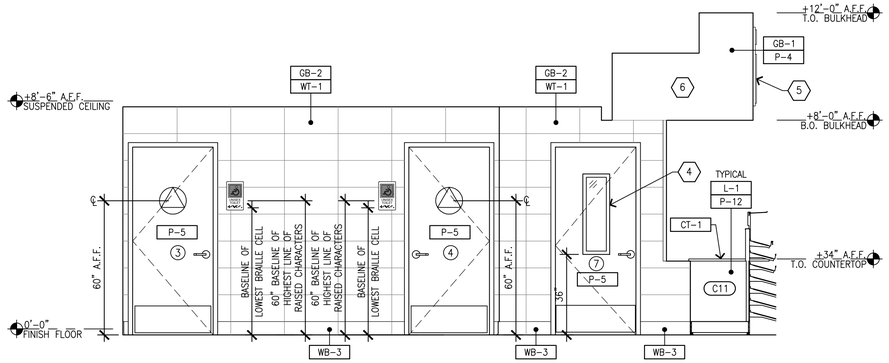
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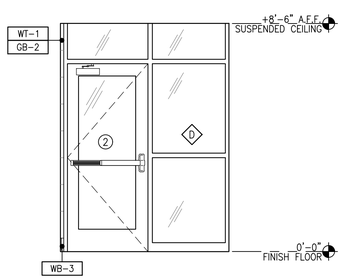
01 – **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"



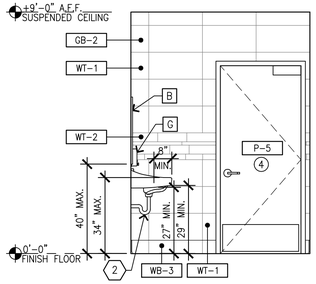
02 – **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"



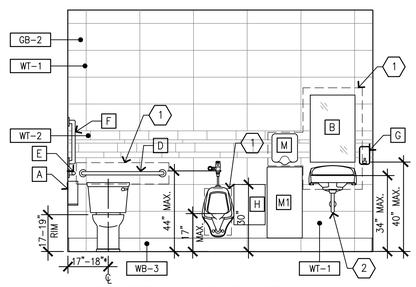
03 – **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"



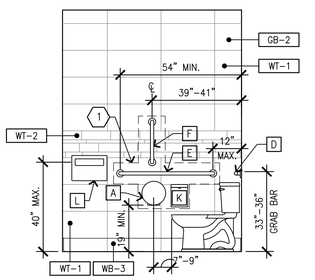
04 – **INTERIOR ELEVATION**
SCALE: 3/8"=1'-0"



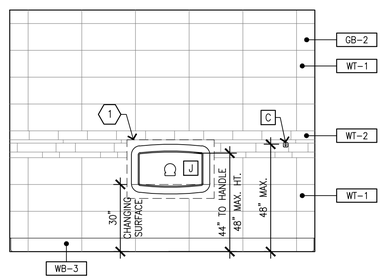
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SCALE: 3/8"=1'-0"



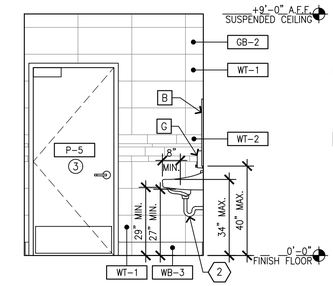
06 – **RESTROOM ELEVATION**
SCALE: 3/8"=1'-0"



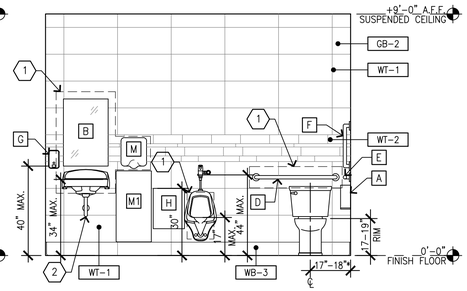
07 – **RESTROOM ELEVATION**
SCALE: 3/8"=1'-0"



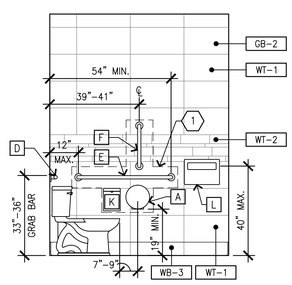
08 – **RESTROOM ELEVATION**
SCALE: 3/8"=1'-0"



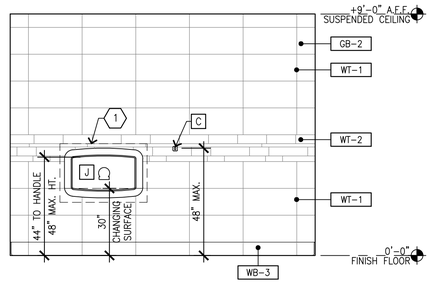
05 – **RESTROOM ELEVATION**
SCALE: 3/8"=1'-0"



06 – **RESTROOM ELEVATION**
SCALE: 3/8"=1'-0"

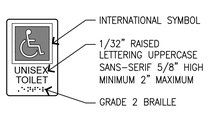


07 – **RESTROOM ELEVATION**
SCALE: 3/8"=1'-0"

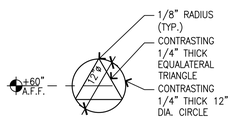


08 – **RESTROOM ELEVATION**
SCALE: 3/8"=1'-0"

NOTE:
EDGES OF SIGNS SHALL BE ROUNDED, CHAMFERED OR EASED. SIGNS SHALL BE CONTRASTING IN COLOR FROM DOOR



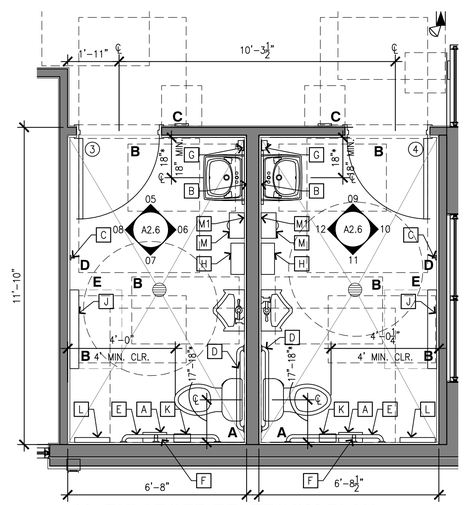
ROOM IDENTIFICATION SIGN



DOOR SYMBOL

RESTROOM ACCESSORIES

TYPE	QTY	ITEM	MANUFACTURER	MODEL	DESCRIPTION
A	2	TOILET TISSUE DISPENSER	BOBRICK	B-2890	SINGLE JUMBO-ROLL SURFACE MOUNTED, SATIN-FINISH STAINLESS STEEL
B	2	MIRROR	SENTRY		20"x30" SEAMED EDGE MIRROR W/ FOAM BACKING AND PLEXIGLASS SHIELD, POLISHED STAINLESS STEEL
C	2	UTILITY HOOK	BOBRICK	B-6707	SATIN-FINISH STAINLESS STEEL
D	2	GRAB BAR (REAR)	BOBRICK	B-6806 x 36	1-1/2" DIA. 18 GA. SATIN-FINISH STAINLESS TUBING W/ CONCEALED MOUNTING
E	2	GRAB BAR (SIDE)	BOBRICK	B-6806 x 42	1-1/2" DIA. 18 GA. SATIN-FINISH STAINLESS TUBING W/ CONCEALED MOUNTING
F	2	GRAB BAR (VERTICAL) VERIFY LOCAL & STATE BLDG CODE REQ.	BOBRICK	B-6806 x 18	1-1/2" DIA. 18 GA. SATIN-FINISH STAINLESS TUBING W/ CONCEALED MOUNTING
G	2	SOAP DISPENSER	BOBRICK	B-2111	SURFACE MOUNTED VERTICAL TANK SATIN-FINISH STAINLESS STEEL
H	2	WASTE RECEPTACLE	BOBRICK	B-279	SURFACE MOUNTED UNIT, SATIN-FINISH STAINLESS STEEL
J	2	BABY CHANGING STATION	KOALA KARE	KB200-00	CREAM COLOR POLYPROPYLENE CABINET AND BED
K	2	SANITARY NAPKIN DISPOSAL	BOBRICK	B-270	SURFACE MOUNTED SATIN-FINISH STAINLESS STEEL
L	2	SEAT COVER DISPENSER	BOBRICK	B-4221	SURFACE MOUNTED SATIN-FINISH STAINLESS STEEL
M	2	HAND DRYER	NEWTON	XL-SB	XLERATOR, SURFACE MOUNTED BRUSHED STAINLESS STEEL
M1	2	HAND DRYER WALL GUARD	EXCEL	89S	XLERATOR, BRUSHED STAINLESS STEEL; 31.75" x 15.75"



13 – **ENLARGED RESTROOM PLAN**
SCALE: 3/8"=1'-0"
* DENOTES THE FACE OF FINISH

GENERAL NOTES

A. REFER TO SHEET Q1.1 FOR EQUIPMENT PLAN.
B. REFER TO SHEET Q2.1 FOR EQUIPMENT SCHEDULE.
C. ALL EQUIPMENT SHALL MEET LOCAL ACCESSIBILITY REQUIREMENTS.
D. PROVIDE STAINLESS STEEL CORNER GUARDS AT EDGES BELOW 6'-0" AND FULL HEIGHT AT CORNERS WITH WALL TILE.
E. PROVIDE PVC TRIM AT ALL FRP EDGES.
F. PROVIDE 4" HIGH BACKSPLASH AT ALL COUNTERTOPS THAT TERMINATE AT WALL. BACKSPLASH TO MATCH COUNTERTOP MATERIAL.

KEYED NOTES

1. G.C. TO PROVIDE BLOCKING FOR RESTROOM ACCESSORIES AS REQUIRED BY MFR, DASHED LINES ON ELEVATIONS REPRESENT APPROXIMATE LOCATION OF BLOCKING.
2. G.C. TO INSTALL TRUEBRO LAVGUARD– UNDERSINK PIPE COVERS FOR SUPPLY AND DRAIN VALVE.
3. CO2 ALARM WARNING SIGN MOUNTED NEXT TO THE UNIT.
4. 12"x36" VISION PANEL.
5. SINTRA GRAPHIC PANEL PROVIDED & INSTALLED BY SIGN CONTRACTOR
6. VINYL GRAPHIC PROVIDED & INSTALLED BY SIGN CONTRACTOR

FINISH SYMBOLS

PAINT COLOR

P-4 BENJAMIN MOORE, 1079, "BAYSHORE BEIGE"
EGGSHELL FINISH

P-5 BENJAMIN MOORE, 2121-70, "CHANTILLY LACE"
SEMI-GLOSS FINISH

NOTE: FOOD SERVICE AREAS AND RESTROOMS SHALL BE SEMI-GLOSS FINISH

WALL TILE

WT-1 PORCELAIN TILE
MFR: DALTILE
PRODUCT: PORTFOLIO
COLOR: PF11 "NOCE"
SIZE: 12"x24"
GROUT: 1/8" #386 OYSTER GRAY BY CUSTOM BUILDING PRODUCTS

WT-2 MOSAIC TILE
MFR: DALTILE
PRODUCT: PORTFOLIO
COLOR: PF13 "SEASON BLEND"– RANDOM LINEAR MOSAIC
SIZE: 12"x27" SHEET (MECH MOUNTED)
GROUT: 1/8" #386 OYSTER GRAY BY CUSTOM BUILDING PRODUCTS

LAMINATE

L-1 WOOD PLASTIC LAMINATE – FORMICA #9484-NG OXIDIZED BEAMWOOD NATURAL GRAIN

COUNTERTOP

CT-1 SOLID SURFACE – FORMICA, LUNA SAND #757 (EASED EDGE)
SOLID SURFACE – BASIX INTERNATIONAL, PRIMA DECORA, ACADIA (EASED EDGE)

SUBSTRATE

GB-1 TYPE: 5/8" GYPSUM BOARD
GB-2 TYPE: 5/8" WATER-RESISTANT GYPSUM BOARD
PLY-1 TYPE: 5/8" PLYWOOD
PLY-2 TYPE: 5/8" MDO PLYWOOD

WALL BASE

WB-1 CERAMIC SANITARY COVE BASE
MFR: DALTILE
PRODUCT: PORTFOLIO
COLOR: PF08 "CHOCOLATE"
SHAPE: P36C9T (CORNER– PC36C9T)
SIZE: 6"x12"
GROUT: 1/8" #540 TRUFFLE BY CUSTOM BUILDING PRODUCTS

WB-2 QUARRY COVE BASE
MFR: DALTILE
PRODUCT: QUARRY
COLOR: 0040
SHAPE: Q-3565
SIZE: 5"x6"
GROUT: 3/8" #540 TRUFFLE BY CUSTOM BUILDING PRODUCTS

WB-3 PORCELAIN COVE BASE
MFR: DALTILE
PRODUCT: PORTFOLIO
COLOR: PF11 "NOCE"
SHAPE: P36C9T (CORNER– PC36C9T)
SIZE: 6"x24"
GROUT: 1/8" #386 OYSTER GRAY BY CUSTOM BUILDING PRODUCTS

RESTROOM CLEAR FLOOR SPACE

	ITEM	SPACE REQUIRED, MIN CLR
A	TOILET	60" X 59"
B	SINK, URINAL, BABY CHANGER	30" X 48"
C	PUSH SIDE OF 3'-0" DOOR FRONT APPROACH	48" X 48" 12" MIN CLR ON PUSH SIDE
D	PULL SIDE OF 3'-0" DOOR LATCH SIDE APPROACH	60" X 54" 18" MIN CLR ON PULL SIDE
E	TURNING SPACE	60" DIA.

THIS DRAWING IS PROTOTYPICAL AND MUST BE REVIEWED AND ADAPTED FOR LOCAL & STATE BUILDING CODES, TYP.

TEMPLATE

CLIENT:
bp
ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

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SEAL:
10697 REGISTERED ARCHITECT
DANIEL B GOALWIN
STATE OF WASHINGTON
EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

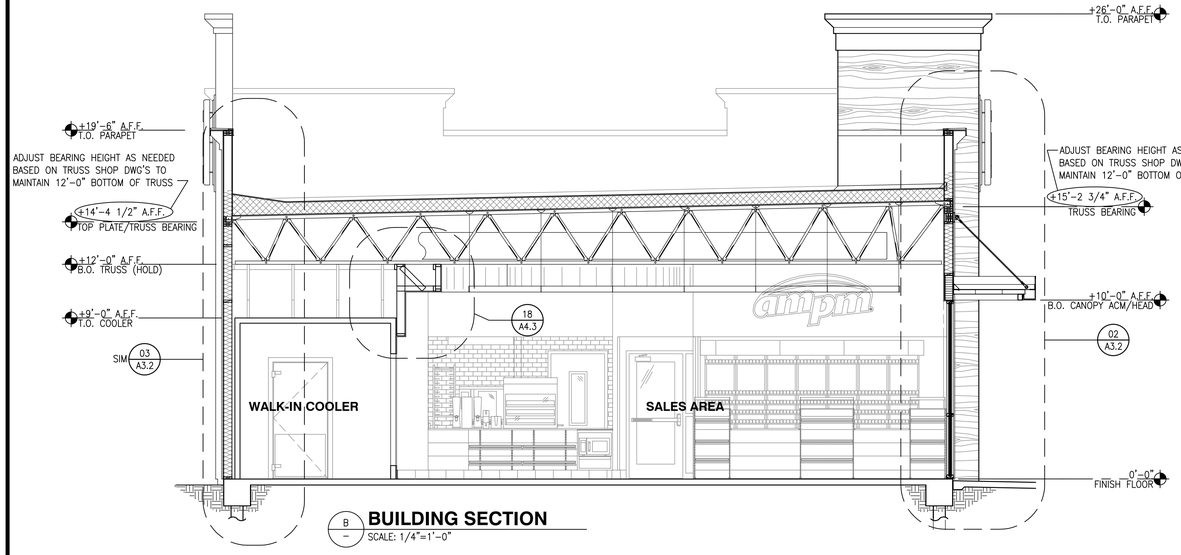
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INTERIOR ELEVATIONS

SHEET NO:
A2.6



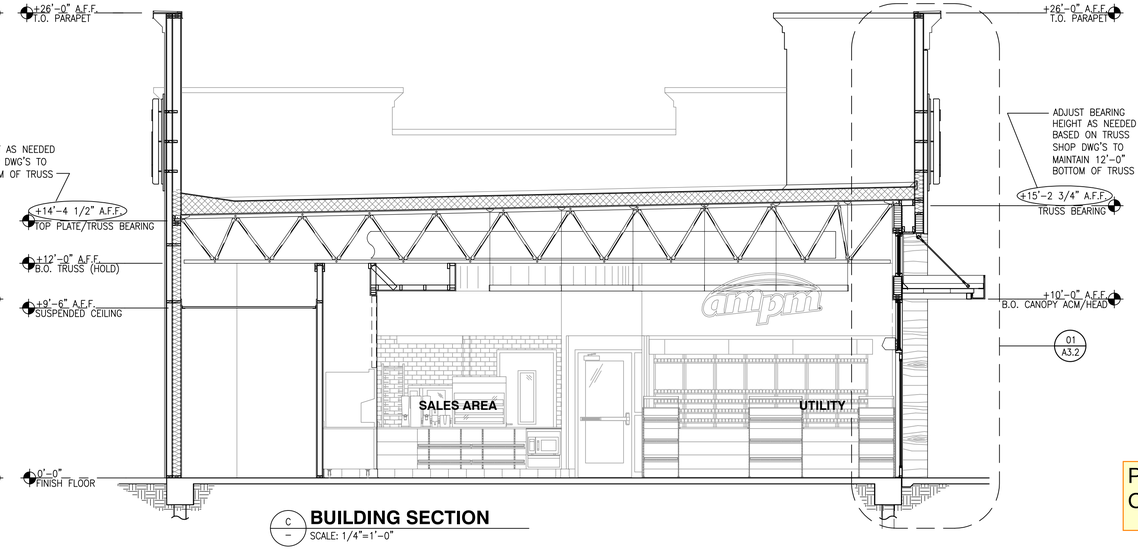
A — SCALE: 1/4"=1'-0"

BUILDING SECTION



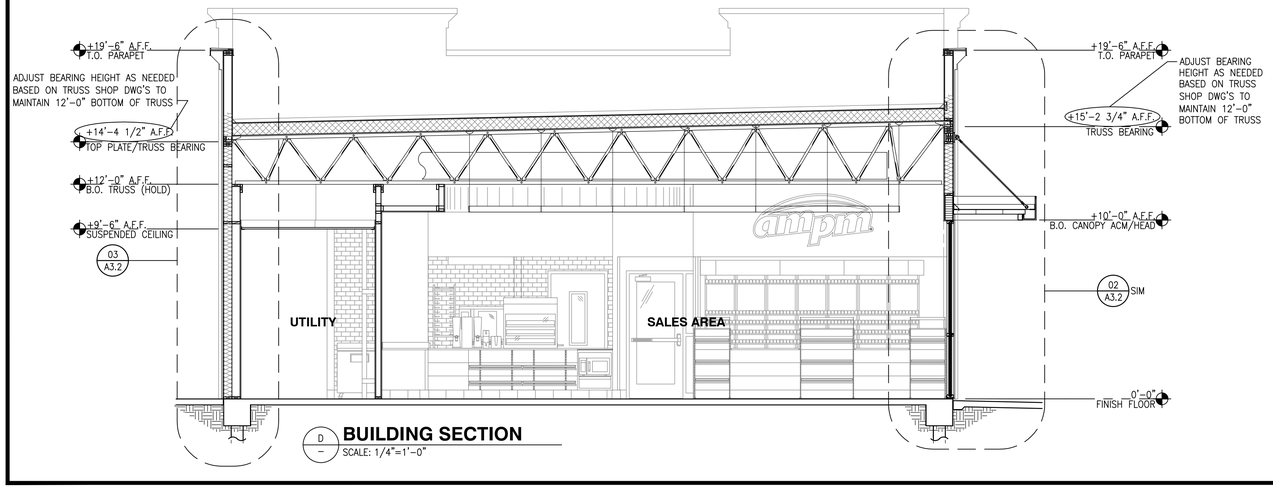
B — SCALE: 1/4"=1'-0"

BUILDING SECTION



C — SCALE: 1/4"=1'-0"

BUILDING SECTION



D — SCALE: 1/4"=1'-0"

BUILDING SECTION

GENERAL NOTES

A. SEE GENERAL PROJECT NOTES G1.1
B. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL FLASHING AND FOR ALL ROOF EQUIPMENT CURBS.
C. GENERAL CONTRACTOR RESPONSIBLE FOR FURNISHING AND LOCATING ROOF TOP EQUIPMENT.
D. SEE STRUCTURAL DRAWINGS FOR COMPLETE NOTES AND STRUCTURAL FRAMING DETAILS.
E. REFER TO TYPICAL WALL SECTIONS FOR DIMENSIONS AND MATERIALS.

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

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Kent, WA 98032
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SEAL:

10697 REGISTERED ARCHITECT
DANIEL B COALWIN
STATE OF WASHINGTON

EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

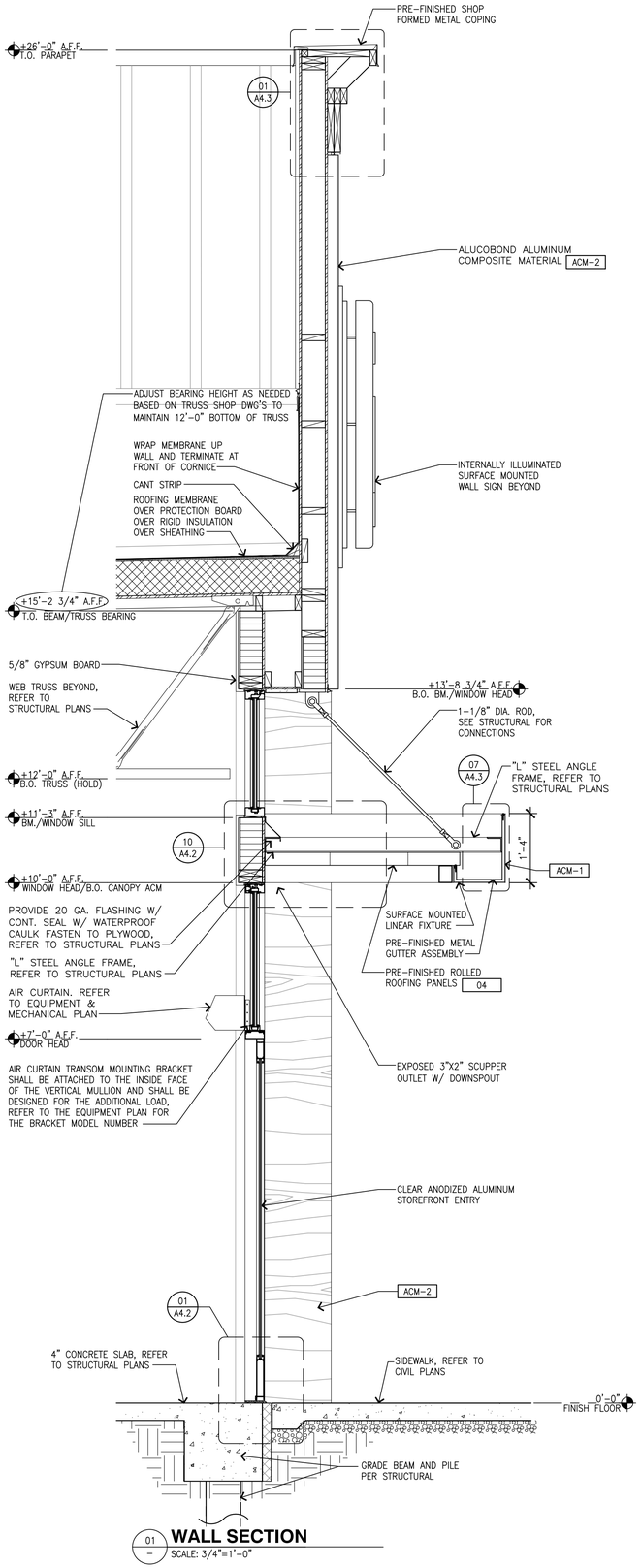
DESIGNED BY:	ALLIANCE ZADM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: -	PROJECT NO: 21730

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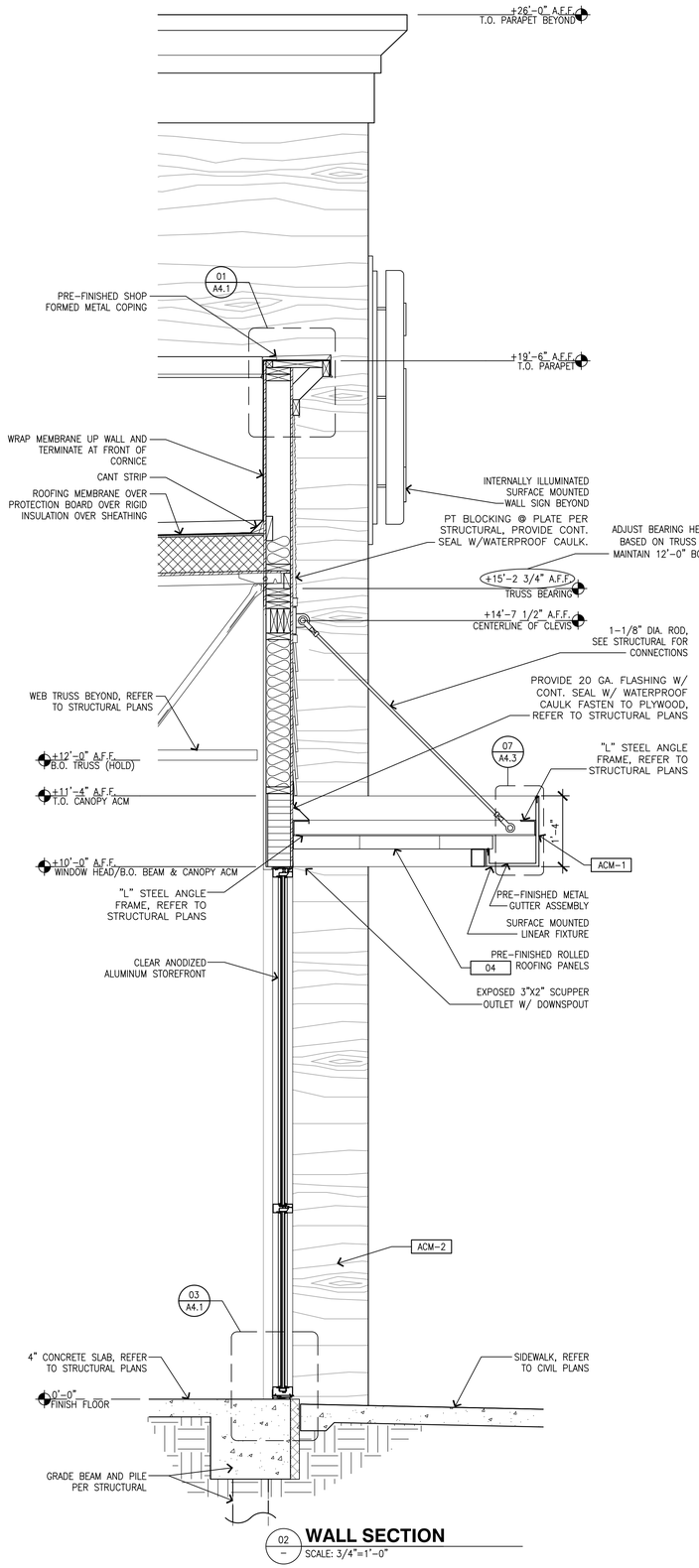
BUILDING SECTIONS

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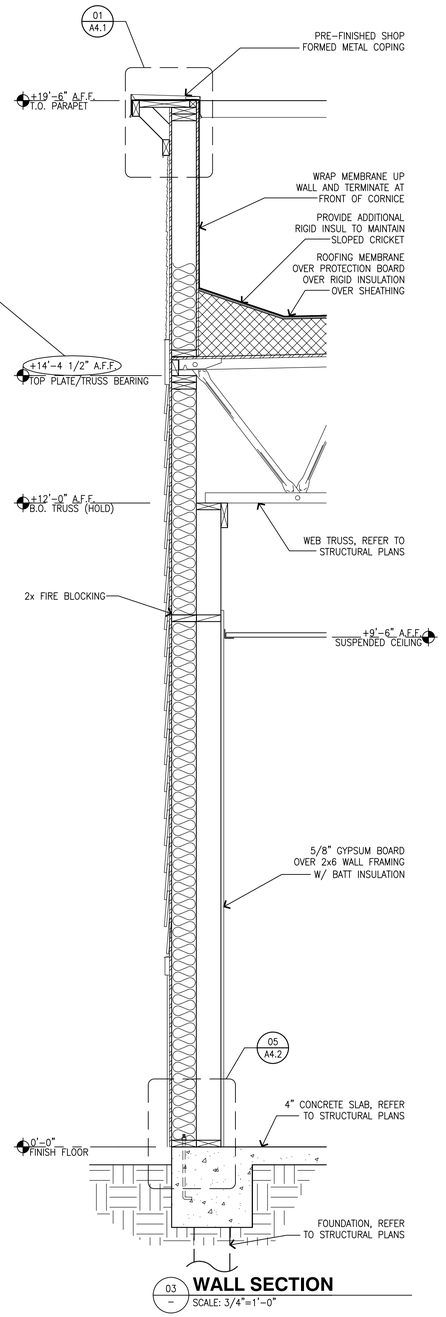
A3.1



01 – **WALL SECTION**
SCALE: 3/4"=1'-0"



02 – **WALL SECTION**
SCALE: 3/4"=1'-0"



03 – **WALL SECTION**
SCALE: 3/4"=1'-0"

COLOR LEGEND

04	HIGH HIDING WHITE (TO MATCH FORECOURT CANOPY PANELS) BENJAMIN MOORE, 2123-70, "ICE MIST" – P28 DTM

MATERIAL LEGEND

ACM-1	ALUMINUM COMPOSITE MATERIAL, PANTONE PMS 166c, "ORANGE"
ACM-2	ALUMINUM COMPOSITE MATERIAL, ALUCOBOND, "RUSTIC WALNUT"

GENERAL NOTES

A. SEE GENERAL PROJECT NOTES G1.1
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bp

ARCO

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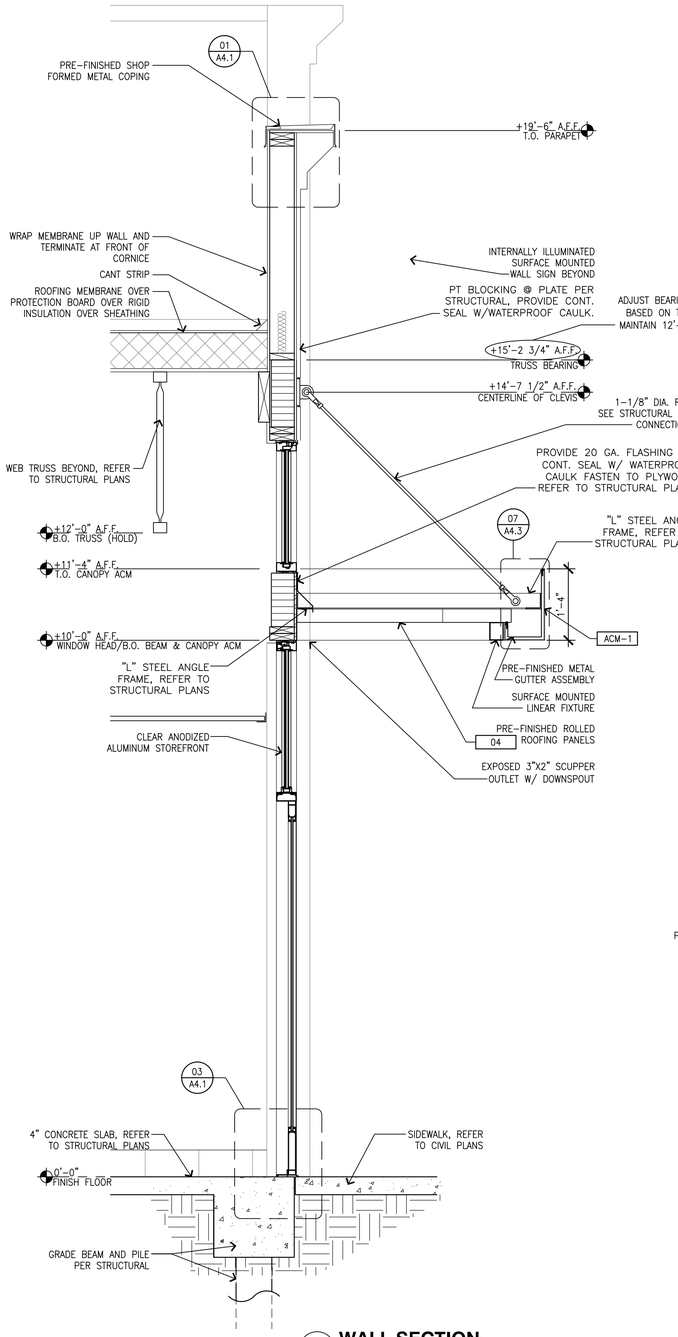
WALL SECTIONS

SHEET NO:

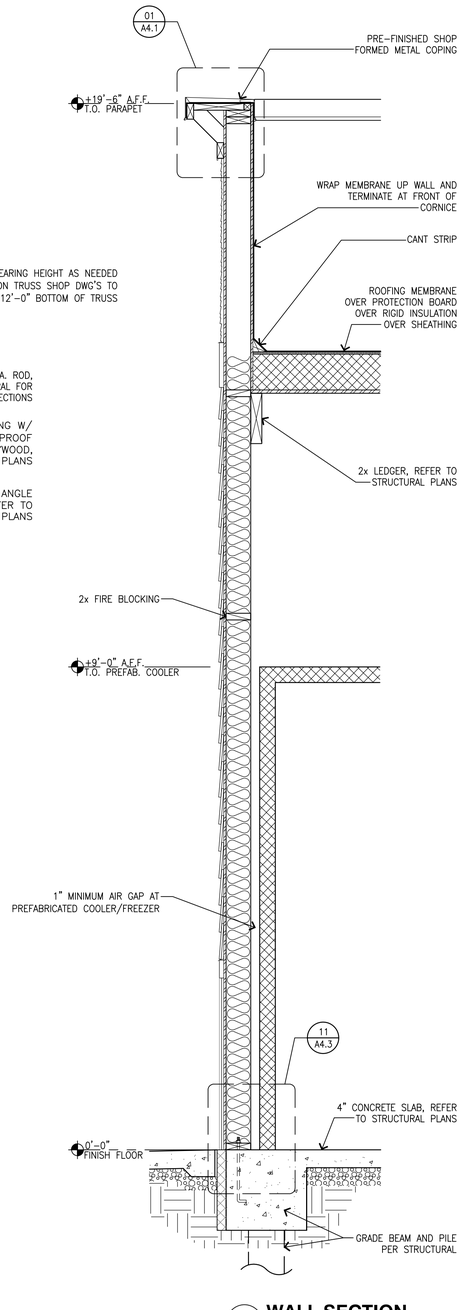
A3.2

GENERAL NOTES

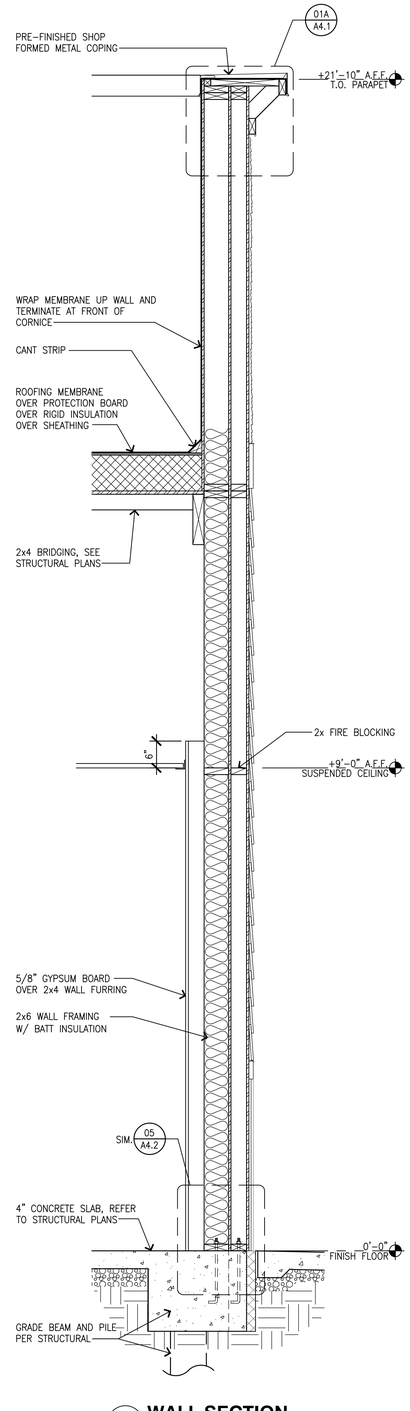
A. SEE GENERAL PROJECT NOTES G1.1
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03 **WALL SECTION**
SCALE: 3/4"=1'-0"



01 **WALL SECTION**
SCALE: 3/4"=1'-0"



02 **WALL SECTION**
SCALE: 3/4"=1'-0"

CLIENT:

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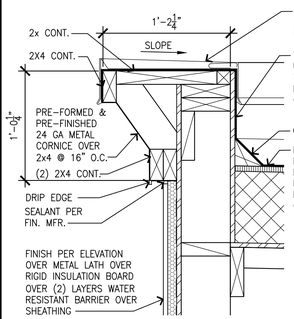
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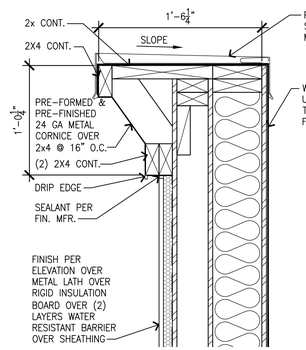
DESIGNED BY:	ALLIANCE ZADM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
WALL SECTIONS

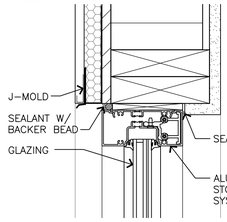
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A3.3



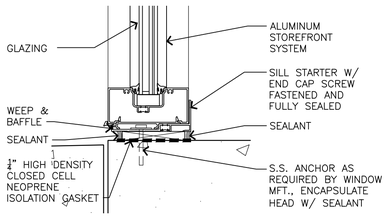
01 — **CORNICE DETAIL**
SCALE: 1–1/2"=1'–0"



01A — **CORNICE DETAIL**
SCALE: 1–1/2"=1'–0"

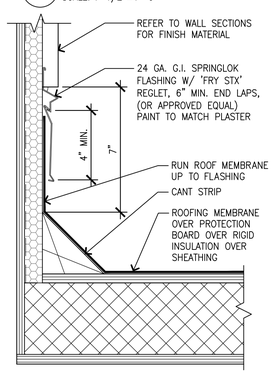


02 — **STOREFRONT WINDOW HEAD**
SCALE: 3"=1'–0"

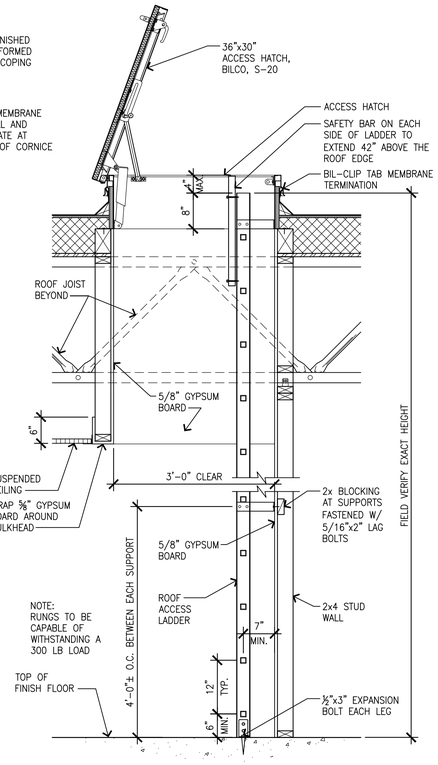


03 — **STOREFRONT WINDOW SILL**
SCALE: 3"=1'–0"

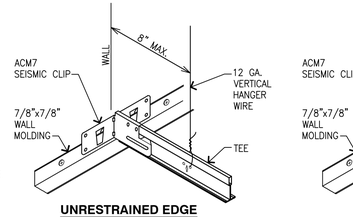
04 — **STOREFRONT WINDOW JAMB**
SCALE: 3"=1'–0"



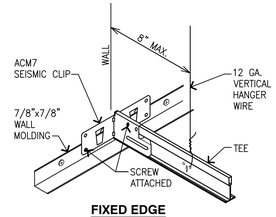
08 — **REGLET FLASHING**
SCALE: 3"=1'–0"



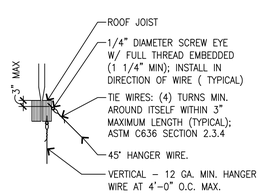
07 — **ROOF LADDER**
SCALE: 3/4"=1'–0"



UNRESTRAINED EDGE



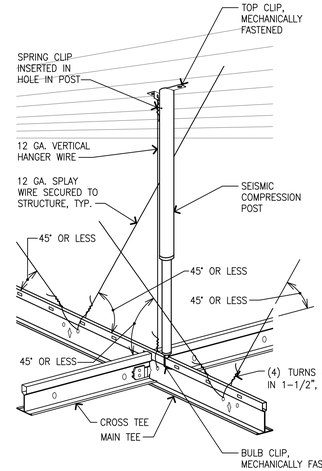
FIXED EDGE



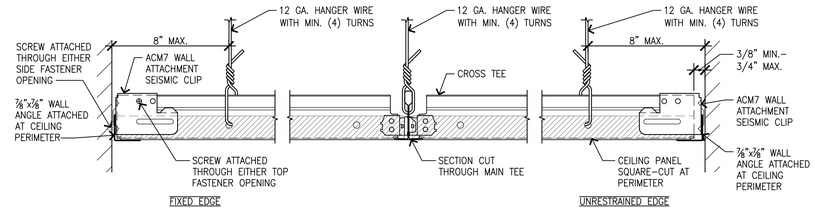
SUSPENDED CEILING DETAIL AT UPPER WIRE CONNECTOR

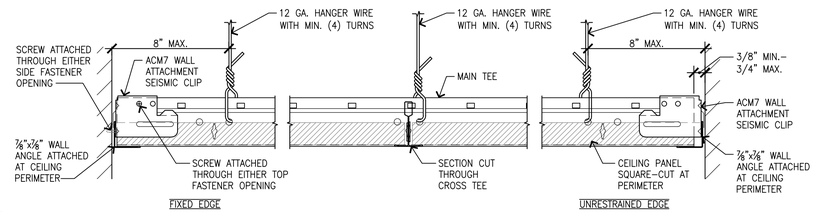
SUSPENDED CEILINGS ARE TO COMPLY WITH FOLLOWING:

- SUSPENSION SYSTEMS MANUFACTURED BY USG INTERIORS, LLC, HAVE BEEN REVIEWED AND ARE APPROVED BY LISTING IN ICC–ES EVALUATION REPORT 1222.
- THE CURRENT ICC–ES ACCEPTANCE CRITERION (AC) USED FOR THE TESTING AND EVALUATION OF SEISMIC CLIPS IS AC156, ACCEPTANCE CRITERIA FOR SEISMIC QUALIFICATION BY SHAKE–TABLE TESTING OF NONSTRUCTURAL COMPONENTS AND SYSTEMS. AC156 WAS NOT SPECIFICALLY DESIGNED TO PROVIDE TESTING GUIDELINES OR PASS/FAIL CRITERIA FOR ACOUSTICAL SUSPENSION SYSTEMS IN A SEISMIC EVENT. HOWEVER, IN THE ABSENCE OF A SPECIFIC AC FOR THIS PURPOSE, ICC–ES ALLOWED AC156 TO ACT AS THE BASIS FOR ALL SEISMIC TESTING AND EVALUATION FOR THE ACOUSTICAL CEILINGS INDUSTRY.
- MUST BE INSTALLED IN COMPLIANCE WITH ASTM C636, CISCA, AND STANDARD INDUSTRY PRACTICES.
- DONN BRAND SUSPENSION SYSTEMS MANUFACTURED BY USG INTERIORS, LLC, HAVE BEEN REVIEWED AND ARE APPROVED BY LISTING IN THE FOLLOWING L.A. RESEARCH REPORT NUMBER: 25764.



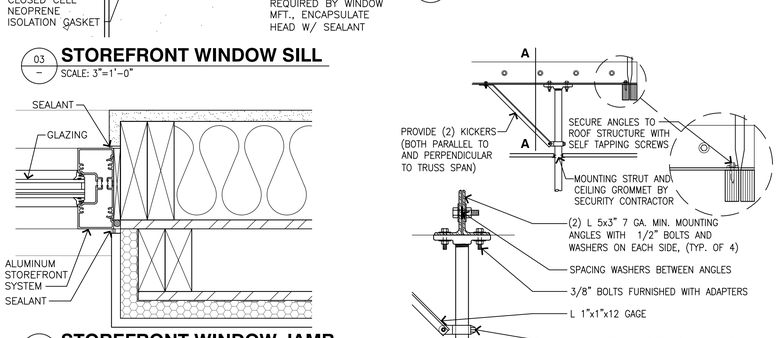
LAY-IN CEILING SUSPENSION SYSTEM-HEAVY DUTY GRID



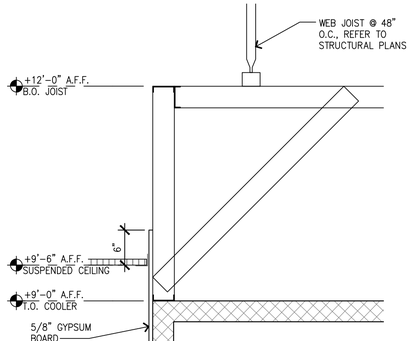


SUSPENDED CEILING DETAIL AT WALL

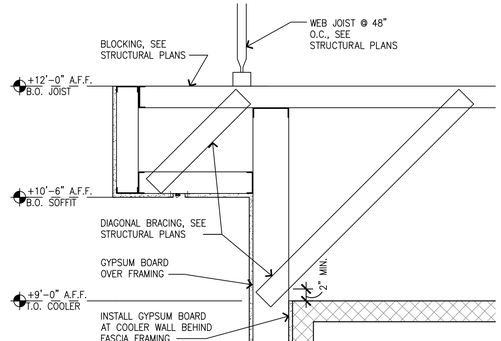
10 — **TYPICAL SUSPENDED CEILING DETAILS**
SCALE: N.T.S.



09 — **MONITOR SUPPORT DETAIL**
SCALE: 3/4"=1'–0"

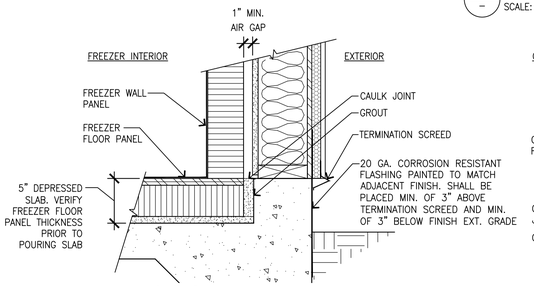


12 — **END OF COOLER @ BACKROOM AREA**
SCALE: 1"=1'–0"

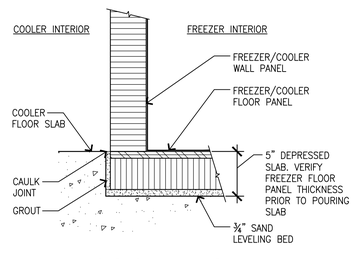


12A — **FASCIA/SOFFIT DETAIL @ COOLER IN SALES AREA**
SCALE: 3/4"=1'–0"

05 — **NOT USED**
SCALE:



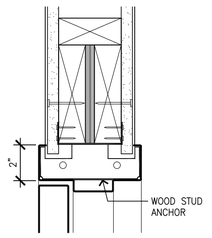
SECTION @ EXTERIOR WALL



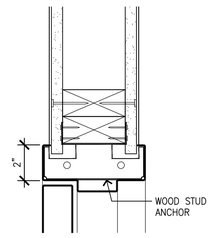
SECTION @ INTERIOR

06 — **NOT USED**
SCALE:

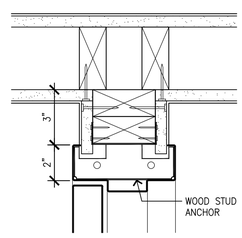
11 — **DEPRESSED SLAB @ WALK-IN FREEZER**
SCALE: 1–1/2"=1'–0"



13 — **DOOR HEAD**
SCALE: 3"=1'–0"



14 — **DOOR JAMB**
SCALE: 3"=1'–0"



14A — **DOOR JAMB @ END WALL**
SCALE: 3"=1'–0"

15 — **NOT USED**
SCALE:

CLIENT:

bp

ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	2/6/24	PERMIT RESUBMITTAL
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12		

SEAL:

10697 REGISTERED ARCHITECT
DANIEL B GOALWIN
STATE OF WASHINGTON
EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

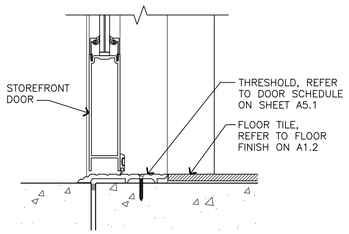
SITE ADDRESS:
1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

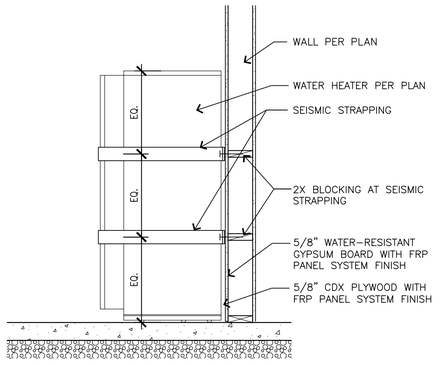
DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
DETAILS

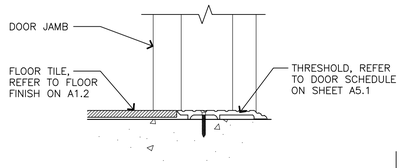
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A4.1



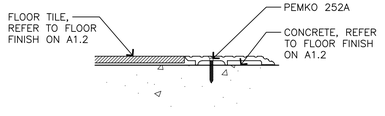
01 – STOREFRONT THRESHOLD
SCALE: 3"=1'-0"



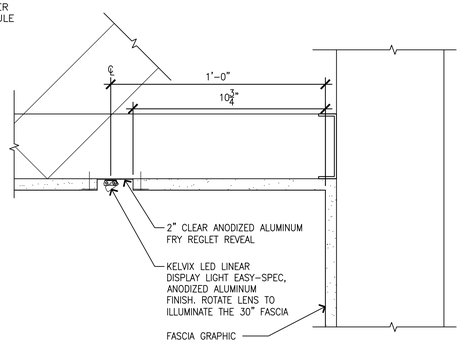
06 – WATER HEATER SUPPORT
SCALE: 3/4"=1'-0"



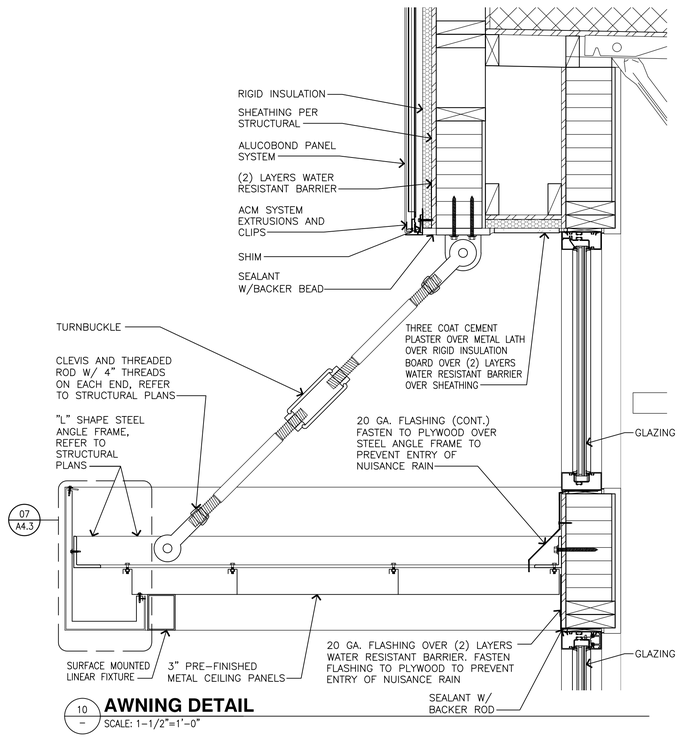
02 – DOOR THRESHOLD
SCALE: 3"=1'-0"



03 – TRANSITION STRIP
SCALE: 3"=1'-0"

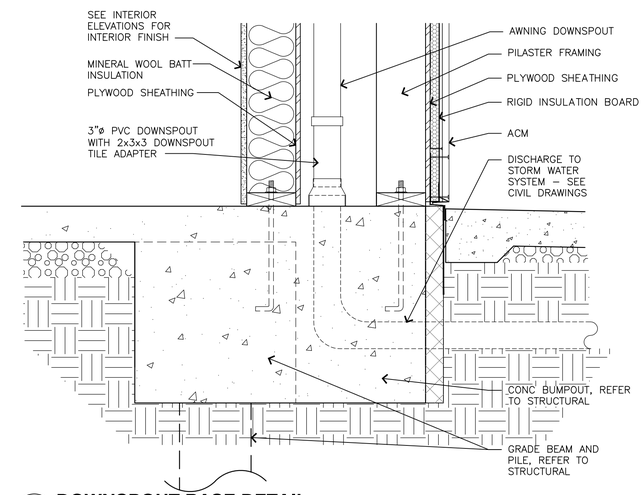


07 – LINEAR GRAPHICS FIXTURE DETAIL
SCALE: 3"=1'-0"

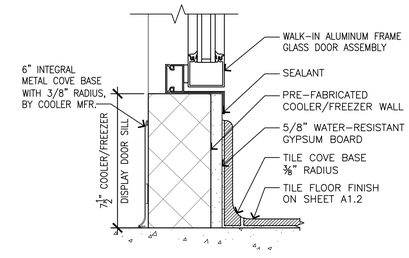


07 A4.3

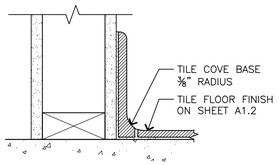
10 – AWNING DETAIL
SCALE: 1-1/2"=1'-0"



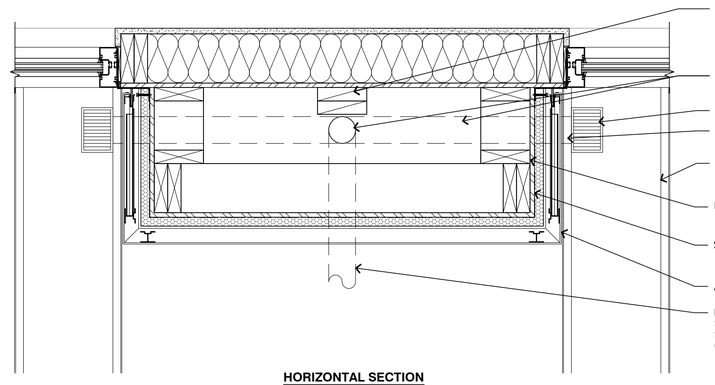
13 – DOWNSPOUT BASE DETAIL
SCALE: 1-1/2"=1'-0"



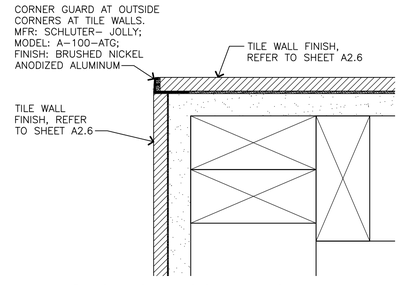
11 – COOLER DOOR SILL/BASE DETAIL
SCALE: 3"=1'-0"



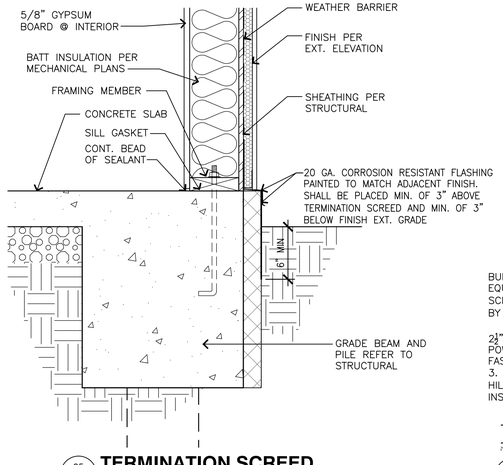
04 – TILE COVE BASE
SCALE: 3"=1'-0"



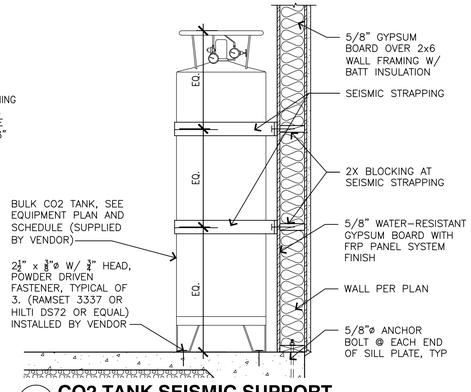
HORIZONTAL SECTION



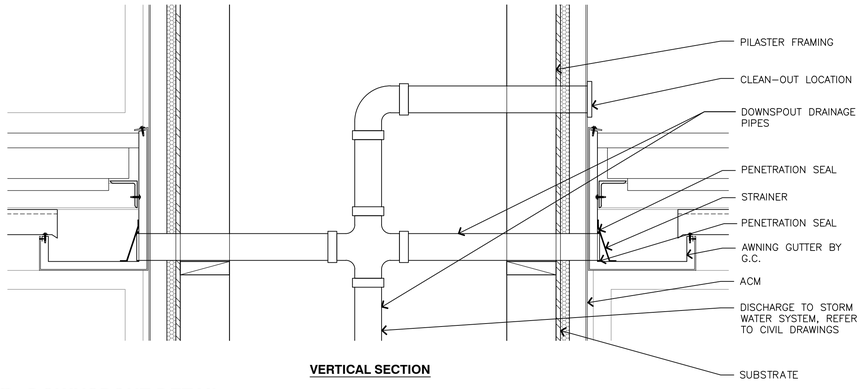
12 – OUTSIDE CORNER GUARD AT TILE
SCALE: 6"=1'-0"



05 – TERMINATION SCREED
SCALE: 3"=1'-0"

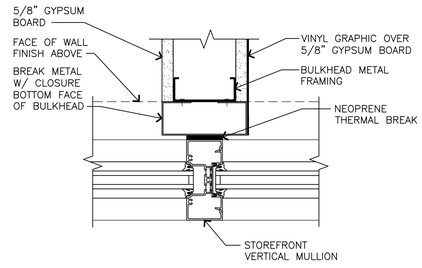


08 – CO2 TANK SEISMIC SUPPORT
SCALE: 3/4"=1'-0"



VERTICAL SECTION

09 – DOWNSPOUT DETAIL
SCALE: 3"=1'-0"



14 – BULKHEAD TERMINATION @ STOREFRONT
SCALE: 3"=1'-0"

CLIENT:
bp
ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
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DANIEL B COLMAN STATE OF WASHINGTON
EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

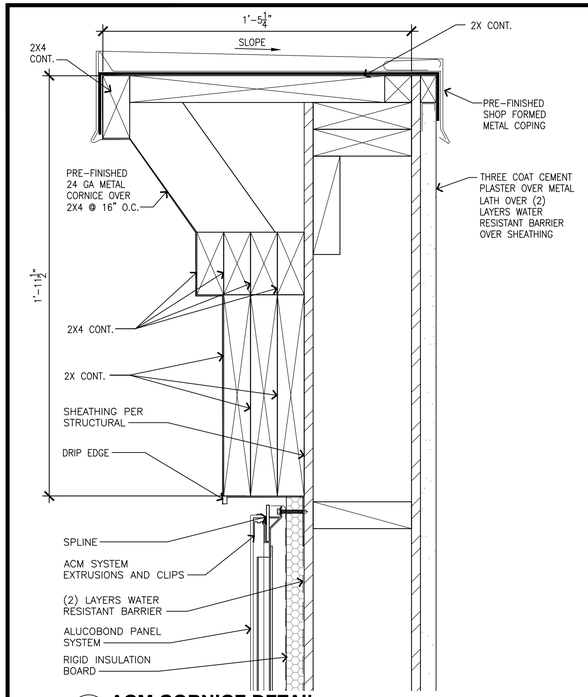
SITE ADDRESS:
1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

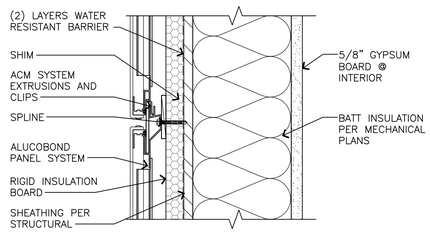
DESIGNED BY:	ALLIANCE ZADM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
DETAILS

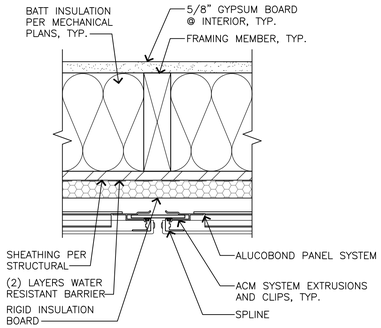
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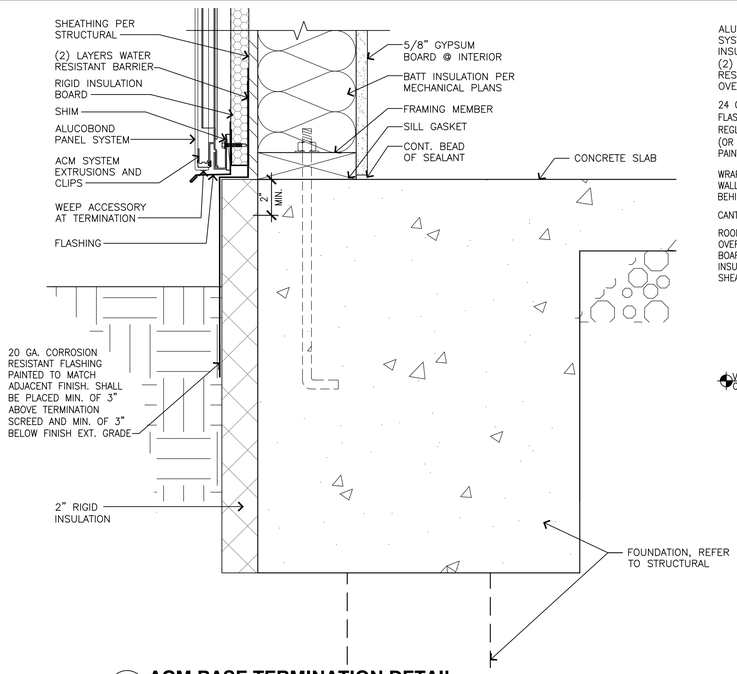
01 – **ACM CORNICE DETAIL**
SCALE: 3"=1'-0"



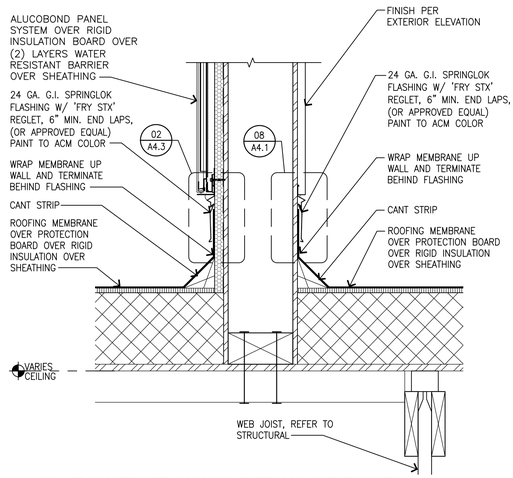
03 – **ACM HORIZONTAL JOINT DETAIL**
SCALE: 3"=1'-0"



04 – **ACM VERTICAL JOINT DETAIL**
SCALE: 3"=1'-0"



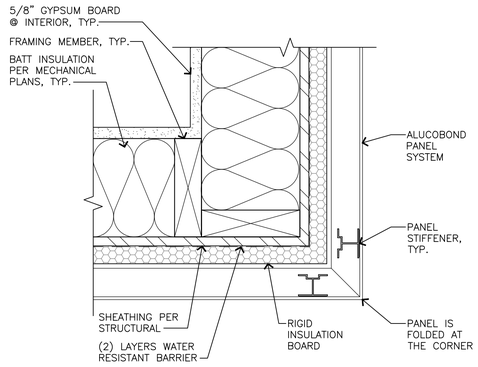
06 – **ACM BASE TERMINATION DETAIL**
SCALE: 3"=1'-0"



10 – **TOWER FRAMING DETAIL AT ROOF**
SCALE: 1-1/2"=1'-0"



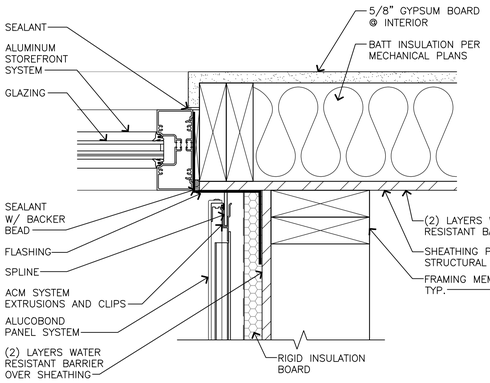
02 – **REGLET FLASHING**
SCALE: 3"=1'-0"



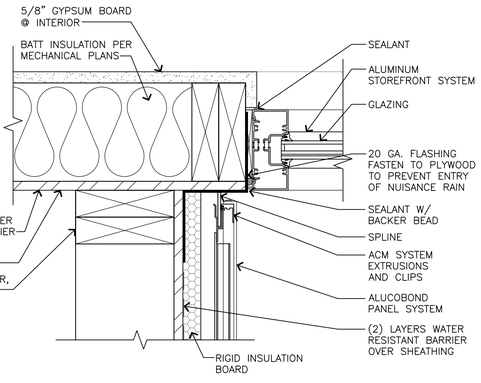
05 – **ACM OUTSIDE CORNER DETAIL**
SCALE: 3"=1'-0"

07 – **ACM AT AWNING**
SCALE: 3"=1'-0"

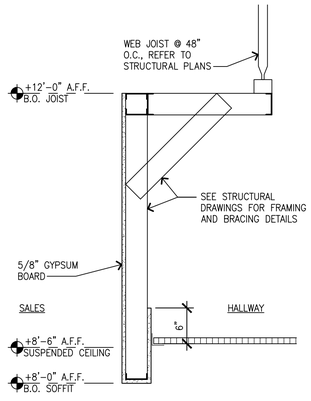
11 – **TERMINATION @ SIDE TOWER**
SCALE: 1-1/2"=1'-0"



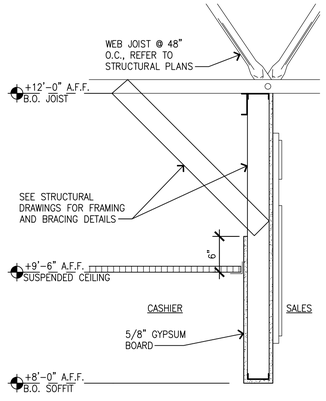
08 – **STOREFRONT WINDOW JAMB**
SCALE: 3"=1'-0"



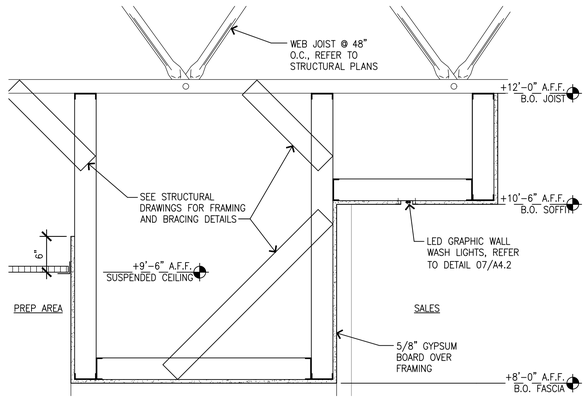
09 – **ACM ENDWALL PLAN @ PILASTER DETAIL**
SCALE: 3"=1'-0"



12 – **BULKHEAD AT HALLWAY**
SCALE: 1"=1'-0"



13 – **BULKHEAD AT CASHIER**
SCALE: 1"=1'-0"



14 – **SOFFIT AT HOT FOOD COUNTER**
SCALE: 1" = 1'-0"

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

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DANIEL B GOALWIN
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PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

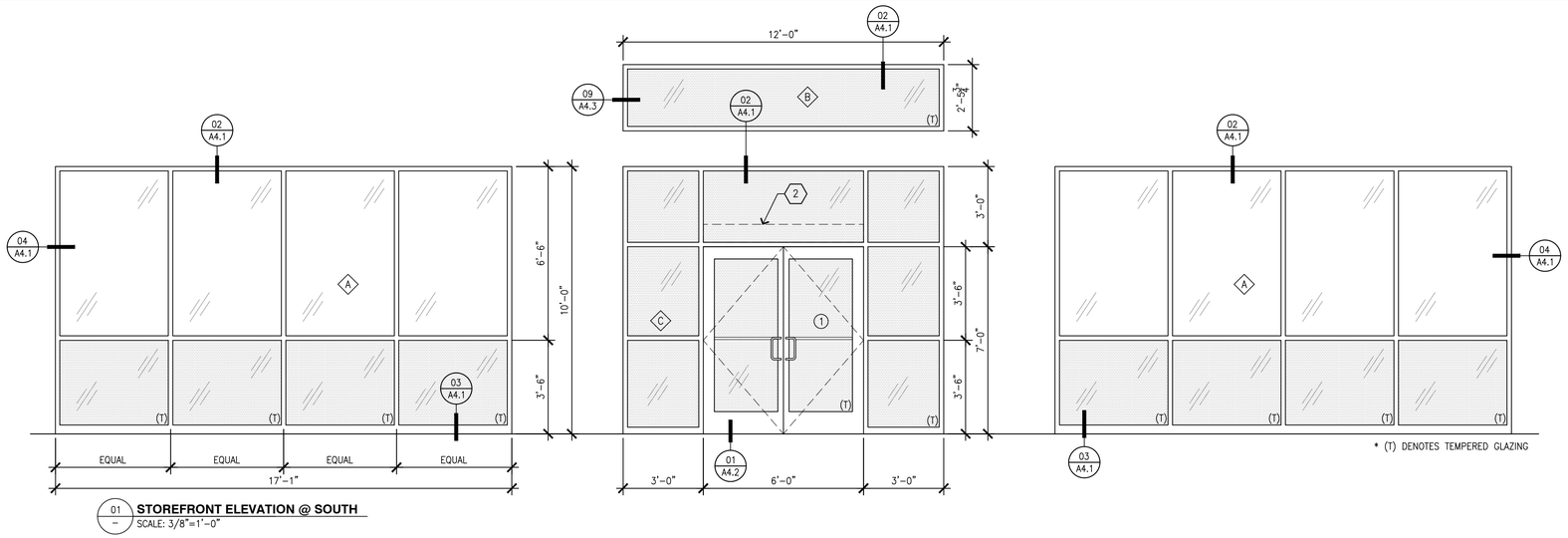
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CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: -	PROJECT NO: 21730

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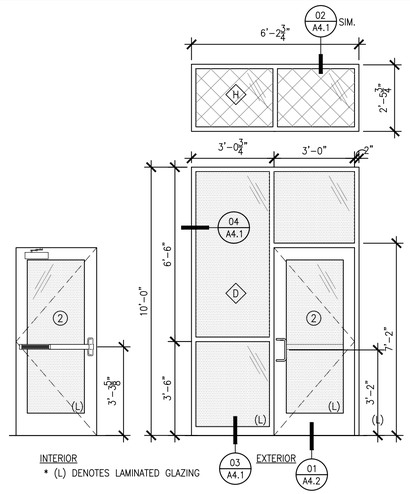
DETAILS

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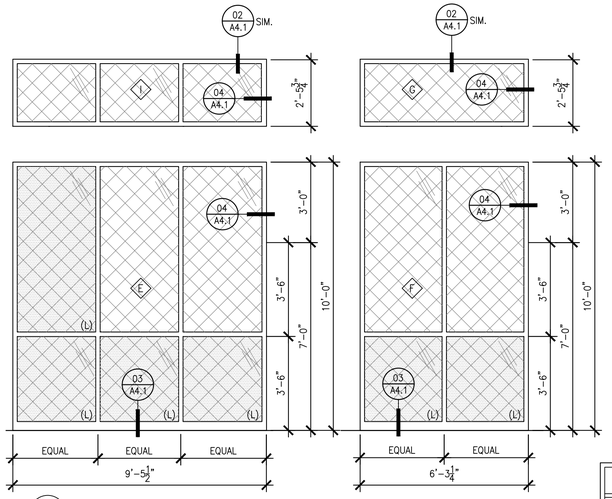
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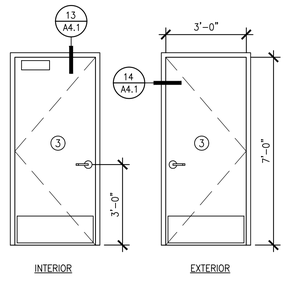
01 **STOREFRONT ELEVATION @ SOUTH**
SCALE: 3/8"=1'-0"



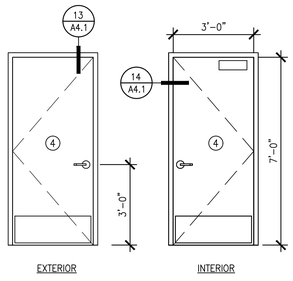
02 **STOREFRONT ELEVATION/DOOR - SIDE**
SCALE: 3/8"=1'-0"



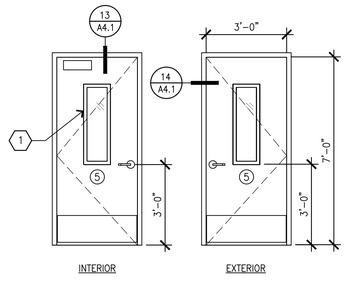
03 **STOREFRONT ELEVATION @ EAST**
SCALE: 3/8"=1'-0"



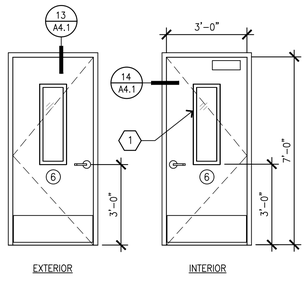
04 **DOOR - RESTROOMS**
SCALE: 3/8"=1'-0"



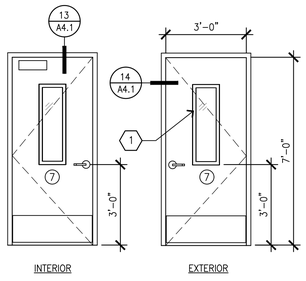
05 **DOOR - RESTROOMS**
SCALE: 3/8"=1'-0"



06 **DOOR - SERVICE**
SCALE: 3/8"=1'-0"



07 **DOOR - OFFICE**
SCALE: 3/8"=1'-0"



08 **DOOR - CASHIER**
SCALE: 3/8"=1'-0"

GENERAL NOTES

A. CONTRACTOR SHALL VERIFY ALL ROUGH OPENING SIZES PRIOR TO ORDERING.

KEYED NOTES

1. TEMPERED VISION PANEL
2. AIR CURTAIN, REFER TO SHEET A2.3 AND MECHANICAL PLANS

DOOR SCHEDULE

TYPE	SIZE	QTY	MFR/MODEL	MATERIAL	FRAME	RATING	HARDWARE	REMARKS
1	3'-0"x7'-0"x2-1/4"	2	KAWNEER INSULPOUR 500T, CENTER	1" TEMPERED GLAZING	#14 CLEAR ANODIZED ALUMINUM	LOW-E	1	WIDE STILE WITH 10" BOTTOM RAIL
2	3'-0"x7'-0"x2-1/4"	1	KAWNEER INSULPOUR 500T, CENTER	1" LAMINATED GLAZING	#14 CLEAR ANODIZED ALUMINUM		2	WIDE STILE WITH 10" BOTTOM RAIL
3	3'-0"x7'-0"x1-3/4"	1		18 GA. HOLLOW METAL	16 GA. HOLLOW METAL	N/A	3	DOOR AND FRAME FACTORY PRIMED
4	3'-0"x7'-0"x1-3/4"	1		18 GA. HOLLOW METAL	16 GA. HOLLOW METAL	N/A	3	DOOR AND FRAME FACTORY PRIMED
5	3'-0"x7'-0"x1-3/4"	2		18 GA. HOLLOW METAL	16 GA. HOLLOW METAL	N/A	4	12"x36" VISION PANEL, DOOR AND FRAME FACTORY PRIMED
6	3'-0"x7'-0"x1-3/4"	1		18 GA. HOLLOW METAL	16 GA. HOLLOW METAL	N/A	5	12"x36" VISION PANEL, DOOR AND FRAME FACTORY PRIMED
7	3'-0"x7'-0"x1-3/4"	1		18 GA. HOLLOW METAL	16 GA. HOLLOW METAL	N/A	4	12"x36" VISION PANEL, DOOR AND FRAME FACTORY PRIMED

WINDOW SCHEDULE

TYPE	SIZE	QTY	MFR/MODEL	GLAZING	FRAME	RATING	REMARKS
A	17'-1"W x 10'-0"H	2	KAWNEER TRIFAB 451UT FRAMING	SOLARBAN 70 CLEAR W/ ARGON, BOTTOM PANELS TEMPERED	#14 CLEAR ANODIZED ALUMINUM	LOW-E	G.C. SHALL VERIFY ROUGH OPENING SIZE PRIOR TO ORDERING
B	12'-0"W x 2'-5 3/4"H	1	KAWNEER TRIFAB 451UT FRAMING	SOLARBAN 70 CLEAR W/ ARGON, TEMPERED	#14 CLEAR ANODIZED ALUMINUM	LOW-E	G.C. SHALL VERIFY ROUGH OPENING SIZE PRIOR TO ORDERING
C	12'-0"W x 10'-0"H	1	KAWNEER TRIFAB 451UT FRAMING	SOLARBAN 70 CLEAR W/ ARGON, TEMPERED	#14 CLEAR ANODIZED ALUMINUM	LOW-E	G.C. SHALL VERIFY ROUGH OPENING SIZE PRIOR TO ORDERING, VERTICAL MULLIONS AT DOOR SHALL SUPPORT AIR CURTAIN SIDE MOUNT MULLION BRACKET
D	6'-2 3/4"W x 10'-0"H	1	KAWNEER TRIFAB 451UT FRAMING	SOLARBAN 70 CLEAR W/ ARGON, LAMINATED	#14 CLEAR ANODIZED ALUMINUM	LOW-E	G.C. SHALL VERIFY ROUGH OPENING SIZE PRIOR TO ORDERING
E	9-5 1/2"W x 10'-0"H	1	KAWNEER TRIFAB 451UT FRAMING	SOLARBAN 70 SPANDREL W/ ARGON, BOTTOM PANELS & 1 TOP PANEL LAMINATED	#14 CLEAR ANODIZED ALUMINUM	LOW-E	G.C. SHALL VERIFY ROUGH OPENING SIZE PRIOR TO ORDERING
F	6'-3 1/4"W x 10'-0"H	2	KAWNEER TRIFAB 451UT FRAMING	SOLARBAN 70 SPANDREL W/ ARGON, BOTTOM PANELS LAMINATED	#14 CLEAR ANODIZED ALUMINUM	LOW-E	G.C. SHALL VERIFY ROUGH OPENING SIZE PRIOR TO ORDERING
G	6-3 1/4"W x 2'-5 3/4"H	2	KAWNEER TRIFAB 451UT FRAMING	SOLARBAN 70 SPANDREL W/ ARGON	#14 CLEAR ANODIZED ALUMINUM	LOW-E	G.C. SHALL VERIFY ROUGH OPENING SIZE PRIOR TO ORDERING
H	6'-2 3/4"W x 2'-5 3/4"H	1	KAWNEER TRIFAB 451UT FRAMING	SOLARBAN 70 SPANDREL W/ ARGON	#14 CLEAR ANODIZED ALUMINUM	LOW-E	G.C. SHALL VERIFY ROUGH OPENING SIZE PRIOR TO ORDERING
I	9-5 1/2"W x 2'-5 3/4"H	1	KAWNEER TRIFAB 451UT FRAMING	SOLARBAN 70 SPANDREL W/ ARGON	#14 CLEAR ANODIZED	LOW-E	G.C. SHALL VERIFY ROUGH OPENING SIZE PRIOR TO ORDERING

DOOR HARDWARE SCHEDULE

(1) STOREFRONT DOOR:

- KAWNEER CONTINUOUS GEARED HINGE
- PUSH BAR
- PULL HARDWARE
- LCN 4040XP, DOOR MOUNT CLOSER, HEAVY DUTY WITH CUSH ARM
- ADAMS RITE DEAD BOLT W/ KEY BOTH SIDES
- MORTISE CYLINDER, SCHLAGE #20-013, 626 FINISH
- PAIR FLUSH BOLTS IN IN-ACTIVE LEAF
- SADDLE THRESHOLD, PEMKO #255Ax72"
- DOOR BOTTOM SEAL, PEMKO #222AVx36"

FURNISH AND INSTALL IMPACT RESISTANT GLASS AND SASH TO COMPLY W/ LOCAL STATE CODE REQUIREMENTS.

(2) SIDE EXTERIOR DOOR:

- KAWNEER CONTINUOUS GEARED HINGE
- VON DUPRIN 9947-RSS-ALK CONCEALED VERTICAL ROD EXIT DEVICE W/ ALARM EXIT KIT, 626 FINISH
- PULL HARDWARE
- MORTISE CYLINDER, SCHLAGE #20-013, 626 FINISH
- LCN 4040XP, DOOR MOUNT CLOSER, HEAVY DUTY WITH CUSH ARM
- SADDLE THRESHOLD, PEMKO #255Ax72"
- DOOR BOTTOM SEAL, PEMKO #222AVx36"

FURNISH AND INSTALL IMPACT RESISTANT GLASS AND SASH TO COMPLY W/ LOCAL STATE CODE REQUIREMENTS.

(3) RESTROOM DOORS:

- 1-1/2 PAIR FULL MORTISED STAINLESS STEEL BUTT HINGES (4-1/2"x4-1/2") MCKINNEY MPB91, 630 FINISH
- HEAVY DUTY OVERHEAD CLOSER, LCN 1461
- LEVER HANDLE WITH KEY OUTSIDE AND PUSH BUTTON INSIDE LOCKSET (ANSI F82/SCHLAGE ND50PD LESS CORE, RHODES LEVER 626, BEST CORE W/ 626 FINISH
- FALCON OCCUPANCY INDICATOR DEADBOLT D271, 626 FINISH
- 12"x34" STAINLESS STEEL KICK PLATE (BOTH SIDES)
- FLOOR STOP, TRIMCO 1211 DOME STOP, 626 FINISH

(4) SERVICE DOOR:

- 1-1/2 PAIR FULL MORTISED STAINLESS STEEL BUTT HINGES (4-1/2"x4-1/2") MCKINNEY MPB91, 630 FINISH
- HEAVY DUTY OVERHEAD CLOSER, LCN 1461
- LEVER HANDLE WITH KEY OUTSIDE AND PUSH BUTTON INSIDE LOCKSET (ANSI F82/SCHLAGE ND50PD LESS CORE, RHODES LEVER 626, BEST CORE W/ 626 FINISH
- 12"x34" STAINLESS STEEL KICK PLATE (BOTH SIDES)
- FLOOR STOP, TRIMCO 1211 DOME STOP, 626 FINISH
- 12"x36"x¼" TEMPERED VISION PANEL

(5) OFFICE DOOR:

- 1-1/2 PAIR FULL MORTISED STAINLESS STEEL BUTT HINGES (4-1/2"x4-1/2") MCKINNEY MPB91, 630 FINISH
- HEAVY DUTY OVERHEAD CLOSER, LCN 1461
- LEVER HANDLE WITH KEY OUTSIDE AND PUSH BUTTON INSIDE LOCKSET (ANSI F82/SCHLAGE D50PD LESS CORE, RHODES LEVER 626, BEST CORE W/ 626 FINISH, KEY SHALL BE SEPARATE FROM ALL OTHER LOCKS
- 12"x34" STAINLESS STEEL KICK PLATE (BOTH SIDES)
- FLOOR STOP, TRIMCO 1211 DOME STOP, 626 FINISH
- 12"x36"x¼" TEMPERED VISION PANEL

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	2/6/24	PERMIT RESUBMITTAL
2		
3		
4		
5		
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9		
10		
11		
12		

SEAL:

10697 REGISTERED ARCHITECT
DANIEL B COALWIN
STATE OF WASHINGTON

EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: -	PROJECT NO: 21730

DRAWING TITLE:

DOOR & WINDOW SCHEDULE

SHEET NO:

A5.1

SPECIFICATIONS

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END OF SECTION

01095 – PROJECT COORDINATION

PART 1 – GENERAL

1.01 SUMMARY

A. This section specifies administrative and supervisory requirements necessary for project coordination including, but not necessarily limited to general installation provisions, cleaning and protection.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION

3.01 GENERAL INSTALLATION PROVISIONS

A. Inspection of conditions: require the installer of each major component to inspect both the substrate and conditions under which work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. Manufacturer's instructions: comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.

C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.

D. Provide attachment and connection devices and methods necessary for securing work. Secure work true to line and level. Allow for expansion and building movement.

E. Visual effects: provide uniform joint widths in exposed work. Arrange joints in exposed work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.

F. Recheck measurements and dimensions, before starting each installation.

G. Install each component during weather conditions and project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.

H. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.

I. Mounting heights: where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

3.02 CLEANING AND PROTECTION

A. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at substantial completion.

B. Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

C. Limiting exposures: supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

END OF SECTION

01300 – SUBMITTALS

PART 1 – GENERAL

1.01 DESCRIPTION

A. This section describes the process for submitting documents and samples to the Architect of Record, Engineer of Record and/or Client Construction Project Manager for their review and approval prior to installation in the Work.

B. In general, submittals will not be required for those items which conform precisely to the products and/or manufacturers specified herein. Alternative manufacturers or substituted materials will require submittal for approval by the Architect of Record, Engineer of Record, and/or Client Construction Project Manager. Submittals for alternative manufacturers or materials shall indicate, on the submittal, that they are submitted as a requested substitution and shall indicate how the alternative meets or exceeds the characteristics of the specified item.

C. Items noted as "Deferred Submittal" such as roof trusses, prefabricated structures, and other structural items require submittal for review and approval by the Engineer or Record, and the local Building Official.

D. Items noted "Submit to _X_ for verification of _Y_", require submittal for approval by Architect of Record or Engineer of Record.

E. Provide four copies of drawings, calculations, product data, certifications, and test reports.

F. Provide three material samples, approximately 3"x5" showing color range and textures, when requested for verification.

PART 2 – NOT USED

PART 3 – NOT USED

END OF SECTION

01400 – TESTING AND QUALITY CONTROL

PART 1 – GENERAL

1.01 DESCRIPTION

A. This section covers general requirements for quality control and testing of the work, including:

1. Inspection procedures.
2. Requirements:
3. Testing firm, laboratory or agency.
4. Geotechnical (soils or foundation) engineer.
5. Coordination of tests and inspections.
6. Tests costs and reports.
7. Inspections, continuous and special.
8. Contractor furnished assistance.
9. Verification of conditions.
10. Individual sections of the Specification may contain specific test procedures to be performed in accordance with this section. Refer to each specific section.

1.02 GENERAL QUALITY CONTROL

A. General test requirements: materials and products provided under the contract are subject to testing and inspection for compliance with requirements of Contract Documents.

B. Testing firm, laboratory or agency: licensed organization meeting the requirements of ASTM E329, and referred to in sections of the Specification. Perform all testing under supervision and control of the geotechnical engineer who performed the initial geotechnical report.

C. Disqualified materials: any material shipped or delivered to the site by the Contractor from the source of supply prior to having satisfactorily passed the required testing and inspection, prior to the receipt of a notice from the Architect or Owner that such testing and inspection will not be required, shall not be incorporated in the work.

1.03 COORDINATION OF TESTS AND INSPECTIONS

A. Contractor shall initiate and coordinate testing and inspections required by Contract Documents and public authorities having jurisdiction of the work.

B. Notification: Contractor shall notify the Owner sufficiently in advance of the manufacture of materials or products to be supplied by him, which, by requirements of the Contract Documents, must be tested at the source of supply in order that the Owner may arrange for the testing.

1.04 TESTS SAMPLES AND PROCEDURES

A. Test samples: provide and deliver samples of materials and products to be tested at no extra cost to Owner. Test samples will be selected by the Architect, inspector or testing firm and not by the Contractor.

B. Test procedures: testing firm shall perform testing in accordance with ASTM or other methods of testing specified for the various materials and products specified. If no procedure or test method is specified, testing shall conform to material or product specification referenced unless otherwise directed by Owner. The testing firm shall tag, seal, label, record or otherwise suitably identify the materials and products for testing and no such materials and products shall be used in the work until the test result reports are submitted and approved, excepting only the materials and products specified to be placed or installed prior to testing.

C. Repetition of test: repeat applicable tests at specified intervals, whenever the source of supply is changed, or whenever the characteristics of the materials and products change or vary in opinion of Owner or Architect.

1.05 TEST REPORTS:

A. Provide copies of each test result report, signed and certified by the testing firm's supervising engineer. Copies shall be provided as follows:

1. Owner – 1 copy.
2. Architect – 1 copy.
3. Structural engineer (structural tests only) – 1 copy
4. Contractor – 2 copies.
5. Building department – 1 copy, if required.

1.06 INSPECTIONS, CONTINUOUS AND SPECIAL

A. Perform by registered deputy or special inspectors (hereinafter termed inspector) as required by Contract Documents and building codes. During the course of work under inspection, each inspector shall submit detailed reports relative to progress and condition of work including variances from the Contract Documents, and stipulating dates, hours and locations of the inspections.

B. Approvals required by others: if the laws, ordinances, rules, regulations or orders of any public agency having jurisdiction require any of the work to be specifically inspected, tested and approved by authority other than the Owner, Architect or Contractor, the Contractor shall give all required notices and make arrangements; shall deliver to the Architect the certificates of inspection, testing, or approval of such agency and shall pay all costs therefore unless provided in the Contract Documents.

C. All costs for special inspections shall be included in base bid.

1.07 CONTRACT FURNISHED ASSISTANCE

A. Whenever requested, Contractor shall provide access, facilities and labor assistance as necessary for duties to be performed at the site by testing firm and inspector including providing ladders, hoisting, temporary utilities and like services at no cost to Owner.

1.08 VERIFICATION OF CONDITIONS

A. Prior to installation of any portion of the work, the Contractor shall arrange for correction of defects in existing workmanship, materials and products, or conditions that may adversely affect the work to be installed. Installation of materials and products on work in-place constitutes acceptance by Contractor as being in proper condition to receive the materials and products to be applied and waiver of claim that work in-place is defective as pertains to warranty requirements, excluding unascertainable or concealed conditions. Where the specification requires a material or product to be installed under supervision of the material or product manufacturer or his representative, manufacturer or his representative also shall inspect the work in-place and issue a letter of approval to Owner.

1.09 MECHANICAL

A. Ten working days prior to final acceptance by Owner, all mechanical systems shall be one hundred percent completed and shall be inspected and approved by the Owner or his authorized representatives. Contractor shall submit copies of air balance report to Owner with close out package.

PART 2 – PRODUCTS – NOT USED

PART 3 –EXECUTION – NOT USED

END OF SECTION

01500 – TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.01 STORAGE

A. The Contractor shall supply an over the road double door type minimum 8' x 40' well secured, cleaned, weather-tight, safe storage trailer with pin lock for his use to store new Owner furnished items (equipment, decor, furniture, etc.).

1.02 TEMPORARY TELEPHONE

A. The Contractor shall set up temporary telephone and fax service by line or cellular, and the Contractor shall be responsible for temporary telephone costs and charges. Temporary service shall not be discontinued until project is completed and Contractor leaves the site.

1.03 TEMPORARY LIGHTING AND POWER:

A. Provide adequate lighting at all points of construction areas where natural or existing lighting is insufficient for the proper performance of the work.

B. Provide and pay for electrical service and include temporary poles, transformers, meters, wiring, panels, circuits and ground fault protection, and fittings at locations requiring power, until occupancy by Owner.

C. Provide generators to meet needs of construction in the event commercial power is unavailable.

1.04 TEMPORARY TOILET FACILITIES:

A. Provide and pay for temporary toilet facilities on site in compliance with requirements of the department of health. Maintain toilet facilities in good working order and remove at the end of construction.

1.05 TEMPORARY WATER:

A. Provide and pay for all water required for work and including piping, hoses, and valves from source to points on the site where needed. Regardless of source, there will be no additional cost to Owner.

1.06 SAFETY:

A. General Contractor is responsible for all on site safety from ground-breaking until occupancy.

PART 2 –PRODUCTS – NOT USED

PART 3 –EXECUTION – NOT USED

END OF SECTION

01600 – MATERIALS AND EQUIPMENT

PART 1 – GENERAL

1.01 REQUIREMENTS

A. Materials and equipment incorporated into the work. Conform to applicable specifications, standards and all applicable codes.

1. Comply with size, make, type and quality specified or as may be otherwise specifically approved in writing by the Architect.
2. Manufacturer and fabricated products: design, fabricate and assemble in accordance with the best engineering and shop practices.
3. Two or more items of the same kind shall be identical, by the same manufacturer.
4. Do not use materials or equipment for any purpose other than that for which it was designed or is specified.

1.02 MANUFACTURER'S INSTRUCTIONS

A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain copies of such instructions from the manufacturer of the product.

B. Maintain one set of complete instructions at jobsite during installation and until completion and acceptance.

C. Handle, install, connect, clean, condition and adjust products in strict accordance with such instructions and in conformity with specified requirements.

D. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with the Architect for further instructions.

1. Do not proceed with work without clear instructions.

E. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

1.03 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accordance with construction schedules; coordinate to avoid conflict with work and conditions at site.

B. Deliver products in manufacturer's original sealed containers or packaging, with identifying labels intact and legible.

1. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling and damage to products and packaging.

D. General Contractor shall use Subcontractor or supplier name as consignee on all shipments to job site. Neither Owner's corporate name nor trade name shall be used as consignee.

PART 2 – PRODUCTS – NOT USED

PART 3 –EXECUTION – NOT USED

END OF SECTION

01620 – STORAGE AND PROTECTION

PART 1 – GENERAL

1.01 REQUIREMENTS

A. Provide secured storage and protection for products to be incorporated into the work (see section 01500 part 1.01).

1.02 STORAGE

A. Store products immediately on delivery, and protect until installed in the work.

B. Store in accordance with manufacturer's instructions, with seals and labels intact and legible.

C. Store products subject to damage by elements in substantial weather tight enclosures.

D. Maintain temperatures within ranges required by manufacturer's instructions.

1. Provide humidity control for sensitive products, as required by manufacturer's instructions.
2. Store unpacked products on shelves, in bins, or in neat piles, accessible for inspection.
3. Provide substantial platforms, blocking or skids to support fabricated products above ground and to prevent soiling and staining.
4. Cover products, subject to discoloration or deterioration from exposure to the elements, with impervious sheet coverings. Provide adequate ventilation to avoid condensation.
5. Store loose granular materials on solid surfaces such as paved areas, or provide plywood or sheet materials to prevent mixing with foreign matter.
6. Provide surface drainage to prevent flow or ponding of rainwater.
7. Prevent contamination with chemically injurious matter or liquid.
8. Arrange storage in a manner to provide easy access.
9. Materials not stored on jobsite shall be stored in a bonded warehouse.

1.03 MAINTENANCE OF STORAGE

A. Maintain periodic system of inspection of stored products on scheduled basis to assure that:

B. State of storage facilities is adequate to provide required conditions.

1. Required environmental conditions are maintained on continuing basis.
2. Surfaces of products exposed to elements are not adversely affected.

C. Any weathering of products, coatings or finishes is unacceptable under the requirements of Contract Documents.

D. Mechanical and electrical equipment which requires servicing during long term storage shall have complete manufacturer's instructions for servicing accompanying each item, with notice of enclosed instructions shown on exterior of package. Comply with manufacturer's instructions on scheduled basis.

1.04 PROTECTION AFTER INSTALLATION:

A. Provide protection of installed products to prevent damage from subsequent operations. Remove when no longer needed, prior to completion of work.

1. Control traffic to prevent damage to equipment and surfaces.
2. Provide coverings to protect finished surfaces from damage. Cover projections, wall corners, and jambs, sills and soffits of openings, in areas used for traffic and for passage of products in subsequent work.

PART 2 – PRODUCTS – NOT USED

PART 3 –EXECUTION – NOT USED

END OF SECTION

01710 – CLEANING AND TEMPORARY SERVICES

PART 1 – GENERAL

1.01 REQUIREMENTS

A. Maintain premises and public properties free from accumulations of waste, debris and rubbish, caused by operations.

1. At completion of work, remove waste material, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave project clean and ready for public occupancy and health department inspection.

1.02 RELATED WORK SPECIFIED IN OTHER SECTIONS

A. Cleaning for a specified product or work specifically specified in the Specification's section for that work.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Use only cleaning materials recommended by the manufacturer of the product to be cleaned.

B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 – EXECUTION

3.01 DURING CONSTRUCTION

A. Execute cleaning to ensure that grounds and public properties are maintained free from accumulations of waste materials and rubbish. Wet down dry materials and rubbish to lay dust and prevent blowing dust. At reasonable intervals during progress of work, clean site and public properties and dispose of waste materials, debris and rubbish. Provide on site containers for collection of waste materials, debris and rubbish. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.

B. Vacuum clean interior building areas when ready to receive finish painting and continue vacuum cleaning on an as needed basis until building is ready for occupancy.

1. Handle materials in a controlled manner with as few handlings as possible. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
2. Remove all visible manufacturer's labels, nameplates, or other identifying devices.
3. Once building is enclosed, maintain design temperature as set forth on mechanical plan.

3.02 FINAL CLEANING

A. Employ experienced workman for final cleaning. In preparation for substantial completion or public occupancy and health department inspection, conduct final inspection of sight-exposed interior and exterior surfaces and of concealed spaces.

B. Remove grease, dust, dirt, stains and protective coverings from equipment and materials, from sight exposed in interior and exterior finished surfaces; polish surfaces so designed to shine on actual finish.

C. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.

D. Pressure clean all concrete and asphalt surfaces; rake clean other surfaces on grounds.

E. Replace air conditioning filters at construction completion. Clean ducts, blowers and coils, if air conditioning units were operated without filters during construction. Maintain cleaning until project or portion thereof, is occupied by Owner.

F. Clear all roof drains and overflow drains.

END OF SECTION

02010 – SUBSURFACE INVESTIGATION

PART 1 – GENERAL

1.01 DESCRIPTION

A. Geotechnical investigation (subsurface soils tests) for the project site has been performed and a report of that investigation has been completed.

PART 2 – PRODUCTS

2.01 SUBSURFACE INFORMATION

A. Log of borings indicates materials penetrated at specific locations. Owner and/or Architect assume no responsibility for any conclusions or interpretations made by Contractor related to information included in the report. Should Contractor require additional information concerning subsurface conditions, he may without cost to Owner, make additional investigations. Should additional investigations produce information different from that in soil report, notify Owner in writing.

PART 3 – EXECUTION

3.01 REQUIREMENT

A. Contractor shall read and otherwise become completely familiar with contents of soil report, including but not limited to its recommendations for preparation of subsoil, bases, sub-bases and fill and construction of building foundations and parking surfaces in compliance with recommendations in report. Should discrepancy be found between the requirements of soil report and the Drawings and/or Specifications, notify Owner in writing prior to beginning work. Contractor to use soils engineer of record per section 01400

END OF SECTION

02282 – TERMITE CONTROL

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes provisions and procedures governing the furnishing and installation of soil treatment for termite control. This section is applicable ONLY WHEN REQUIRED BY LOCAL BUILDING REGULATIONS.

1.02 SUBMITTALS

A. Submit manufacturer's technical data and application instructions for each product.

1.03 QUALITY ASSURANCE

A. Comply with manufacturer's instructions and recommendations for work in addition to requirements of this section, including preparation of substrate and application.

B. Engage a professional pest control operator, licensed in accordance with regulations of the State for application of soil treatment solution.

C. Use only pesticides, which bear a federal registration number of the U.S. environmental protection agency.

1.04 PROJECT CONDITIONS

A. Do not apply soil treatment solution until excavating, filling and grading operations are completed, except as otherwise required in construction operations.

B. Do not apply soil treatment to excessively wet soils or during inclement weather.

C. Comply with handling and application instructions of the soil toxicant manufacturer.

1.05 SPECIFIC PRODUCT WARRANTY

A. Furnish written warranty certifying that applied soil termiticide treatment will prevent infestation of subterranean termites and, that if subterranean termite activity is discovered during warranty period, Contractor will re-treat soil and repair or replace damage caused by termite infestation.

B. Provide warranty for a period of 5 years from date of treatment, signed by applicator and Contractor.

C. Provide a renewable service agreement option to provide inspections and re- treatment after the initial warranty period expires. the service agreement shall further state that in the event of damage during the warranty period, the Contractor shall make repairs to structurally damaged surfaces due to the infestation of subterranean termites up to and including a cost of $25,000.

PART 2 – PRODUCTS

2.01 SOIL TREATMENT SOLUTION

A. Use an emulsible concentrate termiticide for dilution with water, specially formulated to prevent infestation by termites. Fuel oil will not be permitted as a diluent. Provide a solution consisting of one of following chemical elements and concentrations:

1. "Dursban TC" (chloropyrifos); 1.0 percent in water solution.
2. "Pryfon 6" (methylethyl-benzoate); 1.3 oz. of product per 10 sq. ft. in water solution.

B. Other solutions may be used as recommended by applicator if also approved by the Architect and approved for intended application by manufacturer and jurisdictional authorities.

C. Use only soil treatment solutions which are not injurious to planting.

PART 3 – EXECUTION

3.01 APPLICATION

A. Remove foreign matter which could decrease effectiveness of treatment on areas to be treated.

B. Loosen, rake and level soil to be treated, except previously compacted areas under slabs and foundations. Toxicants may be applied before placement of compacted fill under slabs, if recommended by toxicant manufacturer.

C. Mix chemicals (from sealed containers) with water at the jobsite, then apply soil treatment solution only at rates described by the manufacturer on the product label and in compliance with local, state and federal laws.

D. Post signs in areas of application to warn workers that soil termiticide treatment has been applied. Remove signs when areas are covered by other construction.

E. Reapply soil treatment solution to areas disturbed by subsequent excavation, landscape grading, or other construction activities following application.

END OF SECTION

03300 – CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes provisions and procedures governing the furnishing and installation of cast-in-place concrete, including formwork, reinforcing, design, placement procedures, curing, and finishes.

B. Cast-in-place concrete includes, but is not limited to the following:

1. Foundations and footings.
2. Slabs-on-grade (interior)
3. Equipment pads and bases.

1.02 SUBMITTALS

A. Product data for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, waterstops, joint systems, curing compounds, dry-shake finish materials, sealers, hardeners, and other material if requested by Architect

B. Shop drawings for reinforcement detailing fabricating, bending, and placing concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, bent bar diagrams, and arrangement of concrete reinforcement. Include special reinforcing required for openings through concrete structures.

C. Laboratory test reports for concrete materials and design strengths

1.03 QUALITY ASSURANCE

A. Codes and standards: comply with provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified:

1. American Concrete Institute (ACI) 301, "Specifications for Structural Concrete for Buildings."
2. ACI 318, "Building Bode Requirements for Reinforced Concrete."
3. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice."

B. Concrete testing service: engage a testing agency acceptable to Building Official to perform material evaluation tests and to test concrete mixes.

C. Materials and installed work may require testing and retesting at any time during progress of work. Tests, including retesting of rejected materials for installed work, shall be done at Contractor's expense.

PART 2 – PRODUCTS

2.01 FORM MATERIALS

A. Forms for unexposed finish concrete: plywood, lumber, metal, or another acceptable material. Provide lumber dressed on at least two edges and one side for tight fit.

B. Form release agent provide commercial formulation form release agent with compounds that will not bond with, stain, or adverse effect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

C. Form ties: factory-fabricated, adjustable-length, removable or snap-off metal form ties designed to prevent form deflection and to prevent spalling of concrete upon removal. Provide units that will leave no metal closer than 1–1/2 inches to the plane of the exposed concrete surface.
1. Provide ties that, when removed, will leave holes not larger than 1 inch in diameter in the concrete surface.

2.02 REINFORCING MATERIALS (Refer to Structural Drawings)

A. Reinforcing bars: ASTM A–615, grade 60, deformed.

B. Ties and stirrups: ASTM A–615, grade 40 or 60, deformed.

C. Steel wire: ASTM A–82, plain, cold drawn steel.

D. Welded wire fabric: ASTM A–185, welded steel wire fabric

E. Supports for reinforcement: bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Use wire bar–type supports complying with CRSI specifications.

1. For slabs–on–grade, use supports with sand plates or horizontal runners where base material will not support chair legs.
2. For exposed–to–view concrete surfaces where legs of supports are in contact with forms, provide supports with legs that are protected by plastic (CRSI, class 1) or stainless steel (CRSI, class 2).

2.03 CONCRETE MATERIALS

A. Portland cement: ASTM C 150, type I. Use one brand of cement throughout project unless otherwise acceptable to Architect and Structural Engineer.

B. Fly ash: ASTM C 618, type F, except that loss on ignition of class f fly ash shall not exceed 6%.

C. Normal–weight aggregates: ASTM C 33 and as specified. Provide aggregates from a single source for exposed concrete.

1. For exposed exterior surfaces, do not use fine or coarse aggregates that contain substances that cause spalling.
2. Local aggregates not complying with ASTM C 33 that have been shown to produce concrete of adequate strength and durability by special tests or actual service may be used when acceptable to Architect and Structural Engineer.

D. Water. Potable.

E. Admixtures, general: provide concrete admixtures that contain no more than 0.1 percent chloride ions.

F. Air–entraining admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures. Subject to compliance with requirements, provide one of the following:

1. Air–mix or Perma–air, Euclid Chemical Co.
2. Darex Aea or Daravair, W.R. Grace & Co.
3. MB–VR or Small–air, Master Builders, Inc.
4. Sealtight Aea, W.R. Meadows, Inc.
5. Sika AER, Sika Corp.

G. Water–reducing admixture: ASTM C 494, type A. Subject to compliance with requirements, provide one of the following:

1. Eucon WR–75, Euclid Chemical Co.
2. WRDA, W.R. Grace & co.
3. Pozzolith Normal or Polyheed, Master Builders, Inc.
4. Plastocrete 161, Sika Corp.

H. High–range water–reducing admixture: ASTM C 494, type F or type G. Subject to compliance with requirements, provide one of the following:

1. Eucon 37, Euclid Chemical co.
2. WRDA 19 or Daracem, W.R. Grace & co.
3. Rheobuild or Polyheed, Master Builders, Inc.
4. Sikament 300, Sika Corp.

I. Water–reducing, accelerating admixture: ASTM C 494, type E. Subject to compliance with requirements, provide one of the following:

1. Accelguard 80, Euclid Chemical Co.
2. Daraset, W.R. Grace & Co.
3. Pozzutec 20, Master Builders, Inc.

J. Water–reducing, retarding admixture: ASTM C 494, type D. Subject to compliance with requirements, provide one of the following:

1. Eucon Retarder 75, Euclid Chemical Co.
2. Daratard–17, W.R. Grace & Co.
3. Pozzolith R, Master Builders, Inc.
4. Plastiment, Sika Corporation.

2.04 RELATED MATERIALS

A. Gravel sub base: washed 3/4" gravel.

B. Vapor barrier: provide vapor retarder that is resistant to deterioration when tested according to ASTM E 154, as follows:

1. Polyethylene sheet not less than 6 mils thick.

C. Moisture–retaining curing cover: one of the following, complying with ASTM C 171.

1. Waterproof paper.
2. Polyethylene film.
3. Polyethylene–coated burlap.

D. Water–based membrane curing compound: ASTM C 309, type 1, class B, with a maximum volatile organic compound (VOC) rating of 350 mg per liter. Moisture loss not more than 0.55 kg/sq. meter when applied at 200 sq. ft./gal.

E. Liquid membrane–forming curing compound: liquid–type membrane–forming curing compound with minimum solids content of 22% on resin material, complying with ARM C–309, type 1, class B. Moisture loss not more than 0.55 kg/sq. meter when applied at 200 sq. ft./gal.

F. Liquid membrane–forming curing compound: liquid–type membrane–forming curing compound with minimum of 18% solids–content on resin material, complying with ARM C–309, type 1, class B. Moisture loss not more than 0.55 kg/sq. meter when applied at 200 sq. ft/gal.

1. Product: Provide crystal clear seal by Lambert Corp; Orlando, FL; (407) 41–2940 or (800) 432–4746.

G. Bonding agent: ASTM C–1059. Where concrete placement will be protected (interior) or delayed, use re–wettable type 1 non–staining agent. Where concrete will be applied immediately after application of bonding agent, use non–re–wettable acrylic type ii.

1. Re–wettable type: provide polyvinyl acetate type; Hibond by Lambert Corp; Orlando, FL; (407) 841–2940 or (800)432–4746.
2. Non–re–wettable type: provide acrylic type; Acrylbond by Lambert Corp; Orlando, fl; (407) 841–2940 or (800) 432–4746.

H. Epoxy adhesive: ASTM C 881, two–component, 100% solids material suitable for use on dry or damp surfaces. Provide material type, grade, and class to suit project requirements.

I. Sealer/Hardener; Liquid type penetrating sealer / hardeners of manufacturer noted on Drawings. Apply materials per manufacturer's directions.

2.05 PROPORTIONING AND DESIGNING MIXES

A. Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. For the trial batch method, use an independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.

1. Do not use the same testing agency for field quality control testing.
2. Limit use of fly ash to not exceed 25 percent of cement content by weight.

B. Submit written reports to Architect of each proposed mix for each class of concrete at least 15 days prior to start of work. Do not begin concrete production until proposed mix designs have been reviewed by Architect.

C. Design mixes to provide normal weight concrete with properties as follows: as specified in structural drawings.

D. Slump limits: proportion and design mixes to result in concrete slump at point of placement as follows:

1. Ramps, slabs, and sloping surfaces: not more than 3 inches.
2. Reinforced foundation systems: not less than 3 inches and not more than 5 inches.
3. Concrete containing high–range water–reducing admixture (superplasticizer): not more than 8 inches after adding admixture to site–verified 2–3 inch slump concrete.
4. Masonry fill concrete only: not less than 8", or more than 11".
5. All other concrete: not less than 3 inches, or more than 5 inches
6. Slumps for pumped concrete shall be taken at the discharge end of the hose.
7. Addition of water at the site to increase slump is prohibited.

E. Adjustment to concrete mixes: mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, as accepted by Architect. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Architect before using in work.

2.06 ADMIXTURES

A. Use water–reducing admixture or high–range water–reducing admixture (superplasticizer) in concrete, as required, for placement and workability.

B. Use accelerating admixture in concrete slabs placed at ambient temperatures below 50 Deg F (10 Deg C).

C. Use high–range water–reducing admixture in pumped concrete, concrete for industrial slabs, Architectural concrete, parking structure slabs, concrete required to be watertight, and concrete with water–cement ratios below 0.50.

D. Use air–entraining admixture in exterior exposed concrete unless otherwise indicated. Add air–entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content of 5_to_7 percent with a tolerance of plus or minus 1–1/2 percent.

E. Use admixtures for water reduction and set accelerating or retarding in strict compliance with manufacturer's directions.

2.07 CONCRETE MIXING

A. Job–site mixing: mix concrete materials in appropriate drum–type batch machine mixer. For mixers of 1 cu. yd. Or smaller capacity, continue mixing at least 1–1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released. For mixers of capacity larger than 1 cu. yd., increase minimum 1–1/2 minutes of mixing time by 15 seconds for each additional cu. yd.

1. Provide batch ticket for each batch discharged and used in the work indicating project identification name and number, date, mix type, mix time, quantity, and amount of water introduced.

B. Ready–mixed concrete: comply with requirements of ASTM C 94, and as specified.

1. When air temperature is between 85 Deg F (30 Deg C) and 90 Deg F (32 Deg C), reduce mixing and delivery time from 1–1/2 hours to 75 minutes and when air temperature is above 90 Deg F (32 Deg C), reduce mixing and delivery tune to 60 minutes.

PART 3 – EXECUTION

3.01 GENERAL

A. Coordinate the installation of joint materials, vapor retarder/barrier, and other related materials with placement of forms and reinforcing steel.
1. Before proceeding with concrete foundation work structural fill under building slab shall be complete and approved by the approved testing laboratory.

3.02 FORMS

A. General: design, erect, support, brace, and maintain formwork to support vertical, lateral, static, and dynamic loads that might be applied until concrete structure can support such loads. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain formwork construction tolerances and surface irregularities complying with the following ACI 347 limits:
1. Provide class a tolerances for concrete surfaces exposed to view.
2. Provide class c tolerances for other concrete surfaces.

B. Construct forms to sizes, shapes, lines, and dimensions shown and to obtain accurate alignment, location, grades, level, and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in the work. Use selected materials to obtain required finishes. Solidly butt joints and provide backup at joints to prevent cement paste from leaking.

C. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses, and the like for easy removal

D. Provide temporary openings for clean–outs and inspections where interior area of formwork is inaccessible before and during concrete placement. Securely brace temporary openings and set tightly to forms to prevent losing concrete mortar. Locate temporary openings in forms at inconspicuous locations.

E. Chamfer exposed corners and edges as indicated, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

F. Provisions for other trades: provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms.

G. Cleaning and tightening: thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before placing concrete. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

3.03 VAPOR RETARDER/BARRIER INSTALLATION

A. General: place vapor retarder/barrier sheeting in position with longest dimension parallel with direction of pour.

B. Lap joints 6 inches and seal with manufacturers recommended mastic or pressure–sensitive tape.

C. Seal all penetrations through vapor barrier.

D. Repair all punctures or tears prior to concrete placement.

3.04 PLACING REINFORCEMENT

A. General: comply with concrete reinforcing steel institute's recommended practice for "placing reinforcing bars," for details and methods of reinforcement placement and supports and as specified.
1. Avoiding cutting or puncturing vapor retarder/barrier during reinforcement placement and concreting operations. Repair damages before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce or destroy bond with concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as approved by Architect.

D. Place reinforcement to maintain minimum coverage as indicated for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.05 JOINTS

A. Construction joints: locate and install construction joints so they do not impair strength or appearance of the structure, as acceptable to Architect.
1. Provide keyways at least 1–1/2 inches deep in construction joints in wall and slabs and between walls and footings. Bulkheads designed and accepted for this purpose may be used for slabs.
2. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints except as indicated otherwise. Do not continue reinforcement through sides of strip placements.
3

03300 – CAST-IN-PLACE CONCRETE, PART 3 – EXECUTION (CONTINUED)

1. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and finish surfaces to tolerances of f(f) 20 (floor flatness) and f(l) 17 (floor levelness) measured according to ASTM E 1155. Grind smooth any surface defects that would telegraph through applied floor covering system.

D. Trowel and fine broom finish: where ceramic or quarry tile is to be installed with thin-set mortar, apply a trowel finish as specified, then immediately follow by slightly scarifying the surface with a fine broom.

E. Non-slip broom finish: apply a non-slip broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.11 MISCELLANEOUS CONCRETE ITEMS

A. Filling in: fill in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place, and cure concrete as specified to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.

B. Equipment bases and foundations: provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with diagrams or templates of manufacturer furnishing machines and equipment.

3.12 CONCRETE CURING AND PROTECTION

A. General: protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry, and windy weather protect concrete from rapid moisture loss before and during finishing operations with an evaporation–control material. Apply according to manufacturer's instructions after screeding and bull floating, but before power floating and troweling.

B. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.

C. Curing methods: cure concrete by curing compound, by moist curing, by moisture–retaining cover curing, or by combining these methods, as specified below

1. Curing compound: apply on exposed interior slabs and on exterior slabs, walks, and curbs as follows:

   a. Apply curing compound to concrete slabs as soon as final finishing operations are complete (within hours and after surface water sheen has disappeared). Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damaged during curing period.
   b. Use membrane type curing compounds that will not affect surfaces to be covered with finish materials applied directly to concrete.

2. Moisture curing: one of the following methods:

   a. Use continuous water–fog spray.
   b. Cover concrete surface with specified absorptive cover, thoroughly saturate cover with water, and keep continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with a 4_inch lap over adjacent absorptive covers.

3. 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 3 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

D. Chemically–hardened sprayed concrete slabs: apply concrete hardener only to moisture–cured concrete slabs. Do not apply on uncured slabs, colored concrete, or over membrane–cured slabs. After slabs are a minimum of 10–days old, spray apply or pour hardener evenly to slabs with squeegee. Puddles of excess hardener should be mopped up.

E. Curing formed surfaces: cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces, by moist curing with forms in place for the full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.

F. Curing unformed surfaces: cure unformed surfaces, including slabs, floor topping, and other flat surfaces, by applying the appropriate curing method.

1. Final cure concrete surfaces to receive finish flooring with a moisture–retaining cover, unless otherwise directed.

3.13 REMOVING FORMS

A. General: formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 Deg F (10 Deg C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form–removal operations, and provided curing and protection operations are maintained.

B. Formwork supporting weight of concrete, such as beam soffits, joists, slabs, and other structural elements may not be removed in less than 14 days or until concrete has attained at least 75 percent of design minimum compressive strength at 28 days. Determine potential compressive strength of in–place concrete by testing field cured specimens representative of concrete location or members.

C. Form–facing material may be removed 4 days after placement only if shores and other vertical supports have been arranged to permit removal of form–facing material without loosening or disturbing shores and supports.

3.14 CONCRETE SURFACE REPAIRS

A. Patching defective areas: repair and patch defective areas with cement mortar immediately after removing forms, when acceptable to Architect.

B. Mix dry–pack mortar, consisting of one part portland cement to 2–1/2 parts fine aggregate passing a no. 16 mesh sieve, using only enough water as required for handling and placing.

1. Cut out honeycombs, rock pockets, voids over 1/4 inch in any dimension, and holes left by tie rods and bolts down to solid concrete but in no case to a depth less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush–coat the area to be patched with bonding agent. Place patching mortar before bonding agent has dried.
2. For surfaces exposed to view, blend white portland cement and standard portland cement so, when dry, patching mortar will match surrounding color. Provide test areas at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike–off slightly higher than surrounding surface.

C. Repairing unformed surfaces: test unformed surfaces, such as monolithic slabs, for smoothness and verify surface tolerances specified for each surface and finish. Correct low and high areas as specified. Test unformed surfaces sloped to drain for trueness of slope and smoothness by using a template having the required slope.

1. Repair finished unformed surfaces containing defects that affect the concrete's durability. Surface defects include crazing and cracks in excess of 0.01 inch wide or that penetrate to the reinforcement or completely through nonreinforced sections regardless of width, spalling, popouts, honeycombs, rock pockets, and other objectionable conditions.
2. Correct high areas in unformed surfaces by grinding after concrete has cured at least 14 days.
3. Correct low areas in unformed surfaces during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete. Proprietary underlayment compounds may be used when acceptable to Architect.
4. Repair defective areas, except random cracks and single holes not exceeding 1 inch in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose reinforcing steel with at least 3/4 inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

D. Repair isolated random cracks and single holes 1 inch or less in diameter by dry–pack method. Groove top of cracks and cut holes to sound concrete and clean of dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Place dry–pack before bonding agent has dried. Compact dry–pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

3.15 QUALITY CONTROL TESTING DURING CONSTRUCTION

Q. General: the Contractor will employ the geotechnical engineer of record to perform tests and to submit test reports.

R. Sampling and testing for quality control during concrete placement may include the following, as directed by Architect.

1. Slump: ASTM C 143; one test at point of discharge for each day's pour of each type of concrete; additional tests when concrete consistency seems to have changed.
2. Air content: ASTM C 173, volumetric method for lightweight or normal weight concrete; ASTM C 231, pressure method for normal weight concrete; one for each day's pour of each type of air_entrained concrete.
3. Concrete temperature: ASTM C 1064; one test hourly when air temperature is 40 Deg F (4 Deg C) and below, when 80 Deg F (27 Deg C) and above, and one test for each set of compressive–strength specimens.
4. Compression test specimen: ASTM C 31; one set of four standard cylinders for each compressive–strength test, unless otherwise directed. Mold and store cylinders for laboratory–cured test specimens except when field–cured test specimens are required.
5. Compressive–strength tests: ASTM C 39; one set for each day's pour exceeding 5 cu.yd. Plus additional sets for each 50 cu. Yd. More than the first 25 cu. Yd. Of each concrete class placed in any one day, one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.
6. Masonry fill concrete: ASTM C–1019 in accordance with ACI 530.1 specifications for masonry structures.

S. When frequency of testing will provide fewer than five strength tests for a given class of concrete, conduct testing from at least five randomly selected batches or from each batch if fewer than five are used.

T. When total quantity of a given class of concrete is less than 50 cu. Yd., Architect may waive strength testing if adequate evidence of satisfactory strength is provided.

U. When strength of field–cured cylinders is less than 85 percent of companion laboratory–cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in–place concrete.

V. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength and no individual strength test result falls below specified compressive strength by more than 500 PSI

W. Test results will be reported in writing to Architect, structural engineer, ready–mix producer, and Contractor within 24 hours after tests. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7–day tests and 28–day tests.

X. Nondestructive testing: impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.

Y. Additional tests: the testing agency will make additional tests of in–place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by Architect. Testing agency may conduct tests to determine adequacy of concrete by cored complying with ASTM C 42, or by other methods as directed.

END OF SECTION

04200 – UNIT MASONRY

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes the following:

1. Concrete unit masonry.

1.02 SYSTEM PERFORMANCE REQUIREMENTS

A. Provide unit masonry that develops the following installed compressive strengths (f'm):

1. For concrete unit masonry: as follows:. F'm = 1900 PSI..

1.03 SUBMITTALS

A. General: submit the following in accordance with conditions of contract and Division 1 Specification sections.

B. Product data for each different masonry unit, accessory, and other manufactured product indicated, including specified strength requirements.

C. Shop drawings for reinforcing detailing fabrication, bending, and placement of unit masonry reinforcing bars. Comply with ACI 315 details and detailing of concrete reinforcing" showing bar schedules, stirrup spacing, diagrams of bent bars, and arrangement of masonry reinforcement.

D. Samples for initial selection purposes of the following:

1. Unit masonry samples in small–scale form showing full extent of colors and textures available for each different exposed masonry unit required.

E. Material certificates for the following signed by manufacturer and Contractor certifying that each material complies with requirements.

1. Each different cement product required for mortar and grout including name of manufacturer, brand, type, and weight slips at time of delivery.
2. Each material and grade indicated for reinforcing bars.
3. Each type and size of joint reinforcement.
4. Each type and size of anchors, ties, and metal accessories.

F. Material test reports from a qualified independent testing laboratory employed and paid by Contractor indicating and interpreting test results relative to compliance of the following proposed masonry materials with requirements indicated:

1. Mortar complying with property requirements of ASTM C 270.
2. Grout mixes. Include description of type and proportions of grout ingredients. See concrete specifications for masonry grout.
3. Masonry units.

G. Cold–weather construction procedures evidencing compliance with requirements specified in referenced unit masonry standard.

H. Hot–weather construction procedures evidencing compliance with requirements specified in referenced unit masonry standard.

I. Qualification data for firms and persons specified in "quality assurance" article to demonstrate their capabilities and experience. Include list of completed projects with project names, addresses, telephone numbers, names of Architects and Owners, and other information specified. K. Results from tests and inspections performed by Owner's representatives will be reported promptly and in writing to Architect and Contractor.

1.04 QUALITY ASSURANCE

A. Unit masonry standard: comply with ACI 530.1/ASCE 6 "Specifications for Masonry Structures," except as otherwise indicated.

1. Revise ACI 530.1/ASCE 6 to exclude sections and articles 15.1.2, 15.1.3, and to modify article 2.1.1.4 by deleting requirement for installing vent pipes and conduits built into masonry.

B. Inspecting laboratory qualifications: to qualify for employment in performing tests and inspection specified in this section, an independent testing laboratory must demonstrate to Architect's satisfaction, based on evaluation of laboratory–submitted criteria conforming to ASTM C 1093, that it has the experience and capability to conduct satisfactorily the testing indicated without delaying the progress of the work.

1.05 PROJECT CONDITIONS

A. Protection of masonry: during erection, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.
2. Where one with of multi–wythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.

B. Stain prevention: prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Remove immediately any grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain–splashed mud and mortar splatter by means of coverings spread on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes from mortar droppings.

C. Cold–weather construction: comply with referenced unit masonry standard for cold–weather construction and the following:

1. Do not lay masonry units that are wet or frozen.
2. Remove masonry damaged by freezing conditions.

D. Hot–weather construction: comply with referenced unit masonry standard.

PART 2 – PRODUCTS

2.01 MATERIALS, GENERAL

A. Comply with referenced unit masonry standard and other requirements specified in this section applicable to each material indicated.

2.02 CONCRETE MASONRY UNITS

A. General: comply with requirements indicated below applicable to each form of concrete masonry unit required.

1. Provide special shapes where indicated and as follows:
   a. For lintels, corners, jambs, sash, control joints, headers, bonding, and other special conditions.
   b. Bullnose units for outside corners unless otherwise indicated.
   c. Square–edged units for outside corners, except where indicated as bullnose.
2. Size: provide concrete masonry units complying with requirements indicated below for size that are manufactured to specified face dimensions within tolerances specified in the applicable referenced ASTM specification concrete masonry units.
3. Concrete masonry units: manufactured to specified dimensions of 3/8 inch less than nominal widths by nominal heights by nominal lengths indicated on Drawings.
4. Provide Type II, non–moisture–controlled units.

B. Hollow load–bearing concrete masonry units: ASTM C 90, grade N and as follows:

1. Unit compressive strength: provide units with minimum average net area compressive strength indicated below.
   a. 1900 PSI.

2.03 MORTAR AND GROUT MATERIALS

A. Portland cement: ASTM C 150, type I or II, except type III may be used for cold–weather construction. Provide natural color or white cement as required to produce required mortar color.

B. Masonry cement ASTM C 91.

1. For colored pigmented mortars use premixed colored masonry cements of formulation required to produce color indicated, or if not indicated, as selected from manufacturer's standard formulations.
2. For colored aggregate mortars use masonry cement of natural color or white as required to produce mortar color indicated.

C. Ready–mixed mortar: cementitious materials, water, and aggregate complying with requirements specified in this article, combined with set–controlling admixtures to produce a ready–mixed mortar complying with ASC 1142.

D. Hydrated lime: ASTM C 207, type S.

E. Aggregate for mortar: ASTM C 144, except for joints less than 1/4 inch use aggregate graded with 100 percent passing the no. 16 sieve.

1. White mortar aggregates: natural white sand or ground white stone.

F. Aggregate for grout: ASTM C 404.

G. Water: clean and potable.

H. Compressive strength of mortar and grout: 2500 psi minimum or as indicated on structural drawings.

2.04 REINFORCING STEEL (Refer to Structural Drawings)

A. General: provide reinforcing steel complying with requirements of referenced unit masonry standard and this article.

B. Steel reinforcing bars: material and grade as follows:
   1. Billet steel complying with ASTM A 615, grade 60.

C. Deformed reinforcing wire: ASTM A 496.

D. Plain welded wire fabric: ASTM A 185.

2.05 JOINT REINFORCEMENT

A. General: provide joint reinforcement complying with requirements of referenced unit masonry standard and this article, formed from the following:

1. Galvanized carbon steel wire, coating class as required by referenced unit masonry standard for application indicated.

B. Description: welded–wire units prefabricated with deformed continuous side rods and plain cross rods into straight lengths of not less than 10 feet, with prefabricated corner and tee units, and complying with requirements indicated below:

1. Wire diameter for side rods: 0.1483 inch (9 gauge).
2. Wire diameter for cross rods: 0.1483 inch (9 gauge).
3. For single–with masonry provide type as follows with single pair of side rods:
   a. Ladder design with perpendicular cross rods spaced not more than 16 inches o.c.
   b. Truss design with continuous diagonal cross rods spaced not more than 16 inches o.c.

C. Available manufacturers: subject to compliance with requirements, manufacturers offering joint reinforcement that may be incorporated in the work include, but are not limited to, the following:

1. AA Wire Products Co.
2. Dur–o–wal, Inc.
3. Heckman Building Products, Inc
4. Hohmann & Barnard, Inc.
5. Masonry Reinforcing Corp. of America.
6. National Wire Products Industries.
7. Southern Construction Products, Inc.

2.06 TIES AND ANCHORS, GENERAL

A. General: provide ties and anchors specified in subsequent articles that comply with requirements for metal and size of referenced unit masonry standard and of this article.

B. Galvanized carbon steel wire: ASTM A 82, coating class as required by referenced unit masonry standard for application indicated.

C. Steel plates and bars: ASTM A 36, shop painted with 2 coats of coal–tar epoxy–polyamide paint complying with SSPC Paint–16 to comply with SSPC–PA1 ("Paint Application Specification No. 1") and SSPC–SP6 ("Commercial Blast Cleaning") for surface preparation.

D. Steel shapes and bars: ASTM A 36, hot–dip galvanized to comply with ASTM A 123 or ASTM A 153, Class B3, as applicable to size and form indicated.

E. Stainless steel plates and bars: ASTM A 666, Type 304, temper as required to support loads imposed without exceeding allowable design stresses.

F. Wall ties: rectangular or z–shaped fabricated of 3/16" steel wire. Length to extend across wythe to within 1/2" to 3/4" of face of masonry in which ties are placed.

G. Available manufacturers: subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include, but are not limited to, the following:

1. AA Wire Products Co.
2. Dur–o–wal, Inc.
3. Heckman Building Products, Inc.
4. Hohmann & Barnard, Inc.
5. Masonry Reinforcing Corp. of America.
6. National Wire Products Industries.
7. Southern Construction Products, Inc.

2.07 POST–INSTALLED ANCHORS

A. Anchors as described below, with capability to sustain, without failure, load imposed within factors of safety indicated, as determined by testing per ASTM E 488, conducted by a qualified independent testing laboratory.

1. Type: expansion anchors (sleeve anchors)
2. Corrosion protection: carbon steel components zinc–plated to comply with ASTM B 633, Class FE/ZN 5 for class SC 1 service condition (mild). Use stainless steel anchors for exterior installations.
3. For cast–in–place and post–installed anchors in concrete: capability to sustain, without failure, a load equal to 4 times loads imposed by masonry.

2.08 MASONRY CLEANERS

A. Job–mixed detergent solution: solution of trisodium phosphate (1/2–cup dry measure) and laundry detergent (1/3–cup dry measure) dissolved in one gallon of water.

B. Job–mixed muriatic solution: solution of 1 part muriatic acid and 10 parts clean water, mixed in a nonmetallic container with acid added to water.

C. Proprietary acidic cleaner: manufacturer's standard–strength, general–purpose cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry surfaces of type indicated below without discoloring or damaging masonry surfaces; expressly approved for intended use by manufacturer of masonry units being cleaned:

1. For masonry not subject to metallic oxidation stains, use formulation consisting of a concentrated blend of surface–acting acids, chelating, and wetting agents.
2. For dark colored masonry not subject to metallic oxidation stains, use formulation consisting of a liquid blend of surface–acting acids and special inhibitors.
3. For masonry subject to metallic oxidation stains, use formulation consisting of a liquid blend of organic and inorganic acids and special inhibitors.
4. Available products: subject to compliance with requirements, a product that may be used to clean unit masonry surfaces includes, but is not limited to, the following:
   a. "Sure Klean No. 600 Detergent," Prosoco, Inc
   b. "Sure Klean No. 101 Lime Solvent," Prosoco., Inc.
   c. "Sure Klean Vana Trol," Prosoco, Inc.

2.09 MORTAR AND GROUT MIXES

A. General: do not add admixtures including coloring pigments, air–entraining agents, accelerators, retarders, water repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.
   1. Do not use calcium chloride in mortar or grout.

B. Mortar for unit masonry: Type S, complying with ASTM C 270, proportion specification.

C. Mortar for unit masonry: comply with ASTM C 270, property specification for job–mixed mortar and ASTM C 1142 for ready–mixed mortar, of types indicated below:

1. Limit cementitious materials in mortar to Portland cement–lime.
2. For all masonry unless otherwise indicated:

D. Grout for unit masonry see concrete specifications.

2.10 SOURCE QUALITY CONTROL

A. Concrete masonry unit tests: for each type, class, and grade of concrete masonry unit indicated, units will be tested by qualified independent testing laboratory for strength, absorption, and moisture content per ASTM C 140.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine conditions, with installer present, for compliance with requirements for installation tolerances and other specific conditions, and other conditions affecting performance of unit masonry.
   1. For the record, prepare written report, endorsed by installer, listing conditions detrimental to performance of unit masonry.

B. Examine rough–in and built–in construction to verify actual locations of piping connections prior to installation.

C. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION, GENERAL

A. Comply with referenced unit masonry standard and other requirements indicated applicable to each type of installation included in project.

B. Thickness: build cavity and composite walls and other masonry construction to the full thickness shown. Build single–wythe walls to the actual thickness of the masonry units, using units of nominal thickness indicated.

C. Leave openings for equipment to be installed before completion of masonry. After installation of equipment, complete masonry to match construction immediately adjacent to the opening.

D. Cut masonry units with motor–driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide continuous pattern and to fit adjoining construction. Use full–size units without cutting where possible.

3.03 CONSTRUCTION TOLERANCES

A. Comply with construction tolerances of referenced unit masonry standard.

3.04 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint widths and for accurate locating of openings, movement–type joints, returns, and offsets. Avoid the use of less than–half–size units at corners, jambs, and where possible at other locations.

B. Lay up walls to comply with specified construction tolerances, with courses accurately spaced and coordinated with other construction.

C. Bond pattern for exposed masonry: lay exposed masonry in the following bond pattern; do not use units with less that nominal 4–inch horizontal face dimensions at corners or jambs.
   1. One–half running bond with vertical joint in each course centered on units in courses above and below.

D. Lay concealed masonry with all units in a wythe in running bond. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4–inch horizontal face dimensions at corners or jambs.

E. Stopping and resuming work: in each course, rake back 1/2–unit length for one–half running bond or 1/3–unit length for one–third running bond; do not tooth. Clean exposed surfaces of set masonry, wet clay masonry units lightly (if required), and remove loose masonry units and mortar prior to laying fresh masonry.

F. Built–in work: as construction progresses, build–in items specified under this and other sections of the Specifications. Fill in solidly with masonry around built–in items.
   1. Where built–in items are to be embedded in cores of hollow masonry "f" units, place a layer of metal lath in the joint below and rod mortar or grout into core.
   2. Fill cores in hollow concrete masonry units with grout 3 courses (24 inches) under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

3.05 MORTAR BEDDING AND JOINTING

A. Lay hollow concrete masonry units as follows:

1. With full mortar coverage on horizontal and vertical face shells.
2. Bed webs in mortar in starting course on footings and in all courses of piers, columns, and pilasters, and where adjacent to cells or cavities to be filled with gout.
3. For starting course on footings where cells are not grouted, spread out full mortar bed including areas under cells.

B. Cut joints flush for masonry walls to be concealed or to be covered by other materials, unless otherwise indicated.

C. Mortar joints: tooled concave joints.

3.06 HORIZONTAL JOINT REINFORCEMENT

A. General: provide continuous horizontal joint reinforcement as indicated. Install longitudinal side rods in mortar for their entire length with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcing a minimum of 6 inches.

B. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

C. Provide continuity at corners and wall intersections by use of prefabricated "l" and "t" sections. Cut and bend reinforcement units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.07 MOVEMENT (CONTROL AND EXPANSION) JOINTS

A. General: install control and expansion joints in unit masonry where indicated. Build in related items as the masonry progresses. Do not form a continuous span through movement joints unless provisions are made to prevent in–plane restraint of wall or partition movement.

B. Form control joints in concrete masonry as follows:

1. Fit bond breaker strips into hollow contour in ends of block units on one side of control joint. Fill the resultant core with grout and rake joints in exposed faces.
2. Install preformed control joint gaskets designed to fit standard sash block.
3. Install special shapes designed for control joints. Install bond breaker strips at joint. Keep head joints free and clear of mortar or rake joint.

3.08 FIELD QUALITY CONTROL

A. Testing frequency: tests and evaluations listed in this article will be performed during construction for each 5000 sq. Ft. of wall area or portion thereof.

1. Mortar properties will be tested per property specification of ASTM C 270.
2. Mortar composition and properties will be evaluated per ASTM C 780.
3. Grout compressive strength will be sampled and tested per ASTM C 1019.

B. Evaluation of quality control tests: in absence of other indications of noncompliance with requirements, masonry will be considered satisfactory if results from construction quality control tests comply with minimum requirements indicated.

3.09 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or if units do not match adjoining units. Install new units to match adjoining units and in fresh mortar or grout, pointed to eliminate evidence of replacement.

B. Pointing: during the tooling of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar. Point–up all joints including corners, openings, and adjacent construction to provide a neat, uniform appearance, prepared for application of sealants.

C. Final cleaning: after mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on sample wall panel; leave 1/2 panel un–cleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
3. Protect adjacent stone and non–masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
4. Wet wall surfaces with water prior to application of cleaners; remove cleaners promptly by rinsing thoroughly with clear water.
5. Clean brick by means of bucket and brush hand–cleaning method described in BIA "technical note no. 20 revised" using the following cleaners:
   a. Job–mixed detergent solution.
   b. Job–mixed acidic solution.

D. Proprietary acidic cleaner; apply in compliance with directions of acidic cleaner manufacturer

E. Clean concrete masonry by means of cleaning method indicated in NCMA TEK 45 applicable to type of stain present on exposed surfaces.

F. Protection: provide final protection and maintain conditions, in a manner acceptable to installer, that ensure unit masonry is without damage and deterioration at time of substantial completion.

END OF SECTION

04700 – SIMULATED MASONRY

PART 1 – GENERAL

1.01 DESCRIPTION

A. Section includes materials and procedures for installation of lightweight manufactured simulated stone and masonry veneers, which are adhered to the exterior of the structure, and serve as the exterior finish.

1.02 SUBMITTALS

A. Submit the following in accordance with Section 01300:

1. Manufacturer's product data for simulated masonry veneer, accessories, setting materials, and mortar.
2. Manufacturer's detailed installation instructions, and evidence of minimum of five year's experience in the production of simulated masonry veneer.

1.03 PROJECT CONDITIONS

A. Environmental Requirements: Minimum air temperature of 40 F degrees prior to, during, and for 48 hours after completion of work. Store delivered stone in a dry place above 40 F degrees minimum for a minimum of 24 hours before installation.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Provide simulated masonry veneer products as indicated on the drawings.

2.02 MATERIALS

A. Provide installation pattern and color as indicated on the drawings. Provide corner pieces, sills, and flashing.

B. Setting materials:

1. Moisture Barrier:
   a. Tyvek Stucco Wrap, by E.I. Dupont. Provide manufacturer's approved tape at joints and seams.
   b. 30 lb/100 s.f. ASTM D226, non–perforated asphalt saturated organic felt.
2. Metal Lath: ASTM C847, 18 gauge self furring, galvanized 3.4 lb expanded metal lath.
3. Fasteners: Galvanized staples, nails or screws of size, spacing and type as recommended by the simulated masonry manufacturer.
4. Mortar/Grout:
   a. Type S Mortar, complying with ASTM C270, using ASTM C150 cement, Type1 or 2.
   b. Masonry sand, complying with ASTM C144
   c. Mortar/Grout color: As indicated on Drawings

PART 3 – EXECUTION

3.01 EXAMINATION AND PREPARATIONS

A. Examine site conditions:

1. Verify that all substrates are clean and securely installed.
2. Verify that exterior wall receptacles, junction boxes, and projecting structural items have been installed.
3. Do not commence work until defective conditions have been corrected.

3.02 INSTALLATION

A. Moisture Barrier: Install per manufacturer's instructions.

B. Metal Lath: Install metal lath over moisture barrier per manufacturer's instructions.

C. Mortar scratch coat: Apply 3/8" scratch coat of mortar to metal lath and allow to dry for 48 hours. Apply bonding agent to back side of simulated masonry per manufacturer's instructions.

D. Install simulated masonry per manufacturer's instruction in pattern indicated on Drawings. Joints to be concave tooled.

3.03 CLEANING

A. Remove excess mortar and smears using a wire brush or steel wool within 1 to 2 hours of installation.

B. Do not use acid cleaners.

C. Leave surfaces thoroughly clean and free of mortar or other soiling.

END OF SECTION

05500 – METAL FABRICATIONS

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes provisions and procedures governing the design, engineering, fabrication, furnishing and installation of metal fabrications.

B. Metal fabrications for the work include, but are not limited to, the following:

1. Rough hardware.
2. Loose bearing and leveling plates.
3. Applications where framing and supports are not specified in other sections.
4. Miscellaneous steel trim.
5. Shelf and relieving angles.

A. Design, engineer, fabricate, and install the metal fabrications to withstand the following structural loads without exceeding the allowable design working stress of the materials involved, including anchors and connections. Apply each load to produce the maximum stress in each respective component of each metal fabrication.

1.03 SUBMITTALS

A. Product data for products used in miscellaneous metal fabrications, including paint products and grout.

B. Shop drawings detailing fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide templates for anchors and bolts specified for installation under other sections.

C. Where installed metal fabrications are indicated to comply with certain design loadings, include structural computations, material properties, and other information needed for structural analysis that has been signed and sealed by the qualified professional engineer who was responsible for their preparation.

D. Samples representative of materials and finished products as may be requested by Architect.

E. Welder certificates signed by Contractor certifying that welders comply with requirements specified under "Quality Assurance" article.

F. Qualification data for firms and persons specified in "Quality Assurance" article to demonstrate their capabilities and experience. Include list of completed projects with project name, addresses, names of Architects and Owners, and other information specified.

1.04 QUALITY ASSURANCE

A. Fabricator shall be a firm experienced in successfully producing metal fabrications similar to that indicated for this project, with sufficient production capacity to produce required units without causing delay in the work.

B. Qualify welding processes and welding operators in accordance with AWS D1.1 Structural Welding Code–– Steel," D13 "Structural Welding Code – Sheet Steel".

C. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone re–certification.

D. Engineering shall be provided by a professional engineer licensed to practice in the state where the project is located and experienced in providing engineering services of the kind indicated that have resulted in the successful installation of metal fabrications similar in material, design, and extent to that indicated for this project.

1.05 PROJECT CONDITIONS

A. Field measurements: check actual locations of walls and other construction to which metal fabrications must fit, by accurate field measurements before fabrication. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of work.

1. Where field measurements cannot be made without delaying the work, the contractor shall guarantee dimensions and may proceed with fabrication of products without field measurements. Coordinate construction to ensure that actual opening dimensions correspond to the guaranteed dimensions. Allow for trimming and fitting.

PART 2 – PRODUCTS

2.01 FERROUS METALS

A. Metal surfaces, general: for metal fabrications exposed to view upon completion of the work, provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes. Do not use materials whose exposed surfaces exhibit pitting, seam marks, roller marks, rolled trade names, roughness, and other defects. However, variations in flatness exceeding those permitted by reference standards for stricter–level sheet.

B. Steel plates, shapes, and bars: ASTM A 36.

C. Steel tubing: product type (manufacturing method) and as follows:

1. Cold–formed steel tubing: ASTM A 500, grade as indicated below.
   a. Grade A, unless otherwise indicated or required for design loading.

D. Uncoated structural steel sheet product type (manufacturing method), quality, and grade, as follows:

1. Cold–rolled structural steel sheet: ASTM A 611, grade as follows:
   a. Grade A, unless otherwise indicated or required by design loading.

E. Galvanized steel sheet: quality as follows:

1. Structural quality: ASTM A 446; Grade A, unless another grade required for design loading, and G90 coating designation unless otherwise indicated.
2. Commercial quality. ASTM A 526, G90 coating designation unless otherwise indicated.

F. Brackets, flanges and anchors: cast or formed metal are to be of the same type material and finish as supported rails, unless otherwise indicated.

G. Concrete inserts: threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A 47, or cast steel, ASTM A 27. Provide bolts, washers, and shims as required, hot–dip galvanized per ASTM A 153.

H. Welding rods and bare electrodes: select in accordance with AWS specifications for the metal alloy to be welded.

2.02 GROUT AND ANCHORING CEMENT

A. Non–shrink nonmetallic grout: premixed, factory–packaged, non–staining, non–corrosive, nongaseous grout complying with CE CRD– C 621. Provide grout specifically recommended by manufacturer for interior and exterior applications of type specified in this section.

B. Products: subject to compliance with requirements, provide one of the following non–shrink nonmetallic grouts:

1. "Euco NS Grout"; Euclid Chemical Co.
2. "Masterflow 713"; Master Builders.
3. "Five Star Grout"; Five Star Products, Inc.
4. "Vibropruf #11"; Lambert Corp.

2.03 FASTENERS

A. Provide zinc–coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade, and class required.

B. Bolts and nuts: regular hexagon head type, ASTM A 307, Grade A.

C. Lag bolts: square head type, FS FF–B–561.

D. Machine screws: cadmium plated steel, FS FF&92.

E. Wood screws: flat head carbon steel, FS FF–S–111.

F. Plain washers: round, carbon steel, FS FF–W–92.

G. Drilled–in expansion anchors: expansion anchors complying with FS FF–S–325, group VIII (anchors, expansion, non–drilling), type I (internally threaded tubular expansion anchor); and machine bolts complying with FS FF–B–575, grade 5.

H. Toggle bolts: tumble–wing type, FS FF–B–588, type, class, and style as required.

I. Lock washers: helical spring type carbon steel, FS FF–W–84.

2.04 PAINT

A. Shop primer for ferrous metal: manufacturer's or fabricator's standard, fast–curing, lead–free, universal modified alkyd primer selected for good resistance to normal atmospheric corrosion, for compatibility with finish paint systems indicated, and for capability to provide a sound foundation for field–applied topcoats despite prolonged exposure complying with performance requirements of FS TI–P–645.

B. Zinc chromate primer: FS TT–P–645.

2.05 FABRICATION, GENERAL

A. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.

B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.

C. Shear and punch metals cleanly and accurately. Remove burrs.

D. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent–metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

F. Remove sharp or rough areas on exposed traffic surfaces.

G. Weld corners and seams continuously to comply with AWS recommendations and the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour of

06100 – ROUGH CARPENTRY, PART 1 – GENERAL (CONTINUED)

A. Single-source responsibility for engineered wood products: obtain each type of engineered wood products from one source from a single manufacturer.

B. Testing laboratory qualifications: to qualify for acceptance, an independent testing laboratory must demonstrate to Architect's satisfaction, based on evaluation of laboratory-submitted criteria conforming to ASTM E 699, that it has the experience and capability to conduct satisfactorily the testing indicated without delaying the progress of the work.

PART 2 – PRODUCTS

2.01 LUMBER, GENERAL

A. Lumber standards: furnish lumber manufactured to comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) board of review.

B. Inspection agencies: inspection agencies and the abbreviations used to reference them with lumber grades and species include the following:

1. WCLIB _ West Coast Lumber Inspection Bureau.
2. WWPA _ Western Wood Products Association.

C. Grade stamps: provide lumber with each piece factory-marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.

1. For exposed lumber furnish pieces with grade stamps applied to ends or back of each piece; omit grade stamps entirely and provide certificates of grade compliance issued by inspection agency.

D. Nominal sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by PS 20, for moisture content specified for each use.

E. Provide dressed lumber, S4S, unless otherwise indicated.

F. Provide seasoned lumber with 19 percent maximum moisture content at time of dressing and shipment for sizes 2 inches or less in nominal thickness, unless otherwise indicated.

2.02 DIMENSION LUMBER

A. For light, non-load bearing, framing provide "stud," "no. 3," or "standard" grade lumber for stud framing (2 to 4 inches thick, 2 to 4 inches wide, 10 feet and shorter) and "stud" or "no. 3" grade for other light framing (2 to 4 inches thick, 2 to 6 inches wide), any species.

B. For structural light framing (2 to 4 inches thick, 2 to 4 inches wide), provide the following grade and species:

1. "No. 2" grade.
2. Same species as indicated for structural framing grade below.

C. For structural framing (2 to 4 inches thick, 5 inches and wider), provide the following grade and species:

1. "No 2" grade
2. Douglas Fir graded under WWPA rules, or approved equal of the same properties as indicated below.
3. Any species and grade that complies with the following requirements for species group as defined in table 8.1a of N.F.P.A national design specification, for extreme fiber stress in bending "fb" for single and repetitive members, and for modules of elasticity "e":
   a. Group II species, "fb" of 900 PSI and fv of 180 PSI

D. For exposed framing lumber provide material complying with the following requirements:

1. Definition: exposed framing refers to dimension lumber that is not concealed by other construction and is indicated to receive a stained or natural finish.
2. Grading: material hand-selected at factory from lumber of species and grade indicated below that complies with "Appearance" grade requirements of ALSC national grading rule; issue inspection certificate of inspection agency for selected material.
3. Interior exposed framing: no. 2 hemfir graded under WWPA rules.
4. Exterior exposed framing: no. 1 western red cedar.

2.03 MISCELLANEOUS LUMBER

A. Provide lumber for support or attachment of other construction including rooftop equipment curbs and support bases, cant strips, bucks, nailers, blocking, furring, grounds, stripping, and similar members.

B. Fabricate miscellaneous lumber from dimension lumber of sizes indicated and into shapes shown.

C. Moisture content: 19 percent maximum for lumber items not specified to receive wood preservative treatment.

D. Grade: "standard" grade light-framing-size lumber of any species or board-size lumber as required. "No. 3 common" or "standard" grade boards per WCLIP or WWPA rules or "no. 2 boards" per WWPA rules.

2.04 ENGINEERED WOOD PRODUCTS

A. Provide engineered wood products for which current model code evaluation/research reports exist that are acceptable to authorities having jurisdiction and that evidence compliance for the application indicated with specified requirements and the building code in effect for this project.

B. Laminated veneer lumber: lumber manufactured by laminating wood veneers in a continuous press using an exterior-type adhesives complying with ASTM D 2559 to produce members with grain of veneers parallel with their lengths and complying with the following requirements:

1. Veneer characteristics: Douglas Fir or Southern Pine veneers of varying thickness by widths and lengths standard with manufacturer, end-jointed with a lap-joint, butt joint, or scarf joint.
2. Allowable design stresses: as follows, determined from empirical data or by rational engineering analysis, and demonstrated by comprehensive testing performed by a qualified independent testing laboratory:
3. Extreme fiber stress in bending (fb): 2800 PSI (for12-inch deep members).
4. Modules of elasticity (e): 2,000,000 PSI
5. Tension parallel to grain (ft): 1850 PSI
6. Compression parallel to grain (fc): 2700 PSI
7. Compression perpendicular to grain: 400 PSI and 500 PSI perpendicular and parallel to glue line.
8. Horizontal shear (fv): 285 PSI and 190 PSI perpendicular and parallel to glue line.
9. Sizes: 1-3/4 inches thick by depth and length indicated.
10. Sizes: as indicated.

C. Available products: subject to compliance with requirements, products that may be incorporated in the work include, but are not limited to, the following:

1. Laminated Veneer Lumber. (L.V.L.), headers and beams,"
   a. Micro – Lam, Truss Joist Mcmillen
   b. GP Lam, Georgia Pacific
   c. Gang Lam, Louisiana Pacific

2.05 CONSTRUCTION PANELS, GENERAL

A. Construction panel standards: comply with PS 1 "U.S. Product Standard for Construction and Industrial Plywood" for plywood construction panels and, for products not manufactured under PS 1 provisions, with APA PRP–108.

B. Trademark: furnish construction panels that are each factory–marked with APA trademark evidencing compliance with grade requirements.

2.06 CONSTRUCTION PANELS, SPECIFIC

A. Provide APA performance–rated panels complying with requirements designated under each application for grade designation, span rating, exposure durability classification, edge detail (where applicable), and thickness where construction panels are indicated for concealed types of applications.

1. Wall sheathing: for use as typical wall sheathing, provide (osb) oriented strand board with grade. Designation, APA rated sheathing exterior, in thickness indicated, or, if not otherwise indicated, not less than 5/8" nominal thickness.
2. Wall sheathing: for use as shear wall sheathing, provide plywood panels with grade designation, APA rated structural 1 rated sheathing exterior, in thickness indicated, or, if not otherwise indicated, not less than 5/8" nominal thickness.
3. Roof sheathing: for use as roof decking, provide plywood panels with grade designation, APA sturd–i–floor exterior, tongue and groove, sized for span, in thickness indicated, or, if not otherwise indicated, not less than 5/8" nominal thickness.
4. Plywood backing panels: for kitchen shelving, provide plywood panels with grade designation, APA C–D plugged exposure exterior, in thickness indicated, or, if not otherwise indicated, not less than 5/8" nominal thickness.
5. Electrical backing panels: for mounting electrical or telephone equipment, provide fire–retardant–treated plywood panels with grade designation, APA C–D plugged Exposure 1, in thickness indicated, or, if not otherwise indicated, not less than 1/2" nominal thickness.
6. Millwork panels: for all interior finish millwork, provide hardwood plywood panels with grade designation, APA A Exposure 1, in thicknesses indicated on construction documents, but in no case less than 5/8" nominal thickness.

2.07 AIR INFILTRATION BARRIER / WATER–RESISTANT MEMBRANE

A. Woven polyolefin sheet, 0.005 inch thick, with a moisture vapor transmission rate of 70 grams/sq. Meter/24 hours per ASTM E 96, procedure and a flame spread rating not exceeding 25 per ASTM E 84.

B. Available products: subject to compliance with requirements, air infiltration barriers / water–resistant membranes that may be incorporated in the work include, but are not limited to, the following:

1. "Barricade Building Wrap," Simplex Products Division, Anthony Industries, Inc.
2. Tyvek Housewrap," Fibers Department, du Pont Company.

2.08 FASTENERS

A. Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

B. Provide fasteners with a hot–dip zinc coating per ASTM A 153 or of AISI Type 304 stainless steel, where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity.

C. Nails, wire and brads: FS FF–N–105.

D. Power driven fasteners: national evaluation report NER–272.

E. Wood screws: ANSI B18.6.1.

F. Lag bolts: ANSI B18.2.1.

G. Bolts: steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and where indicated, flat washers galvanize for exterior applications.

2.09 METAL FRAMING ANCHORS

A. General: provide metal framing anchors of type, size, metal, and finish indicated that comply with requirements specified including the following:

1. Current evaluation/research reports: provide products for which model code evaluation/research reports exist that are acceptable to authorities having jurisdiction and that evidence compliance of metal framing anchors for application indicated with the building code in effect for this project.
2. Allowable design loads: provide products for which manufacturer publishes allowable design loads that are determined from empirical data or by rational engineering analysis and that are demonstrated by comprehensive testing performed by a qualified independent testing laboratory.

B. Galvanized steel sheet: steel sheet zinc–coated by hot–dip process on continuous lines prior to fabrication to comply with ASTM A 525 for coating designation g60 and with ASTM A 446, Grade A (structural quality); ASTM A 526 (commercial quality); or ASTM A 527 (lock–forming quality); as standard with manufacturer for type of anchor indicated.

1. Use galvanized steel framing anchors and bolts for rough carpentry exposed to weather, in ground contact, or in area of high relative humidity, and where indicated.

C. Acceptable manufacturer: Simpson Strong–tie Company.

2.10 MISCELLANEOUS MATERIALS

A. Adhesives for field gluing panels to framing: formulation complying with APA AFG–01 that is approved for use with type of construction panel indicated by both adhesive and panel manufacturer.

2.11 PRESERVATIVE WOOD TREATMENT BY PRESSURE PROCESS

A. Comply with applicable requirements of AWPA Standards C2 (lumber) and C9 (plywood) where lumber or plywood is indicated as preservative–treated wood or is specified herein to be treated. Mark each treated item with the AWPB or SPIB quality mark requirements

B. Pressure–treat above–ground items with water–borne preservatives to a minimum retention of 0.25 pcf for interior uses, after treatment, kiln–dry lumber and plywood to a maximum moisture content, respectively, of 19 percent and 15 percent. Treat indicated items and the following:

C. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.

D. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.

E. Wood framing members less than 8 inches above grade.

F. Wood floor plates installed over concrete slabs directly in contact with earth

G. Pressure–treat wood members in contact with the ground or fresh water with water–borne preservatives to a minimum retention of 0.40 pcf.

H. Complete fabrication of treated items prior to treatment, where possible. If cut after treatment, coat cut surfaces to comply with AWPA M4. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.

PART 3 – EXECUTION

3.01 INSTALLATION, GENERAL

A. Discard units of material with defects that impair quality of rough carpentry construction and that are too small to use in fabricating rough carpentry with minimum joints or optimum joint arrangement.

B. Set rough carpentry to required levels and lines, with members plumb and true to line and cut and fitted.

C. Fit rough carpentry to other construction; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction.

D. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated.

E. Countersink nail heads on exposed carpentry work and fill holes.

F. Use common wire nails, unless otherwise indicated. Use finishing nails for finish work. Use galvanized nails and screws for all exterior exposed framing. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials make tight connections between members. Install fasteners without splitting of wood; pre–drill as required.

3.02 WOOD GROUNDS, NAILERS, BLOCKING, AND SLEEPERS

A. Install wood grounds, nailers, blocking, and sleepers where shown and where required for screeding or attachment of other work; form to shapes as shown and cut as required for true line and level of work to be attached. Coordinate location with other work involved.

B. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated. Build into masonry during installation of masonry work. Where possible, anchor to formwork before concrete placement.

C. Install permanent grounds of dressed, preservative treated, kay–beveled lumber not less than 1–1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material involved. Remove temporary grounds when no longer required.

3.03 WOOD FRAMING, GENERAL

A. Framing standard: comply with N.F.P.A. "Manual for Wood Frame Construction," unless otherwise indicated.

B. Framing with engineered wood products: install framing composed of engineered wood products to comply with manufacturer's directions.

C. Install framing members of size and spacing indicated.

D. Anchor and nail as shown, and to comply with the following:

1. National evaluation report no. NER–272 for pneumatic or mechanical driven staples, P–nails, and allied fasteners.
2. Published requirements of manufacturer of metal framing anchors.
3. "Recommended nailing schedule" of referenced framing standard and with N.F.P.A. "National Design Specifications for Wood Construction."
4. Table 2304.10.1 – Fastening Schedule of the International Building Code.
5. Table 2306.2 (2) – Allowable Shear for Wood Structural Panel Blocked Diaphragms of the International Building Code.
6. Table 2306.3 (1) – Allowable Shear for Wood Structural Panel Shear Walls of the International Building Code.

E. Do not splice structural members between supports.

F. Firestop concealed spaces of wood framed walls and partitions at each floor level and at the ceiling line of the top story. Where firestops are not automatically provided by the framing system used, use closely fitted wood blocks of nominal 2–inch–thick lumber of the same width as framing members.

3.04 STUD FRAMING

A. Arrange studs so that wide face of stud is perpendicular to direction of wall or partition and narrow face is parallel install single bottom plate and double top plates using 2–inch–thick members whose widths equal that of studs; except single top plate may be used for non–load–bearing partitions. Nail anchor plates to supporting construction.
1. For exterior walls and load–bearing structural walls install 2–inch by 6–inch wood studs spaced 16 inches o.c.
2. For interior partitions and walls install 2–inch by 4–inch or 2–inch by 6–inch wood studs spaced 16 inches o.c., as indicated.

B. Construct corners and intersections with not less than 3 studs. Install miscellaneous blocking and framing as shown and as required for support of facing materials, fixtures, specialty items, and trim.

C. Frame openings with multiple studs and headers. Install nailed header members of thickness equal to width of studs. Set headers on edge and support on jamb studs.
1. For non–bearing partitions, install double–jamb studs and headers not less than 4 inches deep for openings 3 feet and less in width, and not less than 6 inches deep for wider openings.
2. For load–bearing partitions, install triple–jamb studs for all openings unless otherwise indicated. Install headers of depth shown, or if not shown, as recommended by N.F.P.A. "Manual for House Framing."

3.05 AIR INFILTRATION BARRIER

A. Cover sheathing with air infiltration barrier as follows:

1. Apply plastic sheet to comply with manufacturer's printed directions.
2. Apply air infiltration barrier to cover upstanding flashing with 4–inch overlap.

END OF SECTION

06192 – PREFABRICATED WOOD TRUSSES (Refer also to Structural Drawings)

PART 1 – GENERAL

1.01 REQUIREMENTS

A. General: furnish and install open–web trusses consisting of wooden top and bottom chords and tubular steel web members as indicated on the Drawings and as specified herein, including all truss–to–truss connections, and truss–to–framing connections.

B. Standards: comply with N.F.P.A. "National Design Specification for Wood Construction"

C. Submittals: in addition to product data for truss components submit the following:

1. Shop drawings showing sizes, design values, materials, and dimensional relationships of components as well as bearing and anchorage details. Provide shop drawings that have been signed and stamped by a professional engineer legally authorized to practice in jurisdiction where project is located.
2. Design calculations for all trusses and truss–to–truss connections that indicate design loadings, allowable stresses, and connection capacities. Calculations shall be signed and stamped by a professional engineer legally authorized to practice in the jurisdiction where project is located.
3. Product certificate, signed by officer of fabricating firm, certifying that metal–plate–connected wood trusses supplied for project comply with specified requirements.
4. Research reports or evaluation reports of the model code organization acceptable to authorities having jurisdiction evidencing compliance of fire–retardant–treated wood with specified requirements and building code in effect for project.

D. Single–source engineering responsibility: provide trusses engineered by the truss manufacturer to support superimposed dead and live loads indicated, with design approved and certified by a professional engineer legally authorized to practice in jurisdiction where project is located.

E. Fabricator's qualifications: a firm that participates in a recognized quality assurance program that involves inspection by SPIB; Timber Products Inspection, Inc. or other independent inspection and testing agency acceptable to Architect and authorities having jurisdiction.

F. Handle and store trusses with care to avoid damage from bending, overturning or other cause.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Lumber: provide dressed lumber S4S, grade marked, complying with PS 20 and requirements indicated. Moisture content: seasoned, with 19 percent maximum moisture content at time of dressing and shipment. Any species and grade complying with the following species group as defined in table 8.1a of N.F.P.A national design specification: Group II species, "FB" of 1200/1400 PSI for single/repetitive member use, "E" of 1,600,000 PSI.

B. Fasteners: of size and type indicated that comply with the following requirements. Where trusses are exposed to weather or to high relative humidity, provide hot–dip zinc–coated fasteners per ASTM A 153 or AISI type 304 stainless steel fasteners.

1. Nails, wire, brads, and staples: FS FF–N–105.
2. Power driven fasteners: national evaluation report NER–272.
3. Wood screws: ANSI B18.6.1.
4. Lag bolts: ANSI B18.2.1.
5. Bolts: steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and where indicated, flat washers.

C. Metal framing anchors: provide metal framing anchors of type, size, metal, and finish indicated that comply with requirements specified including the following:

1. Current evaluation/research reports: provide products for which model code evaluation/research reports exist that are acceptable to authorities having jurisdiction and that evidence compliance of metal framing anchors for application indicated with the building code in effect for this project.
2. Allowable design loads: as published by manufacturer and determined from empirical data or by rational engineering analysis and verified through comprehensive testing by a qualified independent testing laboratory.
3. Galvanized steel sheet: zinc–coated by hot–dip process to comply with ASTM A 525, coating designation G60, and complying with ASTM A 446, Grade A; ASTM A 526; or ASTM A 527.

2.02 FABRICATION

A. Fabricate and assemble trusses to provide units of configuration indicated, with closely fitted joints and connector pins securely fastened to wood members. Cut truss members to accurate lengths, angles, and sizes to produce close–fitting joints with wood–to–wood bearing in assembled units. Fabricate metal connector pins to size, configuration, thickness, and anchorage details required to withstand design loadings for types of joint designs indicated. Assemble truss members in design configuration indicated using jigs or other means to ensure uniformity and accuracy of assembly with joints closely fitted to comply with tolerances specified to produce design camber indicated

2.03 INSTALLATION

A. General: erect and brace trusses to comply with applicable requirements of referenced standards. Where trusses do not fit, return them to fabricator and replace with trusses of correct size; do not alter trusses in the field. Erect trusses with plane of truss webs vertical (plumb) and parallel to each other, located accurately at design spacing indicated. Hoist trusses in place by means of lifting equipment suited to sizes and types of trusses required, exercising care not to damage truss members or joints by out–of– plane bending or other causes. Anchor trusses securely at all bearing points to comply with methods and details indicated. Install permanent bracing and related components to enable trusses to maintain design spacing, withstand live and dead loads including lateral loads, and to comply with other indicated requirements. Do not cut or remove truss members.

END OF SECTION

07210 – BUILDING INSULATION

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes provisions and procedures governing the furnishing and installation of building insulation including, but not limited to, the following:

1. Concealed building insulation in batt form.
2. Board–type rigid insulation for underslab installation at walk–in freezer
3. Board type rigid insulation for below–grade foundation perimeter installation.

B. Roof insulation is specified in Section 07531.

C. Interior Acoustical Insulation is specified in Section 09200.

1.02 DEFINITIONS

A. Thermal resistivity: where the thermal resistivity of insulation products are designated by "R–values," they represent the reciprocal of thermal conductivity (K–values). Thermal conductivity is the rate of heat flow through a homogenous material exactly 1 inch thick. Thermal resistance is expressed by the temperature difference in degrees F between the two exposed faces required to cause one BTU to flow through one square foot per hour at mean temperatures indicated.

1.03 SUBMITTALS

A. Product data for each type of insulation product specified.

1.04 QUALITY ASSURANCE

A. Provide insulation materials identical to those whose indicated fire performance characteristics have been determined per the ASTM test method indicated below, by U.L. or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing and inspecting organization.

1. Surface burning characteristic. ASTM E 84.
2. Fire resistance ratings: ASTM E 119.
3. Combustion characteristics: ASTM E 136.

B. Obtain each type of building insulation from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the work

PART 2 – PRODUCTS

2.01 INSULATING MATERIALS, GENERAL

A. Provide insulating materials that comply with specified requirements and with referenced standards.

B. Preformed units: sizes to fit applications indicated, selected from manufacturer's standard thicknesses, widths, and lengths.

C. Foundation perimeter insulation and underslab rigid insulation: Extruded polystyrene closed cell, boards of thicknesses indicated, with aged K–value of 0.17, (aged at 50% R.H. and 73–deg. For 180 days), 15–lbs. per cu. ft. minimum density comply with Fed. Spec. HH–I–530,Type I Grade 2; manufacturer's standard sizes. (Expanded polystyrene will not be accepted.

D. Faced mineral fiber blanket/batt insulation: 6 1/4" R–21 value for wall insulation. Wall insulation to be foil faced in areas not covered by gypsum board., all other areas to be kraft paper faced. Thermal insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 forType III, Class A (blankets with reflective vapor–retarder membrane facing with flame spread of 25 or less); foil–scrim–kraft or foil–scrim–polyethylene vapor–retarder membrane on one face, and as follows:

1. Mineral fiber type: fibers manufactured from glass or slag.

2.02 PRODUCTS

A. Extruded Polystyrene board insulation: subject to compliance with requirements, provide insulation products of the following manufactures:

1. Dow Corporation
2. Atlas Energy Corporation
3. Owens/Corning

B. Glass fiber insulation: subject to compliance math requirements, provide insulation products of one of the following manufacturers:

1. Certain Teed Corp.
2. Owens/Corning Fiberglass Corp.

2.03 ACCESSORIES

A. Corrosion resistant fasteners as recommended by insulation manufacturer for insulation and substrate type.

2.04 VAPOR RETARDERS

A. Polyethylene vapor retarder: ASTM D 4397, 6.0 mils thick, with a maximum permeance rating of 0.13 perms.

B. Tape for vapor retarder: pressure sensitive tape of type recommended by vapor retarder manufacturer for sealing joints and penetrations in vapor retarder.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine substrates and conditions with installer present, for compliance with requirements of the sections in which substrates and related work are specified and to determine if other conditions affecting performance of insulation are satisfactory. Do not proceed with installation of insulation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean substrates of substances harmful to insulations or vapor retarders, including removal of projections that might puncture vapor retarders.

3.03 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's instructions applicable to products and application indicated. If printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with installation of insulation.

B. Extend insulation full thickness as indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections that interfere with placement.

3.04 UNDERSLAB INSTALLATION

A. Install underslab insulation around building foundation perimeter in locations indicated on drawings.

B. Install recessed insulation at walk–in freezer locations as indicated on drawings.

3.05 INSTALLATION OF GENERAL BUILDING INSULATION

A. Apply insulation units to substrate by method indicated, complying with manufacturer's recommendations. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Seal joints between closed–cell (non–breathing) insulation units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer.

3.06 INSTALLATION OF VAPOR RETARDERS

A. General: extend vapor retarder to extremities of areas to be protected from vapor transmission. Secure in place with adhesives or other anchorage system as indicated. Extend vapor retarder to cover miscellaneous voids in insulated substrates, including those filled with loose fiber insulation.

B. Seal overlapping joints in vapor retarders with adhesives or tape per vapor retarder manufacturer's printed directions. Seal butt joints and fastener penetrations with tape of type recommended by vapor retarder manufacturer. Locate all joints over framing members or other solid substrates.

C. Firmly attach vapor retarders to substrates with mechanical fasteners or adhesives as recommended by vapor retarder manufacturer.

D. Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with tape of type recommended by vapor retarder manufacturer to create an airtight seal between penetrating objects and vapor retarder.

E. Repair tears or punctures in vapor retarders immediately before concealment by other work. Cover with tape or another layer of vapor retarder.

3.07 PROTECTION

A. Protect installed insulation and vapor retarders from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation will be subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION

07410 – PREFORMED METAL ROOF PANELS

Part 1 – GENERAL

1.01 SECTION INCLUDES

A. Furnish and install metal wall and/or roof panels and accessories in accordance with applicable drawings and this specification. Alternate products to be considered equal must be approved by the Architect via an addendum 10 days prior to bid date.

1.02 RELATED SECTIONS

A. 07210 Building Insulation
B. 07600 Flashing and Sheet Metal
C. 07901 Sealants (Joint Sealers)

1.03 SUBMITTALS

A. Shop drawings shall be prepared for architect's approval and shall show metal panel wall and/or roof system, including fastening (attachment) methods, joinery, sealing methods, accommodations of thermal movement, accessories required and erection procedures.

B. Samples:

1. If required, 3 samples of panel material shall be furnished for approval of gauge, color, finish material, and profile.

C. Two copies of manufacturer's literature for the metal panel wall or roof system.

D. A manufacturer's Certificate of Compliance certifying that the metal panel to be supplied meets or exceeds the requirements specified.

1.04 QUALITY ASSURANCE

A. Taylor Metal – Versa–Span products establish the level of quality required.

B. Panel system installer shall be experienced with the installation of metal wall and roof systems on projects with similar scope and complexity, and acceptable to panel manufacturer.

C. Panel supplier shall furnish calculations confirming structural adequacy if requested.

D. Painted surfaces of metal panels shall meet all specified criteria printed in the manufacturer's literature. Where possible, field measurements shall be taken prior to metal panel and flashing fabrication.

1.05 – Product Delivery, Handling and Storage

A. Protect metal finish per panel manufacturer's recommendations. Store materials in accordance with panel manufacturer's recommendations.

Part 2 – PRODUCTS

2.01 PANEL SYSTEM

A. The panel system shall be of such profile and gauge to withstand a load requirement of 25 psf, with a deflection limitation of L/60 for aluminum and L/180 for steel.

B. All metal panels required to complete the installation shall consist of:

1. Panel profile shall be 24 gauge Versa–Span 18" flat pan.
2. The outside exposed surface of all exterior panels shall receive a two–coat factory color finish of Kynar 500 per ASTM A 653–94.

C. Flashings and Closures – Metal flashings shall be fabricated from the same metal, gauge and finish as the exterior panels, unless shown otherwise on the drawings. Profile closure strips shall be placed where shown on the drawings and fabricated from metal or synthetic rubber.

D. Fasteners – Exterior panels shall be fastened with concealed clip system in accordance with the manufacturer's recommendations for exposure, snow loading, and uplift.

2.03 ACCESSORIES

A. All exposed fasteners shall be self–tapping 300 series stainless steel.

B. All self–drilling fasteners shall be protected with a corrosion resistant finish.

C. All Sealants (caulking) shall be compatible with panel materials.

PART 3 – EXECUTION

3.01 INSPECTION

A. Structural steel (or substructure) required for metal panel attachment shall be level and plumb.

B. Structural steel (or substructure) shall be structurally sound as determined by Architect/Engineer.

C. Structural steel (or substructure) shall be free of defects detrimental to metal panel work.

D. The contractor shall examine the alignment of the structural steel (or substructure) before installing any metal panels and shall not proceed with installation if the structural steel (or substructure) is not aligned to the tolerances established by the AISC Code of Standard Practice.

3.02 INSTALLATION

A. Field erection of all metal panels and accessories to be accomplished using qualified field mechanics and safety practices.

B. Metal panels should be erected level and plumb, in proper alignment and relation to structural steel (or substructure) and established lines. Panel erection must be started correctly and held true to line.

C. Metal panel and accessory erection shall be in accordance with an approved set of shop drawings.

D. Panel and accessory attachments (anchorage) shall be structurally sound, and per engineering recommendations, if required.

3.03 ADJUSTING AND CLEANING

A. Replace panels that have received irreparable damage.

B. Repair panels with minor damage.

C. Clean all foreign material from panel (building) gutter system when applicable.

D. Remove strippable film coating (if used) as soon as possible after surrounding material has been installed.

END OF SECTION

07420 – ALUMINUM COMPOSITE METAL PANEL SYSTEM

PART 1 GENERAL

7.1. General

A. This section includes Aluminum faced composite panels with mounting system. Panel mounting system including anchorages, shims, furring, fasteners, gaskets and sealants, related flashing adapters, and masking (as required) for a complete watertight installation.

1.02 References and standards

A. Aluminum Association Construction Manual – Aluminum sheet metal work and building construction

B. ASTM B 117: Method of salt spray (fog) testing

C. ASTM D 1781: Climbing drum peel test for adhesives

D. ASTM D 3359: Methods for measuring adhesion by tape test.

E. ASTM D 3363: Method for film hardness by pencil test.

F. ASTM D 2794: Resistance of organic coatings to the effects of rapid deformation (impact)

G. ASTM D 1308: Effect of household chemicals on clear and pigmented organic finishes.

H. ASTM D 2247: Practice for testing water resistance or coatings in 100% relative humidity.

I. ASTM D 1735: Method for water fog testing of organic coatings.

J. ASTM D 1929: Standard test method for determining ignition temperature of plastics.

K. ASTM D 635: Standard test method for rate of burning and/or extent and time of burning of plastics in a horizontal position.

L. ASTM D 822: Practice for operating light and water exposure apparatus (carbon–arc type) for testing paint, varnish, lacquer and related products.

M. ASTM E 84: Surface burning characteristics of building materials.

1.03 Submittals

A. Shop drawings: indicate layout, configuration, unit identification marks, connection details, support items, dimensions, openings, edge details, and relationship to adjacent components. Indicate locations for blocking and embedded items.

B. Samples: submit two panels approximately 4" x 6" illustrating surface finish, color, texture and gloss. These samples may include evaluation reports and/or test reports supporting the use of the product.

1.04 Product delivery, handling and storage

A. Panel finish and edges shall be protected in transit by crates and interleafed coated paper. Panels shall have a protective film over the finish to be removed after installation is complete.

B. Materials shall be stored in an area safe from damage and protected from the weather.

PART 2 PRODUCTS

7.1. Composite panels

A. Panels shall be Alucobond material manufactured by Federal Heath Visual Communications, 1840 Oakdale Avenue, Racine, WI (262–636–0070).

B. Panels shall be 4mm thick (.157").

C. Product Performance

1. Bond Integrity
   When tested for bond integrity, in accordance with ASTM D1781 (simulating resistance to panel delamination), there shall be no adhesive failure of the bond a) between the core and the skin nor b) cohesive failure of the core itself below the following values:
   Peel Strength: 115 N mm/mm (22.5 in lb/in) as manufactured
   115 N mm/mm (22.5 in lb/in) after 21 days soaking in water at 70°F
2. Fire Performance
   ASTM E 84 Flame Spread Index must be less than 25, Smoke Developed Index must be less than 450.
   ASTM D 1929 A self ignition temperature of 650oF or greater
   ASTM D 635 Requires a CC1 classification

D. Finishes: Coil coated KYNAR 500 or HYLAR 5000 based polyvinylidence fluoride (PVdF) or fluoro ethylene–alkyl vinyl ether (FEVE) resin in conformance with the following general requirements of AAMA 2605

1. Color:
   – Standard color as selected by the architect.
   – Custom color to be match by the panel supplier.
2. Coating thickness:
   – Colors: 1.0 mil (+/–0.2 mil).
   – Clear: 0.50 mil (+/–0.05 mil).
3. Hardness: ASTM D 3363; HB minimum using Eagle Turquoise Pencil
4. Impact:
   – Test method: ASTM D 2794: Gardner variable impact tester with 5/8" mandrel.
   – Coating shall withstand reverse impact of 1.5"/pounds per mil substrate thickness.
   – Coating shall adhere tightly to metal when subjected to #600 scotch tape pick–off test. Slight minute cracking permissible. No removal of film to substrate.
5. Adhesion:
   – Test method: ASTM D 3359
   – Coating shall not pick off when subjected to an 11"x11"x 1/16" grid and taped with #600 scotch tape.
6. Humidity resistance:
   – Test method: ASTM D 2247
   – No formation of blisters when subject to condensing water fog at 100% relative humidity and 100 degree Fahrenheit for 4000 hours.
7. Salt spray resistance:
   – Test method: ASTM B 117; Expose coating system to 4000 hours, using 5% NaCl solution.
   – Corrosion creepage from scribe line: 1/16" max.
   – Minimum blister rating of 8 within the test specimen field.
8. Outdoor Weather exposure:
   – Ten–year exposure at 45 degree angle facing south Florida exposure.
   – Maximum color change of 5 delta E units as calculated in accordance with ASTM D 2244.
   – Maximum chalk rating of 8 in accordance with ASTM D 4214.
   – No checking, crazing, adhesion loss.
9. Chemical resistance:
   – ASTM D 1308 utilizing 10% muriatic acid for an exposure time of 15 minutes. No loss of film adhesion or visual change when viewed by the unaided eye.
   – ASTM D 1308 utilizing 20% sulfuric acid for an exposure time of 18 hours. No loss of film adhesion or visual change when viewed by the unaided eye.
   – AAMA 2605 utilizing 70% reagent grade nitric acid vapor for an exposure time of 30 minutes. Maximum color change of 5 delta E units as calculated in accordance with ASTM 2244.

2.03 Panel Fabrication

A. Composition: Two sheets of aluminum sandwiching a solid core of extruded thermoplastic material formed in a continuous process with no glues or adhesives between dissimilar materials. The core material shall be free of voids and/or air spaces and not contain foamed insulation material. Products laminated sheet by sheet in a batch process using glues or adhesives between materials shall not be acceptable.

B. Aluminum face sheets: Thickness: 0.50mm (0.0197") (nominal), Alloy: AA300 series (painted material) AA5000 series (anodized material).

C. Panel weight: 4mm (0.157"): 1.12 lbs./ft2

D. Tolerances

1. Panel Bow: Maximum 0.8% of any 1828mm (72") panel dimension.
2. Panel Dimensions: Field fabrication shall be allowed where necessary, but shall be kept to an absolute minimum. All fabrication shall be done under controlled shop conditions when possible.
3. Panel lines, breaks, and angles shall be sharp, true, and surfaces free from warp and buckle.
4. Maximum deviation from panel flatness shall be 1/8" in 5'0" on panel in any direction for assembled units. (Non–accumulative – No Oil Canning)

E. System characteristics

1. Plans, elevations, details, characteristics, and other requirements indicated are based upon standards by one manufacturer. It is intended that other manufacturers, receiving prior approval, may be acceptable, provided their details and characteristics comply with size and profile requirements, and material/performance standards.
2. System must not generally have any visible fasteners, telegraphing or fastening on the panel faces or any other compromise of a neat and flat appearance.
3. System shall comply with the applicable provisions of the "Metal Curtain Wall, Window, Storefront, and Entrance Guide Specifications Manual" by AAMA and ANSI/AAMA 302.9 requirements for aluminum windows.
4. Fabricate panel system to dimension, size, and profile indicated on the drawings based on a design temperature of 70°F.
5. Fabricate panel system so that no restraints can be placed on the panel, which might result in compressive skin stresses. The installation detailing shall be such that the panels remain flat regardless of temperature change and at all times remain air and water tight.
6. The finish side of the panel shall have a removable plastic film applied prior to fabrication, which shall remain on the panel during fabrication, shipping, and erection to protect the surface from damage.

F. System type

1. Rout and return dry: System must provide a perimeter aluminum extrusion with integral weather–stripping as detailed on drawings. No field sealant required in joints unless specifically noted on drawings.

G. System performance: Composite panels shall be capable of withstanding building movements and weather exposures based on the following test standards required by the Architect and/or the local building code.

1. Wind load: If system tests are not available, mock–ups shall be constructed and tests performed under the direction of an independent third party laboratory, which show compliance to the following minimum standards:

   Panels shall be designed to withstand the Design Wind Load based upon the local building code, but in no case less than 20 pounds per square foot (psf) and 30 psf on parapet and corner panels. Wind load testing shall be conducted in accordance with ASTM E330 to obtain the following results.

   Normal to the plane of the wall between supports, deflection of the secured perimeter–framing members shall not exceed L/175 or 3/4", whichever is less.

   Normal to the plane of the wall, the maximum panel deflection shall not exceed L/60 of the full span.

   Maximum anchor deflection shall not exceed 1/16".

   At 1–1/2 times design pressure, permanent deflections of framing members shall not exceed L/100 of span length and components shall not experience failure or gross permanent distortion. At connection points of framing members to anchors, permanent set shall not exceed 1/16.

2. Air/water system test: If system tests are not available, mock–ups shall be constructed and tests performed under

C. Manufacturer Certificates:

1. Material Certificate: Signed by roofing manufacturer certifying that retained and new materials and components comply with Project Specifications and that materials furnished are compatible with one another and the adjacent work and are new and first quality.
2. System Design Certificate: Signed by roofing manufacturer certifying that roofing system design complies with requirements specified in "Performance Requirements" Article for the geographic location of the Project.
3. Include manufacturer's written approval of project details, materials, fastener pattern for insulation and membrane, and warranty requirements for the specific project substrate and location.

D. Maintenance Data: Manufacturer's complete recommended maintenance procedures for the roofing system, including precautions and warnings to prevent damage and deterioration to the roof system.

E. Warranty: Roof manufacturer's Limited Warranty with Product Data Submittal, including evidence of application for warranty.

F. Manufacturer's Reports:

1. Manufacturer's pre–installation notice.
2. Roof manufacturer's review of contract documents and written acceptance of application for warranty.
3. Inspection Reports: At completion of each inspection, two copies of manufacturer's field quality control reports of field inspections, including two copies of warranty shop drawing and manufacturer's final inspection punch list.

G. The Contractor shall submit a letter stating that he has reviewed all conditions of installation and installation details, and that installation is in compliance with manufacturers recommendations. Also that all materials used for the roof installation are acceptable to the roofing manufacturer.

1.04 QUALITY ASSURANCE

A. Installer Qualifications:

1. A qualified firm that is approved, authorized, or licensed by the roofing system manufacturer to install the manufacturer's product and that is eligible to receive manufacturer's warranty.
   a. When installing roofing membrane utilizing induction welding (Firestone Building Products; InvisiWeld System) installers shall have successfully completed a training course provided by the roofing membrane manufacturer prior to welding.
2. A single applicator with a minimum of five years previous successful experience in installations of similar systems with two years experience seaming the specified system.
3. Job Superintendent Requirements:
   a. Present at the job site at all times when work is being performed.
   b. Supervise workers as required to ascertain workmanship, progress and adherence to details.
   c. Responsible for schedule and coordination.
   d. Authority to make binding commitments upon Contractor at the Project site.

B. Pre–Installation Notification

1. Two weeks prior to commencement of roofing installation, contact manufacturer to verify fastener types/frequency and a secured approval of the system design to ensure that the roofing system is registered properly.
   a. Utilize manufacturer's standard pre–installation notification form (PIN).
   b. Form must be completed and submitted to manufacturer to obtain warranty.
   c. Complete the pre–installation notification form (PIN) online. Go to manufacturer's website www.firestonepro.com/contractors and log into contractor area using contractor license number and password.

C. Pre–installation Conference: Conduct conference at Project site.

1. Prior to roofing installation, conduct a pre–installation conference at the project site.
2. Attendance: Contractor, Roofing installer, job superintendent and roof manufacturer's technical representative.
3. Agenda:
   a. Maintaining water tightness of the building during roof installation, including night seal procedures.

1.05 DELIVERY AND STORAGE

A. All materials provided by the membrane manufacturer shall be delivered with appropriate packaging labels indicating appropriate warnings, storage conditions, lot numbers and usage instructions.

B. Materials shall be delivered dry in manufacturer's original, unopened package and be properly stored off the ground on pallets, minimum 4" high and off the roof. Completely cover all material with canvas tarpaulins to prevent the intrusion of water. Plastic covers will not be acceptable.

1.06 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.07 WARRANTY

A. Contractor:

1. Owner's standard form covering repairs required to correct defects due to faulty materials or workmanship, and to otherwise maintain the roof in a watertight condition and to correct all other defects without regard to watertightness. Any repair shall be done at the expense of the Contractor.
2. Warranty Work against the following:
   a. Leakage of water or moisture through roofing and flashing.
   b. Leakage of water or moisture inside the building or within the construction.
   c. Leakage of roofing material inside or outside the building.
   d. Blistering, tearing, alligatoring and other defects.
   e. Other objectionable defects.
   f. Any failure in roofing and flashing causing the roof system to become unserviceable in any manner.
3. In event that any of the work does not perform as warranted, provide the following without cost to the Owner:
   a. Immediate repair and correction of defective work using roof manufacturer's compatible materials and approved installation methods. Match original Work.
   b. Immediate repair to other building construction or furnishings damaged as a result of defective work.
   c. Full warranty for not less than two years on repairs from the date of completion of such repairs.
4. The Owner reserves the right to make emergency repairs to protect the building contents from damage without invalidating manufacturer's warranty and guarantee. Written notice of such repairs shall be made in the prescribed time.
5. Warranty Period: 2 years from date of Owner's final acceptance

B. Roofing System Manufacturer:

1. Roofing manufacturer must provide the Owner with their standard warranty or better. Warranty shall cover workmanship and materials required to maintain a watertight condition and a roof system free of defects.
2. Submit a Material Certification Form to certify that materials made available by the membrane manufacturer are used throughout the project where needed.
3. Warranty Period: 20 years from date of Owner's final acceptance.

C. Deliver warranties to Owner before final payment is made.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Source Limitations: Obtain components including roof insulation and fasteners for roofing system from the same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.

2.02 PERFORMANCE REQUIREMENTS

A. Installed roofing and components shall be in accordance with the roofing system manufacturer's current published application procedures, the general recommendation of the NRCA, and requirements of the Authority Having Jurisdiction (AHJ), for the specific building location, building height, substrate type, and roofing system manufacturer's specified warranty.

B. Installed roof system must comply with all codes and regulations of authorities having jurisdiction including but not limited to wind uplift, flame spread, and hail resistance.

C. Roofing System Design: Provide membrane roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to ASCE/SEI 7.

D. Exterior Fire–Test Exposure: ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

2.03 MEMBRANE ROOFING

A. Fabric–Reinforced Thermoplastic Polyolefin Sheet: ASTM D 6878, internally scrim reinforced, uniform, flexible TPO sheet.
   1. Products:
      a. Firestone Building Products Company; Ultra–Ply TPO.
      b. No substitutions allowed.
   2. Membrane:
      a. Exposed Face Color: White.
      b. Thickness (ASTM D751 & ANSI/RMA IPR–1): 60 mils minimum.
      c. Breaking Strength (ASTMD751, Grab Method): 200 lb. minimum.
      d. Tearing Strength (ASTM D751), Tongue Tear: 120 lbf.
      e. Dimensional stability (ASTM D 1204): 6 hours at 158 deg. F, 1.0 percent maximum.
      f. Low Temperature Bend: ASTM D 2136: –40 degrees F Maximum.
      g. Ply Adhesion: ASTM D 413, Strip specimen, Type A, Machine Method, 8.0 lbs per inch minimum.

2.04 AUXILIARY MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.

B. Sheet Flashing: Manufacturer's standard unreinforced thermoplastic polyolefin sheet flashing, 60 mils thick, minimum, of same color as sheet membrane.

C. Coated Metal: G90 galvanized steel, TPO coated on one side, color to match roofing membrane, as supplied by the roof system manufacturer, minimum 24 gauge, 0.028–inch for flashed metal details.

D. Bonding Adhesive: Roofing membrane manufacturer's standard TPO bonding adhesive.

E. Insulation Fastening Plates: Manufacturer's approved corrosion resistant plates as furnished and approved by roof system manufacturer for specific application.

F. Fasteners (Insulation and membrane): Manufacturer's approved #15 heavy duty, self tapping series 300, screws as furnished and/or warranted in writing by roofing system manufacturer.

G. Induction Welding Plates: Firestone Building Products; InvisiWeld plates.

H. Water Cutoff Mastic: As furnished by membrane manufacturer for this system.

I. Inside Corners and Outside Corners and Molded Pipe Flashings: Pre–molded components as furnished by membrane manufacturer for this system.

J. Night Seal: As furnished by membrane manufacturer for this system.

K. Other miscellaneous materials shall be manufacturer's best grade available and approved in writing by the roof system manufacturer for the specific application.

L. Sealants
   1. General Construction Sealants: One–part non–priming gun–grade urethane sealant.
   2. Roofing Sealants: Sealants used in contact with roofing system shall be roofing membrane manufacturer's approved sealant used to seal penetrations through the membrane system or miscellaneous sealant applications that come in contact with roofing system.
   3. Backer Rod: Where required for sealant joints.

2.05 ROOF INSULATION

A. Polyisocyanurate Board Insulation: Rigid closed cell polyisocyanurate foam ASTM C 1289, Type II, glass–fiber mat faced on both major surfaces. Manufactured or approved by TPO membrane roofing manufacturer. See Drawings for total insulation thickness or required R–value.
   1. Products:
      a. Firestone Building Products Company; ISO 95+
      b. No substitutions allowed.
   2. Compressive Strength: ASTM D 1621, minimum 20 psi.
   3. Density: Minimum 2 lbs/pcf.
   4. Insulation thickness: Insulation shall be built up to the thickness indicated using a minimum of 2 layers with staggered joints.
      a. Minimum Thickness per Layer: 1 inch.
   5. Tapered insulation where indicated on roof plan. Minimum thickness 1/2 inch, factory sloped at 2 times the roof slope.

2.06 PROTECTION BOARD

A. Materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.

2.07 WALKWAYS

A. Flexible Walkways: Minimum of 30–inches by 30–inches factory–formed, nonporous, heavy–duty, solid–rubber, slip–resisting, surface–textured walkway pads, approximately 3/16 inch thick as furnished by roofing system manufacturer.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine roof areas for conditions that would prevent the proper application of new roofing and verify the following.
   1. Decking, curbing, renovation, and wall substrate construction has been completed.
   2. Deck and substrates are clean, smooth and free from depressions, waves, projections, defects and damage.
   3. Wood nailers are properly installed to receive roofing system.
   4. Surfaces in contact with any single ply material are free from bitumen, grease, oil or other foreign material.
   5. Surfaces in contact with roofing membrane are free from sharp edges, fins or projections.
   6. Materials are completely dry and free from ice and snow, including substrate, deck, insulation and roofing membrane as applicable. Confirm dryness by moisture meter.
   7. Roof equipment, openings, curbs, pipes, sleeves, ducts, vents and blocking members are solidly and properly set.
   8. Work has been completed where possible for other trades that require work or traffic on the roofing area.

B. Correct or complete any conditions requiring correction or completion prior to the installation of the roofing system. Notify the Owner in writing of any unacceptable conditions.

C. Verify the location of interior ducts, electrical lines, piping, conduit, and/or similar obstructions. Perform work to avoid contact with the above–mentioned items.

D. Start of work constitutes acceptance of deck substrate and site conditions.

3.02 PREPARATION

A. Broom clean roof surface immediately prior to roofing application. Debris under roof membrane is unacceptable.

3.03 INSULATION INSTALLATION

A. Primary Insulating Layer
   1. Comply with membrane roofing system manufacturer's written instructions for installing roof insulation.
   2. Fully adhere the insulation to the substrate in accordance with roofing system manufacturer's criteria for wind uplift in Project location to meet roofing system manufacturer's specified warranty.
   3. Install roof insulation directly over the substrate except where otherwise indicated.
   4. Stagger the end joints of the primary insulating layer; stagger joints top to bottom on multiple layer applications.
   5. Butt joints tight allowing no more than 1/4–inch wide gap between units. Fill any gaps larger than 1/4–inch.
   6. Do not rupture or deform the surface, facer, or structure of the insulation by handling.
   7. Do not use warped or bent insulation boards.
   8. Cut and fit insulation neatly at roof perimeter and roof penetrations to reduce openings to a minimum. Fill openings 1/4–inch or larger with insulation.
   9. Prior to application of membrane, secure loose areas so that no board movement or warpage exists.
   10. Prior to application of membrane, remove foreign matter, gravel, etc. from the substrate. Gravel or debris between the substrate and the roof membrane is not acceptable.
   11. Install temporary water cut off at completion of each day's work and remove upon resumption of work.

B. Tapered Insulation
   1. Install tapered insulation as required.
   2. Install additional insulation as outlined above.
   3. Install tapered crickets along the high side of all penetrations greater than 6 feet in width. Slope a minimum of 2 times the roof slope. Crickets are not required at skylight curbs.
   4. Taper insulation a minimum of 24–inches in each direction around scuppers and drains to provide for proper drainage.

3.04 PROTECTION BOARD INSTALLATION

A. Install protection board according to manufacturer's installation instructions.

3.05 MEMBRANE INSTALLATION, GENERAL

A. Roofing Membrane:
   1. Install roofing membrane in accordance with the manufacturer's installation instructions. Cut sheets to maximum size possible in order to minimize seams.
   2. Position membrane over substrate without stretching membrane. Allow membrane to relax one–half hour before bonding and flashing.
   3. Begin installation of roofing system at the highest point of the Project area and work to the lowest point. Prevent moisture migration into the roof system. Complete flashings, terminations, and seals in area on a daily basis.
   4. Execute work so membrane can be temporarily sealed on a down slope surface at the end of each day with night seal. Tie off with a water stop to the structural deck to prevent water flow into the new roofing installation.
   5. Secure perimeter in accordance with manufacturer's recommended procedures for building height and location to meet roofing system manufacturer's specified warranty. Do not use induction welding plates for edge securement.

B. Roof system manufacturer's representative shall be on site at the start of project to supervise operations and to inspect and approve seams.

C. Ensure that the installed roofing will not be marked, spotted, stained, or damaged. Power washing of the membrane may be required if surface staining is deemed unacceptable to the Owner.

3.06 ADHERED MEMBRANE ROOFING INSTALLATION

A. Bonding Adhesive: Apply to substrate and underside of membrane roofing at rate required by manufacturer and allow to partially dry before installing membrane roofing. Do not apply to splice area of membrane roofing.

B. In addition to adhering, mechanically fasten membrane roofing securely at terminations, penetrations, and perimeter of roofing.

C. Apply membrane roofing with side laps shingled with slope of roof deck where possible.

3.07 MEMBRANE SPLICING

A. Membrane Lap Splices: 6 inches wide, minimum. Locate field splices at roof drains outside drain sump.

B. Allow top sheet to fall freely into place over bottom ply without wrinkling or stretching.

C. Insure that surfaces to be spliced are cleaned, primed and dirt free. Use automatic hot air welding equipment approved by the roof system manufacturer for field seams. Seam small work and repairs with hand welders.
   1. Install minimum 1–1/2 inch wide weld.

D. Probe laps each day to verify seams are bonded. In addition, perform random lap test sample checks (including checks at start of each day) to verify peel strength. Caulk cut edges by applying manufacturer's seam sealant, if required.

3.08 FLASHING

A. Walls, Parapets, Mechanical Equipment Curbs.
   1. Install flashing at roof penetrations, interruptions, and any roof intersection including roof edges with vertical or sloped surfaces in accordance with manufacturer's recommended procedures and Drawings.
   2. Curbs, projections and riserwall conditions require a minimum 8–inch height for base flashings and sleeves.
   3. Apply manufacturer's bonding adhesive to both underside of flashing and surface to which it is to be bonded, at a rate of approximately 1 gallon per 50 sq.ft of surface coverage.
   4. Do not apply bonding adhesive to portion of flashing that overlaps onto itself. Use seam tape where membrane overlaps itself.
   5. Allow bonding adhesive to dry to a finger touch until it does not string or stick to a dry finger. Roll the flashing into dry adhesive. Care must be taken to assure that flashing does not bridge where there is any change of direction.
   6. Mechanically fasten top all of flashing under or through appropriate counter flashing with approved fasteners as shown on Drawings.
   7. Install flashings for vents, pipe, soil vents and other round projections in accordance with manufacturer's recommendations and Drawings.
   8. Install uncured or preformed flashing membrane as required to form a continuous membrane seal in each corner or change in plane.
   9. Waterproof and positively secure flashings with termination bar at the top and sides to prevent seepage behind or into the flashing or roofing system.

B. Other Penetrations:
   1. Flash penetrations passing through membrane in accordance with the manufacturer's recommended procedure, Specifications and Drawings.
   2. Seal flashing directly to the penetration passing through the membrane system.
   3. Pipes, Round Supports:
      a. Flash pipes with pre–molded pipe flashings where their installation is possible.
      b. Where molded pipe flashings cannot be installed, use field fabricated pipe seals.
   4. Pipe Clusters and Unusually Shaped Penetrations: Flash pipe clusters and unusually shaped penetrations which prohibit the installation of field fabricated pipe seals with hooded sheet metal boxes. Provide penetration boxes with solid sheet metal face closures. Slope piping away from the penetration flashings. Provide removable tops.
      a. Limit the use of pitch pans and sealer to specific Owner–approved locations. Provide rain–tight umbrellas/hoods for pitch pans.

3.09 WALKWAY INSTALLATION

A. General: Do not install flexible walkways within 6 feet of a roof perimeter.

B. Install walkway products in locations indicated. Adhere walkway products to substrate with compatible adhesive or seam tape according to roofing system manufacturer's written instructions. Hot air weld perimeters to the field membrane.

3.10 FIELD QUALITY CONTROL

A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Owner.

B. Repair or remove and replace components of membrane roofing system where test results or inspections indicate that they do not comply with specified requirements.

C. Submit manufacturer's Letter of Acceptance (refer to attached sample).

3.11 CLEANING

A. Exterior: Remove debris, adhesives and sealant from surfaces including removal of marks, spots, stains, and sediment from the finished roof surface and power washing of the membrane if the surfaces are deemed unacceptable by the Owner.

Interior: Work related dirt, debris, drippage, spills, etc.

END OF SECTION

07600 – FLASHING AND SHEET METAL

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes provisions and procedures governing the fabrication, furnishing and installation of flashing, sheet metal, and integral accessories, including but not limited to, the following:

1. Metal counter flashing and base flashing (if any).
2. Metal wall flashing and expansion joints.
3. Exposed metal trim/fascia units.
4. Miscellaneous sheet metal accessories.

1.02 PROJECT CONDITIONS

A. Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.

PART 2 – PRODUCTS

2.01 SHEET METAL FLASHING AND TRIM MATERIALS

A. Zinc–coated steel: commercial quality with 0.20 percent copper, ASTM A 526 except ASTM A 527 for lock–forming, G90 hot–dip galvanized, mill phosphatized where indicated for painting; 0.0359–inch thick (20 gauge) except as otherwise indicated.

B. Solder: provide 50 – 50 tin/lead solder (ASTM B 32), with rosin flux.

C. Fasteners: same metal as flashing/sheet metal or other non–corrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.

D. Mastic sealant: polyisobutylene; nonhardening, nonskinning, non–drying, nonmigrating sealant.

E. Elastomeric sealant: generic type recommended by manufacturer of metal and fabricator of components being sealed and complying with requirements for joint sealants as specified in Division 7 section "Joint Sealers."

F. Adhesives: type recommended by flashing sheet manufacturer for waterproof/weather–resistant seaming and adhesive application of flashing sheet.

G. Regiets: metal units of type and profile indicated, compatible with flashing indicated, noncorrosive.

H. Metal accessories: provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material– being installed, noncorrosive, size and gage required for performance.

2.02 FABRICATED UNITS

A. Shop fabricate work to greatest extent possible. Comply with details shown and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather–resistant performance, with expansion provisions for running work, sufficient to permanently prevent leakage, damage, or deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil–canning, buckling, and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.

B. Fabricate non–moving seams in sheet metal with flat–lock seams. Tin edges to be seamed, form seams, and solder.

C. Expansion provisions: where lapped or bayonet–type expansion provisions in work cannot be used or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

D. Sealant joints: where movable, non–expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.

E. Separations: provide for separation of metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.

2.03 ELASTIC EXPANSION JOINTS

A. Provide factory–fabricated units of size and profile indicated, complete with prefabricated corner units, intersection unit, and splicing materials. Provide complete with elastic sheet flashing forming the primary joint membrane, in a supported, "bellows" arrangement designed for securement to both sides of expansion joints. Underside of bellows insulated with adhesively applied, flexible, closed–cell rubber or plastic not less than 3/8–inch thick.

B. Type: metal flanged edges, 3 to 4 inches wide, formed to profiles as indicated to fit curbs and designed for nailing to curb substrate. Provide metal flanges in the following thicknesses:
   1. Zinc–coated steel: 0.0179 inch (26 gage).

C. Looped bellows vs width: 5 to 6 inches, exclusive of flanges.

D. Manufacturers: subject to compliance with requirements, provide products by one of the following:

1. AFCO Products, Inc.
2. Celotex Corporation
3. International Permalite/Roofing Components Group.
4. Manville/Roofing Systems Division (#EJ–4).
5. York Manufacturing, Inc.

2.04 WARRANTY

A. All sheetmetal and flashings to have a 2 year material and workmanship warranty.

PART 3 – EXECUTION

3.01 INSTALLATION REQUIREMENTS

A. Comply with manufacturer's installation instructions and recommendations and with SMACNA "Architectural Sheet Metal Manual" except as otherwise indicated. Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weatherproof

B. Install reglets to receive counter flashing in a manner and by methods indicated. Where shown in concrete, furnish reglets to trades of concrete work for installation as work of Division 3 sections. Where shown in masonry, furnish reglets to trades of masonry work, for installation as work of Division 4 sections.

C. Install counter flashing in reglets, either by snap–in seal arrangement or by welding in place for anchorage and filling reglet with mastic or elastomeric sealant, as indicated and depending on degree of sealant exposure.

D. Nail flanges of expansion joint units to curb nailers, at maximum spacing of 6 inches o.c. fabricate seams at joints between units with minimum 3–inch overlap, to form a continuous, waterproof system.

END OF SECTION

07901 – JOINT SEALANTS

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes provisions and procedures governing the furnishing and installation of joint sealers for the following locations:

1. Exterior joints in vertical surfaces
2. Non–traffic horizontal surfaces as indicated below.
   a. Joints between different materials listed above.
   b. Perimeter joints between materials listed above and frames of doors and windows.
   c. Other joints as indicated.

1.02 SYSTEM PERFORMANCES

A. Provide joint sealers that have been produced and installed to establish and maintain watertight and airtight continuous seals.

1.03 PROJECT CONDITIONS

A. Joint width conditions: do not proceed with installation of joint sealers where joint widths are less than allowed by joint sealer manufacturer for application indicated.

B. Joint substrate conditions: do not proceed with installation of joint sealers until contaminants capable of interfering with their adhesion are removed from joint substrates.

PART 2 – PRODUCTS

2.01 MATERIALS, GENERAL

A. Compatibility: provide joint sealers, joint fillers and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

B. Colors: provide color of exposed joint sealers as selected to match adjacent materials from manufacturer's standard colors.

2.02 ELASTOMERIC JOINT SEALANTS

A. Elastomeric sealant standard: ASTM C 920. Subject to compliance with requirements, provide one of the following:

1. One part nonsag urethane sealant for use nt:
   a. "Dynatrol I," Pecora Corp.
   b. "Sonolastic NP 1"; Sonneborn Building Products Div.
   c. "Dymonic"; Tremco Inc.
2. One part pourable urethane sealant for use T:
   a. "NR 201 Urexpan"; Pecora Corp.
   b. "Sonolastic SL 1"; Sonneborn Building Products Div.
3. Butyl polyisobutylene tape sealant:
   a. "Extru Seal Tape"; Pecora Corp.
   b. "Shim Seal Tape"; Pecora Corp.
   c. "PTI 606"; Protective Treatments, Inc
   d. Tremco 440 Tape"; Tremco Inc.

2.03 JOINT SEALANT BACKING

A. Provide sealant backings of material and type which are nonstaining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Plastic foam joint fillers: preformed, compressible, resilient, nonwaxing, nonextruding strips of flexible, nongassing plastic foam of material indicated below, nonabsorbent to water and gas; and of size, shape and density to control sealant depth and otherwise contribute to producing optimum sealant performance. Either open cell polyurethane foam or closed cell polyethylene foam, unless otherwise indicated, subject to approval of sealant manufacturer, for cold applied sealants only.

C. Elastomeric tubing joint fillers: neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, capable of remaining resilient at temperatures down to –26 Deg F (–15 Deg C). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and otherwise contribute to optimum sealant performance.

D. Bond breaker tape: polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inferable joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self adhesive tape where applicable.

2.04 MISCELLANEOUS MATERIALS

A. Primer: provide type recommended by joint sealer manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealer substrate tests and field tests.

B. Cleaners for nonporous surfaces: provide nonstaining, chemical cleaners of type which are acceptable to manufacturers of sealants and sealant backing materials, which are not harmful to substrates and adjacent nonporous materials, and which do not leave oily residues or otherwise have a detrimental effect on sealant adhesion or in–service performance.

C. Masking tape: provide nonstaining, nonabsorbent type compatible with joint sealants and to surfaces adjacent to joints.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine joints indicated to receive joint sealers, with installer present, for compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealer performance. Do not proceed with installation of joint sealers until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Surface cleaning of joints: clean out joints immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers.

B. Joint priming: prime joint substrates where indicated or where recommended by joint sealer manufacturer based on preconstruction joint sealer substrate tests or prior experience. Apply primer to comply with joint sealer manufacturer s recommendations. Confine primers to areas of joint sealer bond, do not allow spillage or migration onto adjoining surfaces.

C. Masking tape: use masking tape where required to prevent contact of sealant with adjoining surfaces which otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.03 INSTALLATION OF JOINT SEALERS

A. Comply with joint sealer manufacturers' printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

1. Elastomeric sealant standard: ASTM C 962.

B. Installation of sealant backings: install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability.

C. Installation of sealants: install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configurations and providing uniform, cross sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.

1. For exterior joints: provide appropriate "elastomeric" sealant.

D. Tooling of nonsag sealants: immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents which discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.
1. Provide concave joint configuration per figure 6a in ASTM C 962, unless otherwise indicated.

3.04 CLEANING

A. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur.

END OF SECTION

08111 – STANDARD STEEL DOORS AND FRAMES

PART 1 GENERAL

1.01 SUMMARY

A. This section includes provisions and procedures governing the furnishing and installation of steel doors, frames, and integral accessories.

B. Doors: seamless, hollow or composite construction standard steel doors.

C. Frames: pressed steel frames and interior glazed panels of welded unit type.

D. Assemblies: provide standard steel door and frame assemblies as required for thermal rated (insulated) applications.

E. Provide factory primed doors and frames to be field painted.

1.02 SUBMITTALS

A. Product data for each type of door and frame specified, including details of construction, materials, dimensions, hardware preparation, core, label compliance, sound ratings, profiles, and finishes.

1.03 QUALITY ASSURANCE

A. Provide doors and frames complying with Steel Door Institute "Recommended Specifications Standard Steel Doors and Frames" ANSI/SDI–100 and as herein specified.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Available manufacturers: subject to compliance with requirements, manufacturers offering standard steel doors and frames which may be incorporated in the work include; but are not limited to, the following:

1. Amweld Building Products, Inc.
2. Ceco Corp.
3. Steelcraft Manufacturing Co.

2.02 MATERIALS

A. Cold rolled steel sheets: commercial quality carbon steel, complying with ASTM A 366 and ASTM A 568.

B. Galvanized steel sheets: zinc–coated carbon steel sheets of commercial quality, complying with ASTM A 526, or drawing quality, ASTM A 642, hot dipped galvanized in accordance with ASTM A 525, with A60 or G60 coating designation, mill phosphatized.

C. Supports and anchors: fabricate of not less than 18–gauge sheet steel; galvanized where used with galvanized frames.

D. Inserts, bolts, and fasteners: manufacturer's standard units. Where items are to be built into exterior walls, hot–dip galvanize in compliance with ASTM A 153, class C or C as applicable.

E. Shop applied primer paint: rust–inhibitive enamel or paint, either air drying or baking, suitable as a base for specified finish paints complying with ANSI a224.1, test procedure and acceptance criteria for prime painted steel surfaces for steel doors and frames." apply after fabrication.

2.03 DOORS

A. Provide metal doors of SDI grades and models specified below or as indicated on Drawings or schedules:

1. Exterior doors: ANSI/SDI 100, Grade III, extra heavy duty, model 4, minimum 16 gauge galvanized steel faces.

B. Provide metal frames for doors and other openings, of types and styles as shown on Drawings and schedules. Conceal fastenings, unless otherwise indicated. Fabricate frames of minimum 18 gauge cold rolled steel.

1. Fabricate frames with mitered, coped, or welded corners.
2. Form exterior frames from 16 gauge galvanized steel.

C. Plaster guards: provide minimum 26 gauge steel plaster guards or mortar boxes at back of hardware cutouts.

2.05 FABRICATION

A. Fabricate steel door and frame units to be rigid, neat in appearance and free from defects, warp or buckle. Wherever practicable, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory–assembled before shipment, to assure proper assembly at project site. Comply with ANSI/SDI –100 requirements.

1. Clearances: not more than 1/8 inch at jambs and heads. Not more than 3/4 inch at bottom.

B. Tolerances: comply with SDI 117 "Manufacturing Tolerances Standard Steel Doors and Frames."

C. Fabricate exterior doors, panels, and frames from galvanized sheet steel in accordance with SDI–112. Close top and bottom edges of exterior doors as integral part of door construction or by addition of minimum 16 gauge inverted steel channels.

D. Exposed fasteners: unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.

E. Thermally rated (insulating) assemblies: at exterior locations and elsewhere as shown or scheduled, provide doors fabricated as thermal insulating door and frame assemblies and tested in accordance with ASTM C 236 or ASTM C 976 on fully operable door assemblies.

1. Provide thermally rated assemblies with u factor of 0.41 BTU/(hr x sq ft x deg F) or better

F. Hardware preparation: prepare doors and frames to receive mortised and concealed hardware in accordance with final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSI a115 series specifications for door and frame preparation for hardware.

G. Locate hardware as indicated on final shop drawings or, if not indicated, in accordance with "Recommended Locations for Builder's Hardware on Standard Steel Doors and Frames," published by the Door and Hardware Institute.

H. Shop painting: clean, treat, and paint exposed surfaces of steel door and frame units, including galvanized surfaces. Clean steel surfaces of mill scale, rust, oil, grease, dirt, and other foreign materials before application of paint. Apply shop coat of prime paint of even consistency to provide a uniformly finished surface ready to receive finish paint.

I. Glazing stops: minimum 20 gauge steel. Provide non–removable stops on secure side of interior panels. Provide screw applied removable glazing beads on inside of glass panels.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Install standard steel doors, frames, and accessories in accordance with final shop drawings, manufacturer's data, and as herein specified.

B. Placing frames: comply with provisions of SDI–105 "Recommended Erection Instructions for Steel Frames," unless otherwise indicated. Install at least 3 wall anchors per jamb at hinge and strike levels. Attach wall anchors to studs with screws.

C. Door installation: fit hollow metal doors accurately in frames, within clearances specified in ANSI/SDI –100.

END OF SECTION

08410 – ALUMINUM ENTRANCES AND STOREFRONT

PART 1 – GENERAL

1.01 Summary

A. Section Includes: Architectural Aluminum Storefront Systems, including perimeter trims, stools, accessories, shims and anchors, and perimeter sealing of storefront units.

B. Related Sections:

1. Section 08800 – Glazing

1.02 System Description

A. Storefront System Performance Requirements:

1. Air Infiltration: The test specimen shall be tested in accordance with ASTM E 283. Air infiltration rate shall not exceed 0.06 cfm/ft² at a static air pressure differential of 6.24 psf.
2. Water Resistance: The test specimen shall be tested in accordance with ASTM E 331. There shall be no leakage at a minimum static air pressure differential of 8 psf as defined in AAMA 501.
3. Uniform Load: A static air design load of 20 psf shall be applied in the positive and negative direction in accordance with ASTM E 330. There shall be no deflection in excess of L/175 of the span of any framing member. At a structural test load equal to 1.5 times the specified design load, no glass breakage or permanent set in the framing members in excess of 0.2% of their clear spans shall occur.

1.04 Submittals

A. General: Prepare, review, approve, and submit specified submittals in accordance with "Conditions of the Contract" and Division 1 – Submittals Sections. Product data, shop drawings, samples, and similar submittals are defined in 'Conditions of the Contract.' Quality Assurance/Control Submittals:

1. Test Reports: Submit certified test reports showing compliance with specified performance characteristics.

1.05 Warranty

A. Project Warranty: Refer to "Conditions of the Contract"for project warranty provisions.

B. Manufacturer's Product Warranty: Submit, for Owner's acceptance, manufacturer's warranty for storefront system as follows:

1. Warranty Period: Two (2) years from Date of Substantial Completion of the project provided however that the Limited Warranty shall begin in no event later than six months from date of shipment by storefront system manufacturer.

1.06 Quality Assurance

A. Qualifications:

1. Installer Qualifications: Installer experienced (as determined by contractor) to perform work of this section who has specialized in the installation of work similar to that required for this project and who is acceptable to product manufacturer.
2. Manufacturer Qualifications: Manufacturer capable of providing field service representation during construction, approving acceptable installer and approving application method.

B. Pre–Installation Meetings: Conduct pre–installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements.

1.07 Delivery, Storage, and Handling

A. Ordering: Comply with manufacturer's ordering instructions and lead–time requirements to avoid construction delays.

B. Packing, Shipping, Handling, and Unloading: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials protected from exposure to harmful weather conditions. Handle storefront material and components to avoid damage. Protect storefront material against damage from elements, construction activities, and other hazards before, during and after storefront installation.

PART 2 – PRODUCTS

2.01 Manufacturers (Acceptable Manufacturers/Products)

A. Acceptable Manufacturers:

1. Kawneer Company, Inc.
2. or approved equal

2.02 Materials

A. Aluminum (Storefront and Components):

1. Material Standard: Extruded Aluminum, ASTM B 221; 6063–T5 alloy and temper.
2. Member Wall Thickness: Each framing member shall provide structural strength to meet specified performance requirements.
3. Tolerances: Reference to tolerances for wall thickness and other cross–sectional dimensions of storefront members are nominal and in compliance with AA Aluminum Standards and

08410 – ALUMINUM ENTRANCES AND STOREFRONT, PART 3 – EXECUTION *(CONTINUED)*

1. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

3.02 Installation

A. General: Install storefront systems plumb, level, and true to line, without warp or rack of frames with manufacturer's prescribed tolerances and installation instructions. Provide support and anchor in place.

1. Dissimilar Materials: Provide separation of aluminum materials from sources of corrosion or electrolytic action contact points.
2. Weathertight Construction: Install sill members and other members in a bed of sealant or with joint filler or gaskets, to provide weathertight construction. Coordinate installation with wall flashings and other components of construction.
   a. Refer to Division 7 Joint Treatments (Sealants) for installation requirements.

B. Related Products Installation Requirements:

1. Sealants (Perimeter): Refer to Division 7 Joint Treatment (Sealants) Section.
2. Glass: Refer to Division 8 Glass And Glazing Section.

C. Reference: ANSI 297.1, CPSC 16 CFR 1201 and GANA Glazing Manual.

3.03 Field Quality Control

A. Field Tests: Architect shall select storefront units to be tested as soon as a representative portion of the project has been installed, glazed, perimeter caulked and cured. Conduct tests for air infiltration and water penetration with manufacturer's representative present. Tests not meeting specified performance requirements and units having deficiencies shall be corrected as part of the contract amount.

1. Testing: Testing shall be performed by a qualified independent testing agency. Refer to Division 1 Testing Section for payment of testing and testing requirements. Testing Standard per AAMA 503, including reference to ASTM E 783 for Air Infiltration Test and ASTM C 1105 Water Infiltration Test.
   a. Air Infiltration Tests: Conduct tests in accordance with ASTM E 783. Allowable air infiltration shall not exceed 1.5 times the amount indicated in the performance requirements or 0.09 cfm/ft², whichever is greater.
   b. Water Penetration Tests: Conduct tests in accordance with ASTM E 1105. No uncontrolled water leakage is permitted when tested at a static test pressure of two-thirds the specified water penetration pressure but not less than 6.24 psf.

B. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with manufacturer's instructions.

3.04 Protection and Cleaning

A. Protection: Protect installed product's finish surfaces from damage during construction. Protect aluminum storefront system from damage from grinding and polishing compounds, plaster, lime, acid, cement, or other harmful contaminants.

B. Cleaning: Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance. Remove construction debris from project site and legally dispose of debris.

END OF SECTION

08710 – FINISH HARDWARE

PART 1 – GENERAL

1.01 SUMMARY

A. Furnish labor and material to complete hardware work indicated, as specified herein, or as may be required by actual conditions at building.

B. The work in this section shall include the furnishing of all items of finish hardware as herein after specified or necessary to complete the building, except those items which are specifically excluded from this section of the specification. label indicating fire door to be equipped with fire exit hardware and provide UL label on exit device indicating "fire exit hardware".

1.03 SUBMITTALS

A. Provide product data for each type of product shown in the Door Hardware Schedule.

B. Where multiple models, finishes or other descriptive information is indicated on the contractor's product submittal, indicate which items shown are to be provided.

C. The finish hardware supplier shall prepare and submit to the Architect four (4) copies of a complete schedule identifying each door and each set number, following the door numbering system. Supplier shall submit the schedule for review, make corrections as directed and submit the corrected schedule for final approval. Approval of schedule will not relieve Contractor of the responsibilities for furnishing all necessary hardware, and correct quantities.

1.04 JOB CONDITIONS

A. Coordination: coordinate hardware with other work. Tag each item or package separately with identification related to the final hardware schedule and include basic installation instructions in the package. Furnish hardware items of proper design for use on doors and frames of the thicknesses, profile, swing, security and similar requirements indicated, as necessary for proper installation and function. Deliver individually packaged hardware items at the proper times to the proper locations for installation.

B. Templates: furnish hardware templates to each fabricator of doors, frames, and other work to be factory-prepared for the installation of hardware. Coordinate with the shop drawings of other work to confirm that adequate provisions are made for the proper installation of hardware.

PART 2 – PRODUCTS

2.01 MATERIALS AND FABRICATION

A. Fasteners: provide hardware manufactured to conform to published templates, generally prepared for machine screw installation. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.

B. Furnish all necessary screws, bolts, expansion shields and other devices, as required for proper hardware installation. The hardware supplier shall assume all responsibility for correct quantities.

C. Provide phillips flat head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive painted finish.

D. Provide concealed fasteners for hardware units that are exposed when door is closed except to the extent no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless their use is the only means of reinforcing the work adequately to fasten the hardware securely. Where thru-bolts are used as a means of reinforcing the work, provide sleeves for each thru-bolt or use sex screw fasteners.

2.02 MANUFACTURERS

A. Provide the products indicated in the Door Hardware Schedule.

1. Screws: provide Phillips flat head screws complying with the following requirements:
   a. For metal doors and frames install machine screws into drilled and tapped hole.
   b. For wood doors and frames install wood screws.
   c. Finish screw heads to match surface of hinges or pivots.
2. Hinge pins: except as otherwise indicated, provide hinge pins as follows:
   a. Out-swing exterior doors: non-removable pins.
   b. Out-swing corridor doors with locks: non-removable pins.
   c. Interior doors: non-rising pins.
3. Tips: flat button and matching plug, finished to match leaves.
4. Number of hinges: provide number of hinges indicated but not less than 3 hinges per door leaf for doors 90 inches or less in height and one additional hinge for each 30 inches of additional height.

2.03 LOCK CYLINDERS AND KEYING

A. Provide the products indicated in the Door Hardware Schedule.

B. Standard system: except as otherwise indicated, provide new master key system for project. Review the keying system with the Owner and provide the type required.

1. Equipment locks with manufacturer's special 5-pin tumbler cylinder with construction master key feature that permits voiding of construction keys without cylinder removal.

C. Key material: provide keys of nickel silver only.

D. Key quantity furnish 2 change keys for each lock, 4 master keys for each master system. Stamp all permanent master keys with key set number and "do not duplicate". Identify permanent keys in envelopes and send directly to Owner by registered mail.

2.04 LOCKS, LATCHES, AND BOLTS

A. Provide the products indicated in the Door Hardware Schedule.

B. Strikes: provide manufacturer's standard wrought box strike for each latch or lock bolt, with curved lip extended to protect frame, finished to match hardware set, unless otherwise indicated.

1. Provide flat lip strikes for locks with 3-piece, anti-friction latch bolts as recommended by manufacturer.

C. Lock throw provide 1/2 inch minimum throw of latch for bored and pre-assembled types of locks and 3/4 inch minimum throw of latch for mortise locks. Provide 1 inch minimum throw for all dead bolts.

2.05 DOOR CLOSERS

A. Provide the products indicated in the Door Hardware Schedule.

2.06 TRIM AND PLATES

A. Provide the products indicated in the Door Hardware Schedule.

B. Countersink holes and furnish S.S screws.

2.07 WEATHERSTRIPING

A. Provide Weatherstriping which is durable and appropriate for the location and use.

2.08 THRESHOLDS

A. Provide the products indicated in the Door Hardware Schedule.

B. Thresholds shall be supplied at all exterior doors and other locations shown on the door schedule, or as called for on the drawings.

2.09 EXIT DEVICES

A. All devices shall be in types and functions specified in the Door Hardware Schedule. All devices must be listed under "Panic Hardware" in accident equipment list of Underwriters Laboratories. All labeled doors with "Fire Exit Hardware" must have labels attached and be in strict accordance with UL.

2.10 DOOR STOPS

A. Provide the products indicated in the Door Hardware Schedule.

B. Door stops shall be furnished for all doors to prevent damage to doors or hardware from striking adjacent walls or fixtures.

2.12 HARDWARE FINISHES

A. Provide the finishes indicated in the Door Hardware Schedule.

B. Match items to the manufacturer's standard color and texture finish for the latch and lock sets (or push-pull units if no latch or lock sets).

C. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.

D. The designations used in schedules and elsewhere to indicate hardware finishes are those listed in ANSI/BHMA A156.18, "Materials and Finishes," including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Mount hardware units at heights indicated in following applicable publications except as specifically indicated or required to comply with governing regulations and except as otherwise directed by the Architect.

1. "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute.
2. NWWDA industry standard I.S.1.7, "Hardware Locations for Wood Flush Doors."

B. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 sections. Do not install surface mounted items until finishes have been completed on the substrates involved.

C. Set units level plumb, and true to line and location. Adjust and reinforce the attachment substitute as necessary for proper installation and operation.

D. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

E. Set thresholds for exterior doors in full bed of butyl rubber or polyisobutylene mastic sealant.

F. Weatherstripping and seals: comply with manufacturer's instructions and recommendations.

3.02 ADJUSTING, CLEANING, AND DEMONSTRATING

A. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate freely and smoothly or as intended for the application made.

1. Where door hardware is installed more than one month prior to acceptance or occupancy of a space or area, return to the installation during the week prior to acceptance or occupancy and make final check and adjustment of all hardware items in such space or area clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

B. Clean adjacent surfaces soiled by hardware installation.

C. Instruct Owner's personnel in the proper adjustment and maintenance of door hardware and hardware finishes.

END OF SECTION

08716 – AUTOMATIC DOOR

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Automatic bi-parting sliding door operator is overhead concealed, electro-mechanical microprocessor controlled, manufactured by Besam Inc. Local certified Besam distributor to perform installation. Besam Program Module to be used by installer during installation. For the name and number of your local Besam distributor, contact the factory at (800) 752-9290 or (609) 443-5800.

B. Related Sections

1. Section 08410 – Aluminum entrances and storefronts
2. Section 08710 – Door hardware
3. Division 1600 – Electrical
4. Section 08800 – Glazing
5. Section 07910 – Joint Sealants

1.02 REFERENCES – (Codes & Approvals)

A. Unit described complies with current ANSI/BHMA 156.10 American National Standard for Power Operated Pedestrian Doors. Unit is listed with ANSI/UL 325–1997 standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.

1.03 PERFORMANCE REQUIREMENTS

A. Automatic door equipment accommodates medium to heavy pedestrian traffic and up to the following weights for active leaf doors: 175 pound (80 kg) for bi-part.

B. Motion and presence detection system capable of operations within – 20ºF (–28ºC) and 125ºF (52ºC), and is unaffected by ambient light or ultrasonic frequencies.

C. Manufacturer has tested bi-parting sliding door operator at full load for over 4,000,000 cycles.

D. Standard bi-parting door package header capable of spanning 15'0" (4572mm) without intermediate supports. For packages without transom over 15'0" (4572mm), provide two equally spaced supports. For packages with transom over 15'0" (4572mm), provide sag rods through transom.

1.04 SUBMITTALS

A. Product Data: Submit manufacturer's product data and standard details for automatic doors.

B. Shop Drawings: Submit shop drawings for the fabrication and installation of automatic door, sidelites, operators and associated components of the work. Include anchors, hardware and other components not included in manufacturer's standard data.

1.05 OPERATION AND MAINTENANCE DATA

A. Spare parts list and owners manual are available from the manufacturer.

1.06 QUALITY ASSURANCE

A. Local certified Besam distributor to install operator in accordance with current ANSI/BHMA 156.10 American National Standard for Power Operated Pedestrian Doors and local applicable codes.

1.07 QUALIFICATIONS

A. Company specializing in manufacturing the products specified in this section shall have minimum ten years' experience and be a member of the American Association of Automatic Door Manufacturers (AAADM). Prior to placing door(s) in operation, an AAADM technician should inspect the doors for compliance with current ANSI/BHMA 156.10 American National Standard for Power Operated Pedestrian Doors.

B. Manufacturer to provide FACTORY owned central dispatch system for warranty service throughout North America. System to be available 24 hours a day, 365 days per year with a factory employee (not an answering service) to obtain malfunction information and dispatch appropriate service agency to the customer location. Toll free 1–800–95–BESAM to be prominently displayed on header of each operator. To insure quality service dispatching, outside contractors or answering services will not be accepted.

1.08 WARRANTY

A. Besam's automatic door components are warranted to be free of defects in materials or workmanship under normal use for a period of one year from the date of shipment from Besam's factory when the components have been installed by an authorized Besam distributor. Abuse, misuse, modification or improper repair or service by unauthorized technicians negates this warranty. During the period of this warranty Besam, at its sole option, will repair or replace any Besam automatic door component or parts thereof found to be defective in material or workmanship if any necessary return charges are prepaid. Components repaired or replaced under this warranty are warranted only for the remainder of the period covered by this warranty. For expanded warranty terms see Besam's warranty certificate.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Provide Series SL 500 automatic overhead concealed, fixed sidelites, medium stile, bi-parting sliding door system as manufactured by Besam, Inc. Hightstown, N.J. 08520. Perform installation by the local certified Besam Distributor.

2.02 EQUIPMENT

A. SL 500 overhead operator automatic bi-parting sliding door package consisting of:

1. Aluminum frames, with sidelites and active door leafs.
2. Bi–parting door operator with microprocessor electronic controls.
3. Operator housing, door carriers.

2.03 AUTOMATIC SLIDING DOOR PACKAGE

A. Operator

1. Operating unit is a microprocessor control and electro–mechanical operator. The unit consists of a 1/8 hp, DC motor and a mechanical drive assembly. The microprocessor system automatically defines and sets the opening and closing speeds and checks of the door system. Mechanical limit switches will not be accepted. The control includes an adjustable time delay (1 to 30 seconds). Software incorporates a self diagnosing system for easy serviceability. Microprocessor control capable of accepting options such as electric locks, battery back–up units, etc. without the need for additional control mechanisms (such as, relays, power supplies, etc.).

B. Aluminum Frames and Door:

1. Aluminum frames and doors for the Besam system fabricated of 6063–T5 alloy. Header capable of spanning 15'0" (4572mm) without intermediate supports. With header in place, doors are height of 82 3/4" (2102mm).
2. Vertical jambs are 1 3/4" (44mm) x 4 1/2"x (114mm) extruded aluminum. The header is 8 1/4"W (206mm) x 7"H (178mm) and incorporates a hinge point which locks cover in place or allows access for adjustments. Door leaf fabrication is narrow (or medium) stile extrusions. Extrusion used for exterior glass stops to be non–removable security type glazing bead to prevent unauthorized entry.

C. Operation and Safety:

1. Automatic sliding doors shall be powered by means of an electric motor and mechanical gear assembly transmitted to the active leaf(s) by a fiberglass reinforced tooth drive belt. Signals received by the motor from actuation controls shall power the door(s) to the open position. The opening cycle shall be slowed by means of microprocessor generated signal that electronically reduces voltage to the motor. The doors shall then complete the opening at slow speed until the door encounters the mechanical stop.
2. The door(s) are powered closed after remaining in the open position for the pre–set time delay. The door(s) return at the normal closing speed until they encounter a signal from the microprocessor at which point, speed is reduced, slowing the doors to creep speed until they reach the fully closed position.
3. EMERGENCY BREAKAWAY: The system shall be equipped with emergency release hardware which allows for the active leaf(s) to swing out in the direction of egress. On active leaf(s) only packages, the exterior active leaf(s) shall swing out 90 degrees from any position. Breakaway pressure shall be field adjustable to local Building Code requirements, but will be factory set at 50 pounds maximum in accordance with current ANSI/BHMA 156.10 American National Standard for Power Operated Pedestrian Doors.
4. WATCHDOG MONITORING: Microprocessor software is designed to constantly monitor system operations. Should door(s) speed, motor function or operations deviate from design criteria ranges, the Watchdog control circuit assumes command of the system and shuts down the automatic function by holding door(s) open. A secondary supervisory circuit monitors the main Watchdog control circuit every 255 door cycles, ready to perform as a backup.

2.04 MOTION SENSOR CONTROL DEVICE

A. Activating Devices:

1. Automatic swinging door package is equipped with a doorway monitoring system to control door opening, closing and hold open functions. The system is center–mounted above the doorway threshold on both sides of the automatic swinging door header and provides both motion and presence detection. The automatic door equipment contains an additional integral sensing device that automatically reverse the door(s) should an obstruction be encountered during the closing cycle, returning the door(s) to the full open position. When an obstruction is encountered in the opening cycle, the door comes to a complete stop.

B. Motion Sensor:

1. Built into the sensing system is an adjustable motion detection field running the complete width of the doorway (max. 84" [2134mm]) and up to 60" (1524mm) out from the doorway.

C. Presence Detection:

1. The presence zone runs the complete width of the door opening (max. 84") and extends up to 24" on either side of the active leaf. The system shall detect motionless people or equivalent. The detector remains energized and monitors the doorway at all times. The presence detection zone shall not be turned off before or during the door closing cycle.
2. Microprocessor software controlling presence detection is programmed to provide a "learn mode" so that self–adjustment to changes in floor conditions will be made automatically. The entire system will not be false impulsed by rain, snow, or frost and complies with current ANSI/BHMA 156.10 American National Standard for Power Operated Pedestrian Doors for detection field sizes and function. Functions are de–activated through the Besam position switch system when doors are not in use.

2.05 ELECTRICAL CHARACTERISTICS AND COMPONENTS

A. Electrical Characteristics: The D.C. motor shall not exceed 5 amps current draw. Electrical: dedicated 115V, 60 Hz, 10 amp incoming power with a solid earth ground connection for each automatic door package (two packages on a 20 amp circuit). Provide two low voltage 18 gauge stranded wires from automatic operator to remote (50 feet max.) activation devices (if required).

2.06 FINISHES

A. All exposed aluminum surfaces are clear anodized (AAC22A31), unless noted otherwise in the drawings.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify the openings are plumb and are dimensioned properly. Insure adequate support has been provided at the operator header. Proceed with the installation only after conditions are deemed satisfactory.

3.02 INSTALLATION & ADJUSTMENT

A. Install equipment in accordance with manufactures installation instructions. Adjust equipment per instructions and current ANSI/BHMA 156.10 American National Standard for Power Operated Pedestrian Doors.

END OF SECTION

08800 – GLAZING

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes glazing for the following products including those specified in other sections where glazing requirements are specified by reference to this section:

1. Window units.
2. Vision lites.
3. Entrances and other doors.

1.02 SYSTEM PERFORMANCE REQUIREMENTS

A. Glass design: glass thicknesses indicated on drawings are for detailing only. Contractor is to confirm glass thickness by analyzing project loads and in–service conditions. Provide glass lites for the various size openings in the thickness and strength (annealed or heat–treated) to meet or exceed the following criteria:
1. Minimum glass thickness, nominally, of lites in exterior walls is 6.0 mm (0.23 inch).

B. Normal thermal movement results from the following maximum change (range) in ambient and surface temperatures acting on glass–framing members and glazing components. Base engineering calculation on materials' actual surface temperatures due to both solar heat gain and nighttime sky heat loss.

1. Temperature change (range): 120 deg F(67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

1.03 SUBMITTALS

A. Product data for each glass product and glazing material indicated.

1.04 QUALITY ASSURANCE

A. Glazing publications: comply with published recommendations of glass product manufacturers and organizations below, except where more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this section or in referenced standards.

1. FGMA publications: "FGMA Glazing Manual."
2. Sigma publications: TM–3000 "Vertical Glazing Guidelines".

B. Safety glass: products complying with ANSI Z97.1 and testing requirements of 16 CFR Part 1201 for category II materials. Provide safety glass permanently marked with certification label of safety glazing certification council (SGCC) or other certification agency acceptable to authorities having jurisdiction.

C. Insulating glass certification program: provide insulating glass units permanently marked either on spacers or at least one component lite of units with appropriate certification label of Insulating Glass Certification Council (IGCC).

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Available products: subject to compliance with requirements, products that may be incorporated in the work include, but are not limited to, the products specified.

2.02 PRIMARY FLOAT GLASS PRODUCTS

A. Float glass: ASTM C 1036, Type I (transparent glass, flat), class as indicated below, and quality (glazing select), class as indicated.

B. Refer to requirements for sealed insulating glass units for performance characteristics of assembled units composed of clear glass, coated or uncoated, relative to visible light transmittance, U–values, shading coefficient, and visible reflectance.

2.03 HEAT–TREATED (TEMPERED) FLOAT GLASS

A. Uncoated, clear, heat–treated float glass: ASTM C 1048, condition A (uncoated surfaces), Type I (transparent glass, flat), Class 1 (clear), quality (glazing select), kind FT (fully tempered) unless otherwise indicated.

B. Uncoated, clear, heat–treated float glass: ASTM C 1048, condition A (uncoated surfaces), Type I (transparent glass, flat), Class 2 (clear heat–absorbing and light–reducing), quality Q3 (glazing select), performance characteristics for 6.0–mm t hick (0.23–inch thick) glass matching those indicated for annealed primary float glass; kind as indicated.

C. Manufacturers: subject to compliance with requirements, provide heat–treated glass by one of the following companies.

1. AFG Industries, Inc.
2. Cardinal IG.
3. Falconer Glass Industries.
4. Guardian Industries Corp.
5. PPG Industries, Inc
6. Temglass.

2.04 INSULATING GLASS PRODUCTS

A. Sealed insulating glass units: preassembled units consisting of organically sealed lites of glass separated by dehydrated air spaces complying with ASTM E774 and with other requirements indicated.

1. For properties of individual glass lites making up units, refer to requirements specified previously, applicable to types, classes, kinds, and conditions of glass products comprising lites of insulating glass units.
2. U–values are expressed as BTU/hour x sq. ft. x deg F.

2.05 ELASTOMERIC GLAZING SEALANTS

A. Compatibility: select glazing sealants and tapes of proven compatibility with other materials they will contact, including glass products, seals of insulating glass units, and glazing channel substrates, under conditions of installation and service, as demonstrated by testing and field experience.

B. Suitability: comply with sealant and glass manufacturer's recommendations for selecting glazing sealants and tapes that are suitable for applications indicated and conditions existing at time of installation.

C. Colors: provide color of exposed joint sealants selected to match adjacent materials from manufacturer's full range of standard colors for products of type indicated.

D. Elastomeric glazing sealant standard: ASTM C 920.

2.06 GLAZING TAPES

A. Products: subject to compliance with requirements, provide one of the following:

1. Back–bedding mastic glazing tape without spacer rod:
   a. PTI 303 glazing tape (without shim), Protective Treatments, Inc.
   b. Tremco 440 Tape, Tremco Inc
2. Back–bedding mastic glazing tape with spacer rod:
   a. PTI 303 glazing tape (with shim), Protective Treatments, Inc.
   b. Pre–shimmed Tremco 440 Tape, Tremco, Inc.

2.07 GLAZING GASKETS

A. Dense compression gaskets: molded or extruded gaskets of material selected by installer, compatible with adjacent materials and complying with applicable standards of elastomer, and of profile and hardness required to maintain watertight seal.

B. Soft compression gaskets: extruded or molded closed cell integrally skinned gaskets of material selected by installer, compatible with adjacent materials, and complying with ASTM C 509, Type II, black, and of profile and hardness required to maintain watertight seal.

C. Manufacturers: subject to compliance with requirements, provide products by one of the following companies.

1. Advanced Elastomer Systems, L.P.
2. Tremco, Inc.

2.08 MISCELLANEOUS GLAZING MATERIALS

A. General: provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials involved for glazing application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, primers and sealers: type recommended by sealant or gasket manufacturer.

C. Setting blocks: elastomeric material with a shore a durometer hardness of 85 plus or minus 5.

D. Spacers: elastomeric blocks or continuous extrusions with a shore a durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

E. Edge blocks: elastomeric material of hardness needed to limit glass lateral movement (side–walking).

F. Plastic foam joint fillers: preformed, compressible, resilient, nonstaining, nonextruding, nonoutgassing, strips of closed–cell plastic foam of density, size, and shape to control sealant depth and otherwise contribute to produce optimum sealant performance.

2.09 FABRICATION OF GLASS AND OTHER GLAZING PRODUCTS

A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for project, with edge and face clearances, edge and surface conditions, and bite complying with recommendations of product manufacturer and referenced glazing standard as required to comply with system performance requirements.

PART 3 – EXECUTION

3.01 GLAZING, GENERAL

A. Comply with combined recommendations of manufacturers of glass, sealants, gaskets, and other glazing materials, except where more stringent requirements are indicated, including those in referenced glazing publications.

B. Glazing channel dimensions as indicated on drawings provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by project conditions during installation.

C. Protect glass from edge damage during handling and installation as follows:

1. Use a rolling block in rotating glass units to prevent damage to glass corners. Do not impact glass with metal framing. Use suction cups to shift glass units within openings; do not raise or drift glass with a pry bar. Rotate glass lites with flaws or bowels on bottom horizontal edges so edges are located at top of opening, unless otherwise indicated by manufacturer's label.
2. Remove damaged glass from project site and legally dispose of off site. Damaged glass is glass with edge damage or other imperfections that, when installed, weaken glass and impair performance and appearance.

D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction sealant–substrate testing.

E. Install elastomeric setting blocks in sill rabbets, sized and located to comply with referenced glazing standard, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

G. Provide spacers for glass sizes larger than 50 united inches (length plus height)

END OF SECTION

09200 – GYPSUM DRYWALL

PART 1 – GENERAL

1.01 WORK INCLUDED

A. Interior walls of wood studs or metal studs and gypsum board.

B. Suspended interior gypsum board ceilings and soffits

C. Acoustical insulation in gypsum board walls.

D. Install all blocking concealed in gypsum board walls as required for items which require blocking.

1.02 QUALITY ASSURANCE

A. Requirements, abbreviations and acronyms for reference standards are defined in section 01090.

B. GA–GA–216 recommended specifications for the application and finishing of gypsum board.

C. ASTM C754 – installation of steel framing members to receive screw–attached gypsum wallboard, backing board, or water–resistant backing board.

D. S HH–I–521D– installation blankets, thermal mineral fiber for ambient temperatures.

PART 2 – PRODUCTS

2.01 GYPSUM BOARD

A. Provide gypsum wallboard materials in accordance with recommendations of GA–216.

B. Acceptable manufacturers:

1. U.S. Gypsum
2. National Gypsum
3. Georgia Pacific

C. Interior gypsum board:

1. Standard gypsum board: square cut ends, tapered edges; maximum permissible lengths; thickness as indicated on drawings.
2. Fire rated gypsum board: USG's Firecode "C" or Gold Bond's "Fire Shield", maximum permissible lengths; tapered edges, type "X" thickness as indicated on drawings.
3. Moisture–resistant gypsum board: chemically treated multi–layered face and back paper and water–resistant gypsum core; maximum permissible lengths; thickness as indicated on drawings.
4. Tile backer board: maximum permissible lengths, thickness and indicated on the drawings. Georgia–Pacific "DensShield" for 1/2" thickness and Georgia–Pacific "DensShield" "firestop" type "X" for 5/8" thickness.

2.02 GYPSUM BOARD ACCESSORIES

A. Provide gypsum wallboard accessories in accordance with Gypsum Association GA–216.

B. Screws: Self–drilling, self–tapping, type "S". Sizes are recommended by gypsum board manufacturer for wall and ceiling applications.
C. For interior work:

1. Corner beads: Galvanized steel with paper tape wings, 1–3/4" wide.
2. Edge trim: Galvanized metal.
3. Reinforcing tape, joint compound, adhesive, water, fasteners: in accordance with gypsum association GA–216.

PART 3 – EXECUTION

3.01 INSTALLATION OF FRAMING FOR GYPSUM BOARD CEILINGS

A. Coordinate locations of hangers with other work.

B. Install ceiling furring independent of walls, columns, and above ceiling work.

C. Space main carrying channels at maximum 48"on center, not more than 6' from perimeter walls. Lap splices minimum 12" and secure together 2" from each end of splice.

D. Place furring channels perpendicular to carrying channels at spacings indicated on drawings not more than 12" from perimeter walls. Lap splices 8" and secure together 1" from each end of splice.

E. Reinforce openings in ceiling suspension system, which interrupt main carrying channels or furring channels, with lateral channel bracing. Extend bracing minimum 24" past each end of openings.

F. Laterally brace entire suspension system where required.

3.02 INSTALLATION OF INTERIOR GYPSUM BOARD

A. Install gypsum board in accordance with recommendations of gypsum association GA–216.

B. For non–rated walls: Erect single layer standard gypsum board in direction most practical and economical, with ends and edges occurring over firm bearing.

C. For fire rated walls:
1. Erect single layer fire rated gypsum board vertically, with edges and ends occurring over firm bearing.
2. For double layer applications, erect first layer vertically, with edges and ends occurring over firm bearings. Place second layer perpendicular to first layer.
3. Items built into fire rated walls (i.e. fire extinguisher cabinets) shall be 'boxed in or enclosed with the same construction as the rated wan.

D. Treat cut edges and holes in moisture resistant gypsum board with sealant.

E. Corner beads: Place at outside corners. Use longest practical lengths. Place edge trim where gypsum board abuts dissimilar materials.

F. Tape, fill and sand joints, edges, corners, openings and fixings, to produce surface ready to receive surface finishes. Feather–coat onto adjacent surfaces so that camber is a maximum 1/16 inch.

END OF SECTION

09220 – PORTLAND CEMENT PLASTER (STUCCO)

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Metal furring and lathing.

B. Portland cement plaster system (stucco)

C. Smooth and special rendered surface finish.

1.02 RELATED SECTIONS

A. Unit Masonry: Section 04200

B. Rough Carpentry: Section 06100

C. Joint Sealants: Section 07901

D. Gypsum Drywall: Section 09200

E. Tile: Section 09300

1.03 REFERENCES

A. ASTM C150 – portland cement.

B. ASTM C206 – finishing hydrated lime.

C. ASTM C631 – bonding compounds for interior plastering.

D. ASTM C897 – aggregate for job–mixed portland cement based plasters.

E. PCA (Portland Cement Association) – plaster (stucco) manual.

1.04 SYSTEM DESCRIPTION

A. Fabricate vertical elements to limit finish surface to 1/180 deflection under lateral point load of 100 lbs.

B. Fabricate horizontal elements to limit finish surface to 1/240 deflection under superimposed dead load and wind uplift loads.

1.05 SUBMITTALS

A. Submit under provisions of Section 01300 Submittals.

B. Product data: provide data on plaster materials, characteristics and limitations of products specified.

C. Samples: submit two samples, 12 x 12 inch in size illustrating finish color and texture.

1.06 QUALITY ASSURANCE

1. Perform work in accordance with PCA Plaster (stucco) Manual.

1.07 QUALIFICATIONS

A. Applicator: company specializing in performing the work of this section with minimum three years experience and/or approved by manufacturer.

1.08 MOCKUP

A. Provide mockup of plaster system with accessories.

B. Construct mockup, 4 feet long by 4 feet wide, illustrating surface finish and color.

C. Locate where directed.

D. Mockup may remain as part of the work.

1.09 ENVIRONMENTAL REQUIREMENTS

A. Do not apply plaster when substrate or ambient air temperature is less than 50 degrees F or anticipated to drop below 40 degrees F within 48 hours after application, nor more than 80 degrees F.

B. Maintain minimum ambient temperature of 50 degrees F during installation of plaster and until cured.

PART 2 – PRODUCTS

2.01 MANUFACTURER

A. The drawings were prepared and this specification written on the basis of using the products of United States Gypsum Company, Chicago, Illinois. Such is intended to establish minimum quality standards, not to limit competitive bidding. Products with equal or superior characteristics, by other manufacturers, are acceptable under conditions of the specifications and approval by the architect.

2.02 PLASTER BASE MATERIALS

A. Cement: ASTM C150, Type 1 Portland cement.

B. Lime: special finishing hydrated lime, ASTM C–206–68, Type S.

C. Aggregate: natural or manufactured sand, ASTM–C–144 graded in accordance with ANSI spec. A42–2 for stucco.

D. Water: clean, fresh, potable and free of mineral or organic matter which can affect plaster.

E. Bonding agent: ASTM C631; type recommended by manufacturer for bonding plaster to concrete masonry surfaces.

2.03 PLASTER FINISH MATERIALS

A. Cement: as specified for plaster base coat, white color.

B. Lime: as specified for plaster base coat.

C. Color pigment: mineral oxide type, color as shown on the Drawings.

D. Water: clean, fresh, potable and free of mineral or organic matter which can affect plaster.

2.04 FURRING AND LATHING

A. Metal lath at walls ASTM C847; flat diamond self furring mesh, galvanized, 2.5 lb/yd. Of weight to suit application.

B. Metal lath at soffits ASTM C847; flat diamond non–furred and non–backed mesh, galvanized, 3.4 lb/yd.

C. Underlayment: asphalt saturated no. 30 felt, non–perforated.

D. Casing bead formed zinc; minimum 26 gage thick; depth governed by plaster thickness; maximum possible lengths; expanded metal flanges, with square edges.

E. Corner bead formed zinc; minimum 26 gage thick; depth governed by plaster thickness; maximum possible lengths; expanded metal flanges, with bullnosed edge.

F. Base screed formed zinc; minimum 26 gage thick; depth governed by plaster thickness; maximum possible lengths; expanded metal flanges, with beveled edge.

G. Corner mesh formed zinc minimum 26 gage thick; expanded flanges shaped to permit complete embedding in plaster; minimum 2 inches wide; galvanized finish.

H. Anchorage methods nails, staples, or other approved metal supports, of type and size to suit application, galvanized to rigidly secure lath and associated metal accessories in place.

2.05 CEMENT PLASTER MIXES

A. Proportion and mix cement plaster in accordance with PCA Plaster (stucco) Manual and ANSI A42–2–1971.

B. Finish coat: premix in accordance with manufacturer's instructions.

C. Mix only as much plaster as can be used prior to initial set.

D. Add color pigments to finish coat in accordance with manufacturer's instructions. Ensure uniformity of mix and coloration.

E. Mix materials dry, to uniform color and consistency, before adding water.

F. Add air entrainment admixtures to all coats to provide 5–7 percent entrainment.

G. Protect mixtures from freezing, frost, contamination, and evaporation.

H. Do not re–temper mixes after initial set has occurred.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify surfaces and site conditions are ready to receive work under this section.

B. Masonry: verify joints are cut flush and surface is ready to receive work of this section. Verify no bituminous or water repellent coatings exist on masonry surface.

3.02 PREPARATION

A. Dampen masonry surfaces to reduce excessive suction.

3.03 INSTALLATION – LATHING MATERIALS

A. Apply one ply of felt underlayment over substrate; weather lap edges 4 inches minimum. Fasten in place.

B. Apply metal lath taut, with long dimension perpendicular to supports.

C. Lap ends minimum 1 inch. Secure end laps with tie wire where they occur between supports.

D. Lap sides of diamond mesh lath a minimum 1–1/2 inches.

E. Attach metal lath to supports using fastening method recommended by manufacturer to suit back–up material.

F. All openings, plaster edges or where plaster edges terminate against dissimilar materials, provide plaster screeds. Use vented screed at perimeter.

3.04 INSTALLATION – ACCESSORIES

A. Continuously reinforce internal angles with corner mesh, return metal lath 3 inches from corner to form the angle reinforcement; fasten at perimeter edges only.

B. Place corner bead at external wall corners; fasten at outer edges of lath only.

C. Place strip mesh diagonally at corners of lathed openings. Secure rigidly in place.

D. Place 4 inch wide strips of metal lath centered over junctions of dissimilar backing materials. Secure rigidly in place.

E. Place casing beads at terminations of plaster finish. Butt and align ends. Secure rigidly in place.

3.05 PLASTERING

A. Apply Portland cement plaster (stucco) in a three–coat application over metal lath with thickness not less than 7/8" in locations as indicated on drawings. Scratch, brown and finish coat shall be applied as follows:

1. First (scratch) coat: shall be applied to metal reinforcement with sufficient material and pressure so that it is shoved through the metal reinforcement to completely embed the reinforcement.
   a

09250 – METAL SUPPORT ASSEMBLIES, PART 3 – EXECUTION *(CONTINUED)*

C. Fit runners under and above openings; secure intermediate studs at spacing of wall studs.

D. Install studs vertically at 16 inches (400mm) O.C.; unless indicated otherwise on drawings. Install felt strips between wall and stud where studs abut exterior walls.

E. Connect studs to tracks using fastener method.

F. Door opening framing: Install double studs at doorframe jambs. Install stud tracks on each side of opening, at frame head height, and between studs and adjacent studs.

E. Backing and blocking: Provide backing and blocking attached to studs. Bolt or screw steel channels to studs. Install backing and blocking for support of plumbing fixtures, toilet partitions, wall cabinets, toilet accessories, and hardware.

F. Coordinate installation of bucks, anchors, blocking, electrical and mechanical work placed in or behind partition framing.

G. Splice studs with 8 inch (200mm) nested lap, secure each stud flange with flush head screw.

H. Construct corners using minimum three studs.

I. Brace stud–framing system and make rigid.

J. Coordinate erection of studs with requirements of door and window frame supports and attachments.

K. Align stud web openings.

L. Refer to drawings for indication of partitions extending to ceiling only and for partitions extending through ceiling to structure above. Maintain clearance under structural building members to avoid deflection transfer to studs. Provide nested extended leg ceiling runners or proprietary slip track.

M. Coordinate placement of insulation in multiple stud spaces made inaccessible after stud framing erection.

3.03 WALL FURRING INSTALLATION

A. Erect wall furring for direct attachment to concrete, brick masonry and concrete walls.

B. Erect furring channels vertically. Secure in place to substrate on alternate channel flanges at maximum 24 inches (600mm).

C. Space furring channels maximum 16 inches (400mm) on centers.

D. Install furring channels directly attached to concrete and brick masonry and concrete walls, as applicable in accordance with manufacturer's instructions.

END OF SECTION

09300 – TILE

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes the following:

1. Wall tile.
2. Floor tile.

1.02 SUBMITTALS

A. General: submit the following in accordance with conditions of contract and Division 1 specification sections.

B. Product data for each type of product specified.

C. Shop drawings indicating tile patterns and locations and widths of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
1. Locate precisely each joint and crack in tile substrates by measuring, record measurements on shop drawings, and coordinate them with tile joint locations.

D. Samples for initial selection purposes in form of manufacturer's color chart consisting of actual tiles or sections of tile showing full range of colors, textures, and patterns available for each type and composition of tile indicated. Include samples of grout and accessories involving color selection.

E. Samples for verification purposes of each item listed below, prepared on samples of size and construction indicated, products involve color and texture variations, in sets showing full range of variations expected.
1. Each type and composition of tile and for each color and texture required, at least 12 inches square, mounted on plywood or hardboard backing and grouted.
2. Full size units of each type of trim and accessory for each color required.

F. Master grade certificates for each shipment, type, and composition of tile, signed by tile manufacturer and installer.

G. Qualification data for firms and persons specified in "Quality Assurance" article to demonstrate their capabilities and experience. Include list of completed projects with project names, addresses, names of Architects and Owners, plus other information specified.

1.03 QUALITY ASSURANCE

A. Single source responsibility for tile: obtain each color, grade, finish, type, composition, and variety of tile from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the work.

B. Single source responsibility for setting and grouting materials: obtain ingredients of a uniform quality from one manufacturer for each cementitious and admixture component and from one source or producer for each aggregate.

C. Installer qualifications: engage an experienced installer who has successfully completed tile installations similar in material, design, and extent to that indicated for project.

D. Provide master grade certificate for all materials used.

1.04 PROJECT CONDITIONS

A. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.

B. Vent temporary heaters to exterior to prevent damage to tile work from carbon dioxide buildup.

C. Maintain temperatures at 50 deg F (10 deg C.) or more in tiled areas during installation and for 7 days after completion.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Tile: as listed on Drawings.

B. Mortar bed: thinset bond coat, dry–set cementitious mortar, ANSI A118.1.

C. Sill sealer: latex Portland cement mortar; ANSI A118.4, composition as follows:

1. Latex additive (water emulsion) of type described below, serving as replacement for part or all of gauging water, combined at job site with prepackaged dry mortar mix supplied or specified by latex additive manufacturer.
2. Latex type: manufacturer's standard.

D. Control joint membrane: use Mapei plasti/lastic crack isolation membrane over all control joints and other floor slab gaps over 1/16".

2.02 PRODUCTS, GENERAL

09300 – TILE, PART 2 – PRODUCTS

A. ANSI standard for ceramic tile: comply with ANSI A137.1 "American National Standard Specifications for Ceramic Tile" for types, compositions, and grades of tile indicated.

B. ANSI standard for tile installation materials: comply with ANSI standard referenced with products and materials indicated for setting and grouting.

1. Mounting: where factory mounted tile is required, provide back or edge–mounted tile assemblies as standard with manufacturer unless another mounting method is indicated.

2.03 TILE PRODUCTS

A. Wall tile: provide flat tile complying with the following requirements:

1. Nominal facial dimensions: as indicated on the drawings.
2. Nominal thickness as indicated on the drawings.
3. Face as indicated on the drawings.

B. Trim units: provide tile trim units to match characteristics of adjoining flat tile and to comply with following requirements:

1. Size: as indicated, coordinated with sizes and coursing of adjoining flat tile where applicable.
2. Shapes: as follows, selected from manufacturer's standard shapes:
   a. Base for thinset mortar installations: cove base with bullnose
   b. External corners for thinset installations: surface bullnose.
   c. Internal corners: field–butted square corners, except use covered base and cap angle pieces designed to member with stretcher shapes.

PART 3 – EXECUTION

3.01 MIXING MORTARS AND GROUT

A. Mix mortars and grouts to comply with requirements of referenced standards and manufacturers including those for accurate proportioning of materials, water, or additive content; type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other procedures needed to produce mortars and grouts of uniform quality with optimum performance characteristics for application indicated.

3.02 EXAMINATION

A. Examine substrates and areas where the will be installed, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.

B. Verify that substrates for setting tile are firm, dry, clean, and free from oil or waxy films and curing compounds.

C. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed before installing tile.

D. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.03 PREPARATION

A. Blending: for tile exhibiting color variations within the ranges selected during sample submittals, verify that tile has been blended in factory and packaged accordingly so tile units taken from one package show the same range in colors as those taken from other packages and match approved samples. If not factory blended, either return to manufacturer or blend tiles at project site before installing.

3.04 INSTALLATION, GENERAL

A. ANSI tile installation standard: comply with parts of ANSI 108 series of tile installation standards included under "American national standard specifications for the installation of ceramic tile" that apply to type of setting and grouting materials and methods indicated.

B. TCA installation guidelines: TCA "handbook for ceramic tile installation"; comply with TCA installation methods indicated.

C. Extend tile work into recesses and under or behind equipment and fixtures to form a complete covering without interruptions except as otherwise shown. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

D. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built–in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

E. Jointing pattern: unless otherwise shown, lay tile in grid pattern. Align joints when adjoining tiles on floor, base, walls, and trim are same size. Lay out tile work and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths unless otherwise shown.

1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so extent of each sheet is not apparent in finished work.

F. Lay out tile wainscots to next full tile beyond dimensions indicated.

G. Expansion joints: locate expansion joints and other sealant–filled joints, including control, contraction, and isolation joints, where indicated during installation of setting materials, mortar beds, and tile. Do not saw cut joints after installation of tiles.

1. Locate joints in tile surfaces directly above joints in concrete substrates.

H. Grout tile to comply with the requirements of the following installation standards:

1. For ceramic tile grouts (sanded Portland cement, dry–set, commercial Portland cement, and latex Portland cement grouts), comply with ANSI A108.10.
2. For chemical resistant epoxy grouts, comply with ANSI A108.6.

3.05 WATERPROOFING FOR THINSET TILE INSTALLATIONS

A. Install waterproofing in compliance with waterproofing manufacturer's instructions to produce a waterproof membrane of uniform thickness bonded securely to substrate.

B. Do not install tile over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

3.06 WALL TILE INSTALLATION METHODS

A. Install types of tile designated for wall application to comply with requirements indicated below for setting bed methods, TCA installation methods related to subsurface wall conditions, and grout types:

1. Organic adhesive: ANSI A108.4.
   a. Gypsum board, interior: TCA W242.
   b. Grout: latex Portland cement.

3.07 CLEANING AND PROTECTION

A. Cleaning: upon completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.

1. Remove latex Portland cement grout residue from tile as soon as possible.
2. Unglazed tile may be cleaned with acid solutions only when permitted by tile and grout manufacturer's printed instructions, but no sooner than 14 days after installation. Protect metal surfaces, cast iron, and vitreous plumbing fixtures from effects of acid cleaning. Flush surface with clean water before and after cleaning.

B. Finished tile work: leave finished installation clean and free of cracked, chipped, broken, unbonded, and otherwise defective tile work.

C. Provide final protection and maintain conditions in a manner acceptable to manufacturer and installer that ensures that tile is without damage or deterioration at time of substantial completion.

1. When recommended by tile manufacturer, apply a protective coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with Kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.
2. Prohibit foot and wheel traffic from tiled floors for at least 7 days after grouting is completed.

D. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

END OF SECTION

09511 – ACOUSTICAL PANEL CEILINGS

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes acoustical panel ceilings installed with exposed suspension systems.

1.02 QUALITY ASSURANCE

A. Installer qualifications: engage an experienced installer who has successfully completed acoustical ceilings similar in material, design, and extent to those indicated for project.

B. Single source responsibility for ceiling units: obtain each type of acoustical ceiling unit from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the work.

C. Single source responsibility for suspension system: obtain each type of suspension system from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the work.
1. Obtain suspension system from same manufacturer that produces acoustical ceiling units.

D. Coordination of work: coordinate layout and installation of acoustical ceiling units and suspension system components with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire–suppression system components (if any), and partition system (if any).

1.03 PROJECT CONDITIONS

A. Space enclosure: do not install interior acoustical ceilings until space is enclosed and weatherproof, wet–work in space is completed and nominally dry, work above ceilings is complete, and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

1.04 EXTRA MATERIALS

B. Deliver extra materials to Owner. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with appropriate labels.

1. Acoustical ceiling units: furnish quantity of full–size units equal to 2.0 percent of amount installed.
2. Exposed suspension system components: furnish quantity of each exposed component equal to 2.0 percent of amount installed.

PART 2 – PRODUCTS

2.01 ACOUSTICAL CEILING UNIT

A. Standard for acoustical ceiling units: as scheduled on drawings. Ceiling tile installed in food preparation areas shall be non–water–absorbent and washable.

2.02 METAL SUSPENSION SYSTEMS, GENERAL

A. Standard for metal suspension systems: provide manufacturer's standard metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable ASTM C 635 requirements.

B. Finishes and colors: provide manufacturer's standard factory–applied finish for type of system indicated.

1. High humidity finish: comply with ASTM C 635 requirements for "Coating Classification for Severe Environment Performance" where high humidity finishes are indicated.

C. Attachment devices: size for 5 times the design load indicated in ASTM C 635, Table 1, direct hung unless otherwise indicated.

D. Wire for hangers and ties: ASTM A 641, class 1 zinc coating, soft temper.

1. Gage: provide wire sized so stress at 3 times hanger design load (ASTM C 635, Table 1, direct–hung), will be less than yield stress of wire, but provide not less than 0.106–inch diameter (12 gage).

E. Edge moldings and trim: metal or extruded aluminum of types and profiles indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that fit type of edge detail and suspension system indicated.

1. For lay–in panels with reveal edge details, provide stepped edge molding that forms reveal of same depth and width as that formed between edge of panel and flange at exposed suspension member.
2. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.
3. For narrow faced suspension systems, provide suspension system manufacturer's standard edge moldings that match width and configuration of exposed runners.

2.03 MISCELLANEOUS MATERIALS

A. Concealed acoustical sealant: nondrying, nonhardening, nonskinning, nonstaining, nonbleeding, gunnable sealant complying with requirement specified in Division 7 Section "Joint Sealers."

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine substrates and structural framing to which ceiling system attaches or abuts, with installer present, for compliance with requirements specified in this and other sections that affect installation and anchorage of ceiling system. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Coordination: furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.

B. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders, and comply with reflected ceiling plans.

3.03 INSTALLATION

A. General: install acoustical ceiling systems to comply with installation standard referenced below, per manufacturer's instructions and CISCA "Ceiling Systems Handbook."

1. Standard for installation of ceiling suspension systems: comply with ASTM C 636.

B. Arrange acoustical units and orient directionally patterned units in a manner shown by reflected ceiling plans.

C. Suspend ceiling hangers from building structural members and as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, counterspaying, or other equally effective means.
2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with the location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
3. Secure wire hangers by looping and wire–tying, either directly to structures or to inserts, eyescrews, or other devices that are secure and appropriate for substrate, and in a manner that will not cause them to deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
4. Do not attach hangers to steel deck tabs.
5. Space hangers not more than 4'–0" along each member supported directly from hangers, unless otherwise shown, and provide hangers not more than 8 inches from ends of each member.

D. Install edge moldings of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical units.

1. Sealant bed: apply continuous ribbon of acoustical sealant, concealed on back of vertical leg before installing moldings.
2. Screw–attach moldings to substrate at intervals not over 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to tolerance of 1/8 inch in 12'–0". Miter corners accurately and connect securely.

E. Install acoustical panels in coordination with suspension system, with edges concealed by support of suspension members. Scribe and cut panels to fit accurately at borders and at penetrations.

3.04 CLEANING

A. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch–up of minor finish damage. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION

09540 – FIBER REINFORCED PANELS (FRP)

PART 1 – GENERAL

1.01 SUMMARY

A. Section includes application of fiber reinforced plastic (FRP) wall panels, including trim moldings. Extent of FRP wall panels is shown on drawings.

1.02 QUALITY ASSURANCE

A. Fire performance characteristics: provide FRP wall panels, with surface burning characteristics as indicated below, which have been determined by testing assemblies of identical materials and construction according to ASTM E 84 by a testing organization acceptable to authorities having jurisdiction.

1. Flame spread: 25 or less.
2. Smoke developed: 450 or less.

1.03 PROJECT CONDITIONS

A. Do not begin installation until spaces to receive FRP wall panels have been enclosed and maintained at approximately the same humidity and temperature conditions as planned for occupancy. Maintain temperature and humidity as recommended by panel manufacturer.

PART 2 – PRODUCTS

2.01 FRP WALL PANELS, GENERAL

B. FRP panels: provide the manufacturer's standard size USDA approved, mold and mildew resistant panels; fabricated from fiberglass reinforced plastic, minimum thickness required for UL Class 3 fire–resistance rating, with embossed surface and integral color.

1. Manufacturer:
   a. See drawings
   b. Or approved equal

B. Accessories: provide the manufacturer's standard color matched high impact resistant PVC moldings to match panels.

C. Adhesives: provide manufacturer's recommended adhesive, primer, and sealer, produced expressly for use with FRP panels on substrate as shown on drawings. Provide materials which are mildew–resistant and nonstaining.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Install FRP wall panels in locations indicated with vertical surfaces and edges plumb, top edges level, and in alignment with other panels, scribed to fit adjoining work accurately at borders and at penetrations. Comply with panel manufacturer's printed instructions for installation of panels using type of mounting accessories as recommended by manufacturer.
1. Cut units to be at least 50 percent of unit width. Butt joints tightly.

B. Anchor paneling to supporting substrate with adhesive; install splined–connection strips and similar associated trim to comply with manufacturer's recommendations. Do not face nail unless otherwise indicated.

C. Remove and replace panels which are damaged and are unacceptable to Architect.

END OF SECTION

09650 – RESILIENT FLOORING

PART 1 – GENERAL

1.01 DESCRIPTION

A. This section includes inspection and surface preparation of substrate and installation of resilient floor finish materials.

1.02 SUBMITTALS

A. Submit manufacturer's product data, installation instructions, and maintenance instructions.

B. Submit three 6"x6" samples to Architect or Construction Project manager for color, pattern, and texture confirmation.

1.03 PROJECT/SITE CONDITIONS

A. Store delivered materials in a dry conditioned (minimum 70 F degree) space for a minimum of 48 hours prior to installation. Verify concrete floor slabs are cured and dry, via moisture testing, per manufacturer's directions

PART 2 – PRODUCTS

2.01 FLOORING MATERIAL

A. Provide flooring material by the manufacturer, in the color, pattern, texture, and sizes as indicated on drawings.

PART 3 – EXECUTION

3.01 EXAMINATION AND PREPARATION OF SUBSTRATE

A. Inspect areas where tile is to be installed. Concrete is to be dry and free of cracks, ridges, paint, curing compounds, drywall compound, dirt, and other foreign deposits whose presence would interfere with installation of flooring.

B. Repair cracks, holes, and depressions with approved trowelable leveling compounds as required.

C. Test concrete substrate for moisture and bond adhesion where required per manufacturer's instructions.

D. Vacuum clean all substrates to be covered with tile immediately before tile installation.

E. Apply slab primer if recommended by flooring manufacturer, prior to applying adhesive.

3.02 INSTALLATION

A. Install tile per manufacturer's instructions. Install tile parallel with axis of room unless otherwise indicated.

B. Install square directional tile using "Quarter Turn" method where each tile is rotated 90 degrees from its adjoining tile, unless otherwise indicated.

C. Adhere tiles to substrate without producing gaps, bumps, telegraphing of substrate, or other visible irregularities in the finished work.

D. Barricade tiled area from foot traffic for duration recommended by manufacturer.

3.03 CLEANING AND PROTECTING

A. Remove visible adhesive and other surface blemishes. Do not wash floor until after interval recommended by manufacturer.

B. Protect flooring against damage from subsequent construction foot traffic.

END OF SECTION

09900 – PAINTING

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes surface preparation, painting, and finishing of exposed interior and exterior items and surfaces.

1. Surface preparation, priming, and finish coats specified in this section are in addition to shop priming and surface treatment specified under other sections.

B. Paint exposed surfaces whether or not colors are designated in the drawings, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Architect will select from standard colors or finishes available.

1. Painting includes field painting exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron work, and primed metal surfaces of mechanical and electrical equipment.

C. Painting is not allowed on prefinished items, finished metal surfaces, concealed surfaces, operating parts, and labels.

D. "Paint" includes coating systems materials, primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate, or finish coats.

1.02 QUALITY ASSURANCE

A. Single source responsibility: provide primers and undercoat paint produced by the same manufacturer as the finish coats.

B. Coordination of work: review other sections in which primers are provided to ensure compatibility of the total systems for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
1. Notify the Architect of problems anticipated using the materials specified.

C. Field samples: on wall surfaces and other exterior and interior components, duplicate finishes of prepared samples. Provide full coat finish samples on at least 100 sq. ft. of surface until required sheen, color and texture are obtained; simulate finished lighting conditions for review of in–place work.

1. Final acceptance of colors will be from job–applied samples.

D. Material quality: provide the manufacturer's best quality trade sale paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable

1.03 PROJECT CONDITIONS

A. Apply water–based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 deg F (10 deg C) and 90 deg F (32 deg C).

B. Apply solvent thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 deg F (7 deg C) and 95 deg F (35 deg C).

C. Do not apply paint in rain, fog, or mist, when the relative humidity exceeds 85 percent, at temperatures less than 5 deg F (3 deg C) above the dew point, or to damp or wet surfaces.
1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and "conditioned" within temperature limits specified by the manufacturer during application and drying periods.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Paint manufacturer: See drawings

B. Stain manufacturer: See drawings

2.02 PRIMERS

A. Masonry: Alkyd masonry sealer from manufacturer shown on drawings

B. Wood: Alkyd enamel underbody from manufacturer shown on drawings

C. Plaster/drywall: Provide from manufacturer shown on drawings

D. Alkyd–type zinc chromate primer: primers used for priming ferrous metals on the exterior under high–gloss alkyd enamel.

1. Zinc chromate primer

E. Galvanized metal primer: primer used to prime interior and exterior zinc–coated (galvanized) metal surfaces:

1. Galvanized metal latex primer.

2.03 MISCELLANEOUS MATERIALS

A. Paste wood filler: solvent–based, air–drying, paste–type wood filler for use on open–grain wood on interior wood surfaces:

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine substrates and conditions under which painting will be performed for compliance with requirements for application of paint. Do not begin paint application until unsatisfactory conditions have been corrected. Start of painting will be construed as the applicator's acceptance of surfaces and conditions within a particular area.

3.02 PREPARATION

A. General procedures: remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items in place that are not to be painted, or provide surface applied protection prior to surface preparation and painting. Remove these items if necessary for complete painting of the items and adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.

1. Clean surfaces before applying paint or surface treatments. Remove oil and grease prior to cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, new painted surfaces.

B. Surface preparation: clean and prepare surfaces to be painted in accordance with the manufacturer's instructions for each particular substrate condition and as specified.

1. Provide barrier coats over incompatible primers or remove and re–prime. Notify Architect in writing of problems anticipated with using the specified finish–coat material with substrates primed by others.
2. Cementitious materials: prepare concrete, concrete masonry block, and cement plaster surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
   a. Use abrasive blast cleaning methods if recommended by the paint manufacturer.
   b. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's printed directions.
   c. Clean concrete floors to be painted with a 5 percent solution of muriatic acid or other etching cleaner. Flush the floor with clean water to remove acid, neutralize with ammonia, and rinse; allow to dry and vacuum before painting.

C. Wood: clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.

1. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer before application of primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
2. Prime, stain, or seal wood to be painted immediately upon delivery. Prime edges, ends, faces, undersides, and backsides of wood, including cabinets, counters, cases, and paneling.
3. When transparent finish is required, backprime with spar varnish.
4. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on backside.
5. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately upon delivery.

D. Ferrous metals: clean nongalvanized ferrous metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with recommendations of the Steel Structures Painting Council.

1. Blast steel surfaces clean as recommended by the paint system manufacturer and in accordance with requirements of SSPC specification SSPC_SP 10.
2. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
3. Touch up bare areas and shop–applied prime coats that have been damaged. Wire brush, clean with solvents recommended by the paint manufacturer, and touch up with the same primer as the shop coat.

E. Galvanized surfaces: clean galvanized surfaces with non–petroleum based solvents so that the surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

F. Materials preparation: carefully mix and prepare paint materials in accordance with manufacturer's directions.

1. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density, stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.
3. Use only thinners approved by the paint manufacturer, and only within recommended limits.

G. Tinting: tint each undercoat a lighter shade to facilitate identification of each coat where multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.03 APPLICATION

A. Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

A. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
1. Provide finish coats that are compatible with primers used.
2. The number of coats and film thickness required is the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce an even smooth surface in accordance with the manufacturer's directions.
3. Apply additional coats when undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.
4. The term "exposed surfaces" includes areas visible when permanent or built–in fixtures, connector covers, covers for finned tube radiation, grilles, and similar components are in place. Extend coatings in these areas as required to maintain the system integrity and provide desired protection.
5. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only before final installation of equipment.
6. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, nonspecular black paint.
7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
8. Finish interior of wall and base cabinets and similar field–finished casework to match exterior.
9. Finish exterior doors on tops, bottoms, and side edges same as exterior faces.
10. Sand lightly between each succeeding enamel or varnish coat.
11. Omit primer on metal surfaces that have been shop–primed and touch up painted.

B. Scheduling painting: apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure and where application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

D. Minimum coating thickness: apply materials at not less than the manufacturer's recommended spreading rate. Provide a total dry film thickness of the entire system as recommended by the manufacturer.

E. Mechanical and electrical work: painting mechanical and electrical work is limited to items exposed in mechanical equipment rooms and in occupied spaces.

F. Prime coats: before application of finish coats, apply a prime coat of material as recommended by the manufacturer to material that is required to be painted or finished and has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to assure a finish coat with no burn through or other defects due to insufficient sealing.

G. Stipple enamel finish: roll and redistribute paint to an even and fine texture. Leave no evidence of rolling such as laps, irregularity in texture, skid marks, or other surface imperfections.

H. Pigmented (opaque) finishes: completely cover to provide an opaque, smooth surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

I. Transparent (clear) finishes: use multiple coats to produce a glass smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.

1. Provide satin finish for final coats.

J. Completed work: match approved samples for color, Texture, and coverage. Remove, refinish, or repaint work not in compliance with specified requirements.

3.04 FIELD QUALITY CONTROL

A. The Owner reserves the right to invoke the following test procedure at any time and as often as the Owner deems necessary during the period when paint is being applied:

B. The Owner will engage the services of an independent testing laboratory to sample the paint material being used. Samples of material delivered to the project will be taken, identified, sealed, and certified in the presence of the Contractor.

C. The testing laboratory will perform appropriate tests for the following characteristics as required by the Owner:

1. Quantitative materials analysis.
2. Abrasion resistance.
3. Apparent reflectivity.
4. Flexibility.
5. Washability.
6. Absorption.
7. Accelerated weathering.
8. Dry opacity.
9. Accelerated yellowness.
10. Recoating.
11. Shining
12. Color retention.
13. Alkali and mildew resistance.

D. If test results show material being used does not comply with specified requirements, the Contractor may be directed to stop painting, remove noncomplying paint, pay for testing, repaint surfaces coated with rejected paint, and remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the two coatings are noncompatible.

3.05 CLEANING

A. Cleanup: at the end of each work day, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

B. Upon completion of painting, clean glass and paint–spattered surfaces. Remove spattered paint by washing and scraping, using care not to scratch or damage adjacent finished surfaces.

3.06 PROTECTION

A. Protect work of other trades, whether to be painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

B. Provide "wet paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations.

1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.07 SCHEDULED PAINTING

A. Provide painting as scheduled in architectural drawings.

END OF SECTION

10800 – TOILET ACCESSORIES

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes toilet accessory items scheduled and indicated on the drawings.

1.02 PROJECT CONDITIONS

A. Coordination: Coordinate accessory locations, installation and sequencing with other work to avoid interference and to assure proper installation, operation, adjustment, cleaning and servicing of toilet accessory items.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Manufacturers: subject to compliance with requirements, toilet accessories are as scheduled and detailed on the Drawings.

2.02 FABRICATION

A. Surface mounted toilet accessories, general: except where otherwise indicated, fabricate units with tight seams and joints, exposed edges rolled. Hang doors or access panels with continuous stainless steel piano hinge. Provide concealed anchorage wherever possible.

B. Recessed toilet accessories, general: except where otherwise indicated, fabricate units of all welded construction, without mitered corners. Hang doors or access panels with full–length stainless steel piano hinge. Provide anchorage that is fully concealed when unit is closed.

C. Framed mirror units, general: fabricate frames for glass mirror units to accommodate wood, felt, plastic, or other glass edge protection material. Provide mirror backing and support system that will permit rigid, tamper proof glass installation and prevent accumulation of moisture, as follows:

1. Provide galvanized steel backing sheet, not less than 22 gauge (.034 inch) and full mirror size, with non–absorptive filler material. Corrugated cardboard is not an acceptable filler material.

D. Mirror unit hangers: provide system of mounting mirror units that will Pin it rigid, tamper–proof, and theft proof installation, as follows:

1. One–piece galvanized steel wall hanger device with spring action locking mechanism to hold mirror unit in position with no exposed screws or bolts.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Install toilet accessory units in accordance with manufacturers' instructions, using fasteners appropriate to substrate and recommended by manufacturer of unit. Install units plumb and level, firmly anchored in locations and at heights indicated.

B. Secure mirrors to walls in concealed, tamper–proof manner with special hangers, toggle bolts, or screws. Set units plumb, level, and square at locations indicated, in accordance with manufacturer's instructions for type of substrate involved.

C. Provide backing plates and anchors for grab bars as required by wall construction, to withstand a downward load of at least 250 LBF, complying with ASTM F 446.

3.02 ADJUSTING AND CLEANING

A. Adjust toilet accessories for proper operation and verify that mechanisms function smoothly. Replace damaged or defective items.

B. Clean and polish all exposed surfaces in strict accordance with manufacturer's recommendations after removing temporary labels and protective coating.

3.03 SCHEDULE OF ACCESSORIES

A. Toilet tissue dispenser: Contractor furnished and installed.

B. Soap dispenser: Contractor furnished and installed.

C. Recessed paper towel dispenser and waste receptacle: Contractor furnished and installed.

D. Baby changer: Contractor furnished and installed.

END OF SECTION

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
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SEAL:

10697 REGISTERED ARCHITECT DANIEL B GOALWIN STATE OF WASHINGTON

EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

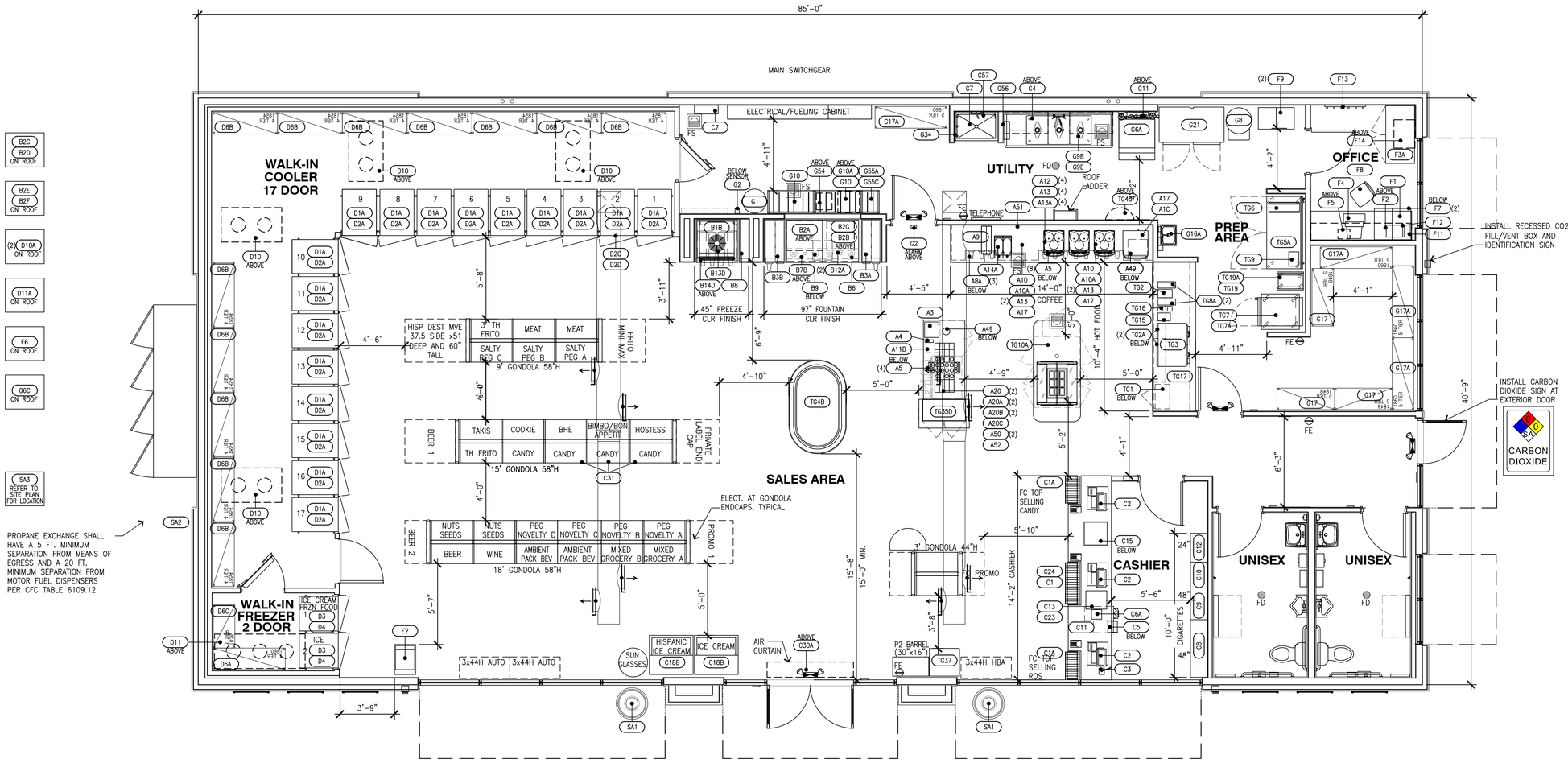
DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: -	PROJECT NO: 21730

DRAWING TITLE:

ARCHITECTURAL SPECIFICATIONS

SHEET NO:

A7.6



01 — **EQUIPMENT FLOOR PLAN**
SCALE: 1/4"=1'-0"

CLIENT:

bp

ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
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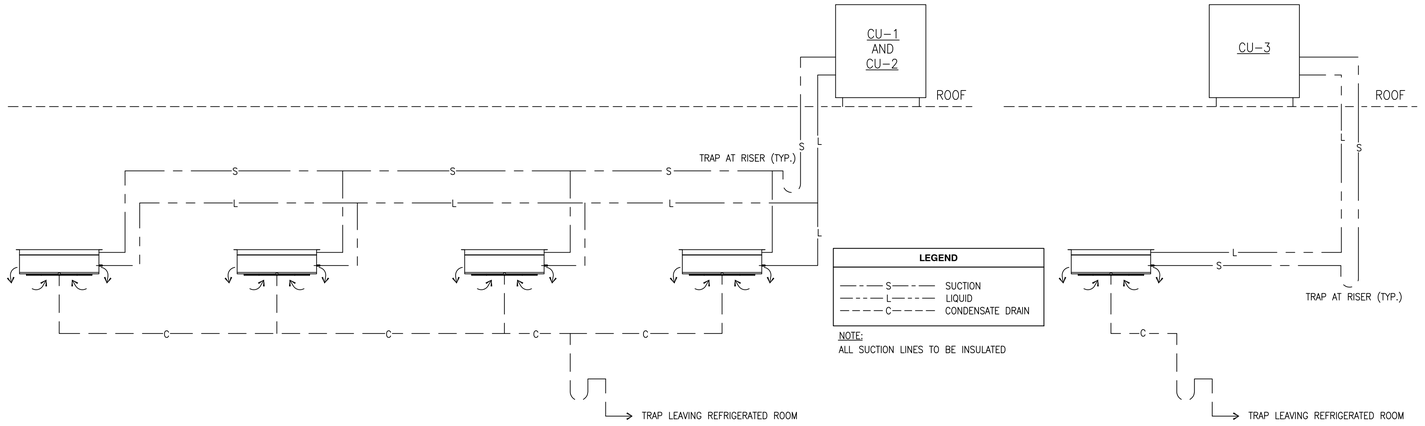
SITE ADDRESS:
1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	ALLIANCE ZADM:
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DRAWN BY:	ALLIANCE PM:
VERSION: -	PROJECT NO: 21730

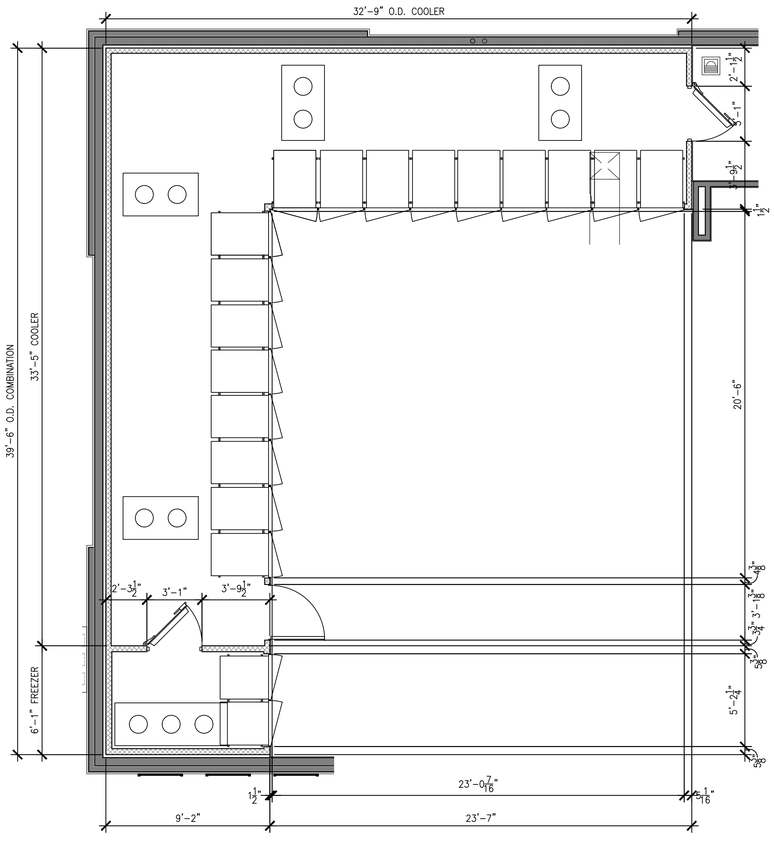
DRAWING TITLE:
EQUIPMENT FLOOR PLAN

SHEET NO:
Q1.1



01 EVAPORATION PIPING SYSTEM

SCALE: N/A



02 COOLER DIMENSION PLAN

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

EVAPORATOR COILS

		BOX LOAD REQUIREMENTS	QTY.	HEATCRAFT MODEL #	FANS		REFG. TYPE R	REFG. CHG. LBS.	CAPACITY B.T.U.'S 1 HR. EACH	POWER SUPPLY	BOX TEMP. °F	DEFROST HEATER	FAN MOTOR
					QTY. EACH	CFM						MCA	MCA
CU-1 CU-2	COOLER	42,737 BTU/H	4	LEC0130A57AMAB0200	2	1,300	448A/ 449A	--	11,000	115/1/60	+35	--	1.8
CU-3	REACH-IN FREEZER	6,623 BTU/H	1	LEC0120BS56EMAB0200	2	1,300	448A/ 449A	--	7,448	208/230/1/60	-10	--	1

CONDENSING UNITS

		BOX LOAD REQUIREMENTS	QTY.	HEATCRAFT MODEL #	SUCTION TEMP.	REFG. TYPE R	REFG. CHG. LBS.	CAPACITY B.T.U.'S 1 HR. EACH	POWER SUPPLY	DEFROST TIMER	MIN. CCT. AMP.	MAX. FUSE SIZE
CU-1 CU-2	COOLER	42,737 BTU/H	2	MOZ030M63C	+23°	448A/449A	--	24,752 @95° AMB.	208/230/3/60	AIR	--	--
CU-3	REACH-IN FREEZER	6,623 BTU/H	1	MOZ025L63C	-22°	448A/449A	--	7,597 @95° AMB.	208/230/3/60	AIR	--	--

CODES AND STANDARDS

NSF STANDARDS: COMPLY WITH APPLICABLE NATIONAL SANITATION FOUNDATION (NSF) STANDARDS AND RECOMMENDED CRITERIA. PROVIDE EACH PRINCIPAL ITEM OF FOOD SERVICE EQUIPMENT WITH A NSF "SEAL OF APPROVAL"

UL LABEL: WHERE AVAILABLE, PROVIDE UL LABELS ON PRIME ELECTRICAL COMPONENTS OF FOOD SERVICE EQUIPMENT. PROVIDE UL "RECOGNIZED MARKING" ON OTHER ITEMS WITH ELECTRICAL COMPONENTS SIGNIFYING LISTING BY UL, WHERE AVAILABLE.

HEALTH CODE: INSTALL FOOD SERVICE EQUIPMENT IN ACCORDANCE WITH LOCAL HEALTH DEPARTMENT APPLICABLE REGULATIONS.

1. SHOP DRAWINGS UPON APPROVAL OF BID, SUBMIT 3 SETS OF COMPLETE DETAILS, MECHANICAL AND ELECTRICAL REQUIREMENTS, AND INSTALLATION INSTRUCTIONS OF EACH ITEM. INCLUDE INFORMATION ON ROUGHING IN DIMENSIONS, SERVICE CONNECTION REQUIREMENTS, OPENINGS, DISPLAY AND LATCH DOOR MANUFACTURER'S INFORMATION, COMPLETE FLOOR PLANS AND EQUIPMENT SPECIFICATIONS.
2. TAKE FIELD MEASUREMENTS TO ASSURE ACCURATE FIT OF FABRICATED EQUIPMENT.
3. INCLUDE WARRANTY INFORMATION ON ALL EQUIPMENT.

COOLER/FREEZER ALARMS

COOLER/FREEZER ALARMS AS MANUFACTURED BY:

NATIONAL CONTROLS CORPORATION
1725 WESTERN DRIVE
WEST CHICAGO, IL. 60185
(800) 323-2593

PROVIDE THE FOLLOWING:
(1) DUAL KIT #TNC-TM100-KT2A
KIT INCLUDES:
- (2) THERMOMETER UNITS
- (2) TEMPERATURE PROBES WITH 6'-0" WIRE
- (1) TRANSFORMER
- (1) STAINLESS STEEL TWIN ENCLOSURE

ADDITIONAL PROBE WIRE #X02-22GNG-820

INSTALLATION:

- INSTALL THERMOMETER UNITS IN CASHIER AREA.
- INSTALL TEMPERATURE PROBE IN EACH RESPECTIVE COOLER/FREEZER COMPARTMENT. SPLICE THE 6'-0" PROBE WIRE WITH ADDITIONAL PROBE WIRE AS REQUIRED TO RETURN TO CASHIER AREA.
- COMPLETELY SEAL ANY AND ALL INTRUSIONS TO COOLER/FREEZER COMPARTMENTS.
- LABEL ALL THERMOMETER UNITS PER RESPECTIVE COOLER/FREEZER COMPARTMENTS.
- SET ALARM TEMPERATURE AS FOLLOWS:
  - WALK-IN COOLER: +35° F.
  - WALK-IN FREEZER: 0° F.
- LOCATE TEMP. PROBES A MIN 2'-0" FROM WALL AND 5'-0" FROM DOOR.

WALK-IN COOLER NOTES

1.0 GENERAL NOTES:

1.1 WALK-IN COOLER SHALL BE PREFABRICATED METAL CLAD PANELS BY CUSTOM COOLERS INC. OR EQUAL. DESIGNED IN MODULAR CONCEPT TO FACILITATE ACCURATE JOB SITE ASSEMBLY.

2.0 PANEL CONSTRUCTION:

2.1 ALL PANELS SHALL BE FOAMED-IN-PLACE CLASS 1, POLYURETHANE CONSTRUCTION WITH 3 1/2" COMPOSITE PANEL. THE "R" VALUE TO BE 30 WITH A DENSITY OF 2.2 POUNDS PER CUBIC FOOT.

2.2 THE PERIMETER OF ALL PANELS SHALL BE BUTT JOINT

2.3 PANELS TO BE JOINED TOGETHER BY ENGAGING A CAM-ACTION LOCKING DEVICE. THE CAM ACTION DEVICE WILL DRAW THE SECTIONS TOGETHER TO FORM A TIGHT SEAL.

2.4 STANDARD PANEL FINISH SHALL BE 26 GAUGE STUCCO EMBOSSED GALVANIZED STEEL SKIN EXTERIOR WITH WHITE INTERIOR.

2.5 PROVIDE 7-1/2" DOOR SILL HEIGHTS FOR GLASS DISPLAY DOORS.

2.6 INSULATION IS CLASS 1, POLYURETHANE FOAM WITH A FLAME SPREAD LESS THAN 25 AND A SMOKE DEVELOPMENT OF LESS THAN 450.

2.7 CERTIFICATIONS: UL AND NSF APPROVED

2.8 MEASUREMENTS AND CONFIGURATIONS REFER TO THIS SHEET.

3.0 COOLER WALK-IN DOOR
MANUFACTURED BY CUSTOM COOLERS, INC. OR EQUAL.

3.1 36" x 82" CUSTOM *ANTHONY 103NT (HEAVY DUTY) ALL GLASS PASS-THRU DOOR, SLIMLINE BLACK HANDLE, PRO LEDs, NO THRESHOLD, CYLINDER DOOR LOCK, ALL BLACK FINISH DOOR & FRAME, STAINLESS STEEL INTERIOR/EXTERIOR 10" KICKPLATES.

3.2 LOCATION AND SWING AS SHOWN ON THIS SHEET.

3.3 FREEZER WALK-IN DOOR
MANUFACTURED BY CUSTOM COOLERS, INC. OR EQUAL.

3.4 DOOR SHALL BE NOMINAL 3 1/2" FOAMED-IN-PLACE CLASS 1, POLYURETHANE CONSTRUCTION.

3.5 DOOR TO BE HINGED, IN-FIT, AND HAVE 36" HIGH DIAMOND PLATE KICK PLATES FOR INTERIOR AND EXTERIOR.

3.6 HINGES SHALL BE CAM-RISE WITH BRIGHT SILVER ANODIZED FINISH ON FRAME AND DOOR TRIM, TWO HINGES PER DOOR.

3.7 LATCH AND STRIKE TO HAVE A SATIN SURFACE CHROME FINISH WITH PROVISION FOR PADLOCK. LATCH TO HAVE INSIDE SAFETY RELEASE TO PREVENT ENTRAPMENT.

3.8 DOOR TO HAVE REPLACEABLE GASKETS FOR A POSITIVE SEAL AND AN ADJUSTABLE VINYL WIPER GASKET FOR SEAL AT DOOR FRAME THRESHOLD.

3.9 A FLUSH MOUNTED 2" DIAL THERMOMETER OF CORRECT TEMPERATURE RANGE SHALL BE PROVIDED AT THE DOOR. THE THERMOMETER SHALL BE EASILY CALIBRATED. THE THERMOMETER SENSING BULB ON THE INTERIOR OF THE DOOR SECTION TO HAVE PROTECTIVE COVER.

3.10 LIGHTING SHALL CONSIST OF THREE VAPOR-PROOF LIGHT FIXTURES TO BE FURNISHED LOSE, AND A LIGHT SWITCH WITH PILOT LIGHT FLUSH MOUNTED ON EXTERIOR. THE WIRING SYSTEM SHALL BE APPROVED BY UNDERWRITERS' LABORATORY.

3.11 PROVIDE LOCKS ON DOORS AS INDICATED ON COOLER PLAN.

3.12 PROVIDE WALL BUMPER GUARD

4.0 GLASS DISPLAY DOORS:
MANUFACTURED BY ANTHONY OR EQUAL

4.1 30" X 75" H. DISPLAY DOORS (SILL AT 7-1/2" A.F.F.)

4.2 ENERGY SAVER CONTROLS

4.3 FINISH TO BE SMOOTH BLACK.

4.4 COOLER DISPLAY DOORS SHALL HAVE 3-PANE KRYPTON GAS FILLED NON-HEATED INSULATED SAFETY GLASS

4.5 LED LIGHTING

4.6 36" DEEP SHELVES, (7) PER DOOR

4.7 KEY CYLINDER LOCK AT EACH DOOR.

4.8 FREEZER DISPLAY DOORS SHALL HAVE 3-PANE KRYPTON GAS FILLED HEATED SAFETY GLASS

5.0 REFRIGERATION:

5.1 ALL EQUIPMENT MUST CONFORM TO CONDENSING UNITS AND UNIT COOLERS SCHEDULE AS OUTLINED ON THIS SHEET. EQUIPMENT MUST HAVE UL LISTING FOR THE APPLICATION AS SPECIFIED.

5.2 CONDENSING UNIT AS SPECIFIED SHALL HAVE THE FOLLOWING:

1. HIGH EFFICIENCY ALUMINUM FIN. COPPER TUBE CONDENSER.
2. COMPRESSOR CONTRACTOR.
3. HIGH AND LOW PRESSURE CONTROLS
4. WEATHER RESISTANT HOUSING WITH WEATHER-PROOF ELECTRICAL CONTROL BOX.
5. ACCESS GUARD.
6. LOW AMBIENT CONTROL VALVE (CVP II) FPR FLOATING HEAD.
7. CRANKCASE HEATER.
8. LIQUID LINE FILTER DRIER, SIGHT GLASS AND SERVICE VALVE.
9. ELECTRIC DEFROST TIMER.
10. EXPANSION VALVES.
11. THERMOSTAT AND SOLENOID.

5.3 EVAPORATOR COILS SPECIFIED IN EVAPORATOR COIL SCHEDULE.

5.4 EXPANSION VALVE SHALL BE SIZED BY UNIT COOLER MANUFACTURER FOR PROPER REFRIGERATION. AS HEAD PRESSURE IS ALLOWED TO DROP DURING LOW AMBIENT CONDITIONS, EXPANSION VALVE NEEDS TO BE OVERSIZED TO ALLOW FLOW AT LOWER PRESSURE DIFFERENTIAL RATIO.

5.5 THERMOSTATS SHALL BE FURNISHED LOOSE FOR EACH SYSTEM AND SHALL BE WHITE RODGERS MODEL #1609-101 OR EQUAL, TAMPER-PROOF WITH PROPER TEMPERATURE RANGE, AS REQUIRED ON THIS DRAWING. OPTIONAL MANUFACTURERS: JOHNSON OR RANCO OR EQUAL.

5.6 SOLENOIDS SHALL BE FURNISHED LOOSE FOR EACH SYSTEM AS RECOMMENDED BY CONDENSING UNIT MANUFACTURER.

5.7 CONDENSATE PIPING SHALL BE COPPER OR PVC AND TRAPPED AFTER WALL PENETRATION. HEAT TAPE AND INSULATE WHERE REQUIRED TO PREVENT FREEZE UP.

5.8 REFRIGERATION WARRANTY SHALL BE A MINIMUM OF ONE (1) YEAR PARTS FOUR (4) YEAR COMPRESSOR WARRANTY AND NINETY (90) DAYS SERVICE.

5.9 HEAT SENSOR TO BE LOCATED 1'-2" ABOVE DOOR FRAME TO ALLOW FOR GRAPHICS INSTALLATION.

6.0 REFRIGERATION INSTALLATION

6.1 EVAPORATOR COILS SHALL BE MOUNTED FROM CEILING WITH 5/16" MINIMUM FASTENERS.

6.2 CONDENSING UNITS ARE MOUNTED ON THE ROOF AND MUST BE LEVEL WITH IT'S BASE ANCHORED TO PREVENT MOVEMENT. ALLOW PROPER CLEARANCE FOR AIR SUPPLY TO AND FROM UNIT AND FOR PROPER MAINTENANCE ACCESS.

6.3 SUCTION LINES AT TOP OF RISER ON ROOF SHALL BE SLOPED 1" PER TEN (10) FEET TO COMPRESSOR. ALL SUCTION LINES SHALL BE SIZED AND TRAPPED. INSULATE TO PREVENT SWEATING.

6.4 LIQUID LINES AND SOLENOID VALVE SHOULD BE INSTALLED IN THE LIQUID LINE JUST AHEAD OF EXPANSION VALVE IN COOLER.

6.5 BRAZING SHALL BE SILVER BEARING SOLDER HIGH TEMPERATURE OR EQUIVALENT ALLOY SUITABLE FOR THIS APPLICATION. NO "SOFT SOLDERS" PERMISSIBLE. NITROGEN IS TO BE PURGED THROUGH THE SYSTEM DURING BRAZING.

6.6 LEAK TEST THE ENTIRE SYSTEM AFTER ALL REFRIGERATION CONNECTIONS HAVE BEEN COMPLETED. LEAK TESTING SHALL BE PERFORMED WITH AN ELECTRONIC LEAK DETECTOR.

6.7 THE SYSTEM MUST BE EVACUATED WITH A VACUUM PUMP, HAVING THE CAPABILITY OF PULLING A VACUUM OF 50 MICRONS OR LESS. THE PUMP SHOULD BE CONNECTED TO BOTH THE HIGH AND LOW SIDES OF THE SYSTEM.

6.8 DURING CHARGING AND START-UP MAKE SURE SHIPPING RESTRAINTS ARE REMOVED AND ALL ELECTRICAL AND MECHANICAL CONNECTIONS ARE TIGHT. SET HIGH LOW PRESSURE SWITCH AS REQUIRED.

6.9 INSTALLATION AND SERVICE OF THIS EQUIPMENT SHOULD BE PERFORMED BY QUALIFIED AND EXPERIENCED REFRIGERATION MECHANICS. INSTALL ALL EQUIPMENT, PIPING IN ACCORDANCE WITH LOCAL AND NATIONAL CODES AND IN CONFORMANCE WITH GOOD PRACTICE REQUIRED FOR PROPER OPERATION.

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen
Consulting Engineers, Inc.

18215 72nd Avenue South
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10697 REGISTERED ARCHITECT
DANIEL B GOALWIN
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PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	ALLIANCE ZADM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:

COOLER PACKAGE

SHEET NO:

Q1.2

EQUIPMENT SCHEDULE

	NO.	QTY	ITEM / DESCRIPTION	VENDOR	MODEL NUMBER	V	PH	AMP	KVA	HP	PLUMBING SUPPLY COLD	PLUMBING SUPPLY HOT	PLUMBING WASTE SIZE	REMARKS
COFFEE	A1C	1	CAPPUCCINO MACHINE (6 HEAD)	CURTIS	G3 PRIMO PCGT63099 (LIFT DOOR)	120V	1	15	1.800		1/4"			UNIT WITH CORD & NEMA 5-15 PLUG
	A3	1	WHIPPED TOPPING DISPENSER	RICH'S	MYTOP									
	A4	1	BOTTLE DRIZZLE HOLDER	PLASTICS & PRODUCTS										
	A5	12	COFFEE CUP HOLDERS (UNDER COUNTER)	SHOPCO	HDW-CUPDISP-C2410C18									
	A8	1	ICED COFFEE CUP & LID DISPENSER (COUNTERTOP)	PLASTICS & PRODUCTS	CLSBP-718									
	A8A	3	ICED COFFEE CUP HOLDERS (UNDER COUNTER)	SHOPCO										
	A9	1 LOT	COFFEE CABINETS	SHOPCO	MULTIPLE #'S - SEE CUT SHEETS									
	A11B	1	SKINNY SHORT COFFEE CONDIMENT ISLAND (66"x34.5")	SHOPCO	MULTIPLE #'S - SEE CUT SHEETS									
	A14A	1	FROZEN BEVERAGE MACHINE (2 BARREL)	BUNN	34000.0081- ULTRA 2 HP BLK/SST	120V	1	12						UNIT WITH CORD & NEMA 5-15 PLUG
	A17	1	MINERAL REDUCTION FILTER SYSTEM (10K GAL)	3M, SUPPLIED BY DUKES										
	A20	2	COFFEE CONDIMENT ORGANIZER	PLASTICS & PRODUCTS	CCBP-16									FOR REGULAR CONDIMENT
	A20A	2	LID HOLDER AND CREAMER SHELF	PLASTICS & PRODUCTS	BPLH-3									FOR REGULAR CONDIMENT
	A20B	2	SYRUP RACK	PLASTICS & PRODUCTS	SFP-916FS									FOR REGULAR CONDIMENT
	A20C	1	BRIDGE	PLASTICS & PRODUCTS	SRB-55									FOR REGULAR CONDIMENT
	A33	3	COFFEE BEAN-TO-CUP GRINDER	SCHAERER	COFFEE ART C TOUCH 3G; 040381-00051EUS	208V	1	20			3/8"		1-1/2"	UNIT WITH CORD & NEMA L6-20R
	A49	2	TRASH RECEPTACLE (UNDER COUNTER)	SHOPCO	19 GALLON (14"x14"x24")									
	A50	2	ONE SIDED COUNTERTOP NAPKIN HOLDER	TRAEX/VOLLRATH	612-06									
	A52	1	COFFEE SMALLWARES PACKAGE	CHEFS' TOYS	SEE SHEET Q2.3									
FOUNTAIN	B1B	1	FROZEN BEVERAGE DISPENSER (4 FLAVOR)	CORNELIUS	621460041 VIPER SHORT MERCHANDISER	230V	1	30.0			3/8"			UNIT WITH CORD NEMA L6-30P
	B2A	1	FOUNTAIN TOP MOUNT ICE MAKER 850 LB (CUBED)	HOSHIZAKI	KMD-860MRJ, REMOTE AIR-COOLED	208-230V	1	12.5			1/4"		1/4"	
	B2B	1	FOUNTAIN TOP MOUNT ICE MAKER 900 LB (NUGGET)	SCOTSMAN	N0922R-32, REMOTE	208-230V	1	15			3/8"		3/4"	W/ KVS ICE LEVEL CONTROL BOARD
	B2C	1	ICE MAKER REMOTE CONDENSING UNIT (CUBED)	HOSHIZAKI	URC-9F	115V	1							FOR ITEM #B2A
	B2D	1	55" REFRIGERATION LINE SET	HOSHIZAKI	R404-5568-2									FOR ITEM #B2A
	B2E	1	ICE MAKER REMOTE CONDENSING UNIT (NUGGET)	SCOTSMAN	ERC311-32	208-230V	1	60						FOR ITEM #B2B
	B2F	1	40" REFRIGERATION LINE SET	SCOTSMAN	BRTE40									FOR ITEM #B2B
	B2G	1	ICE MACHINE THERMOSTAT (NUGGET)	SCOTSMAN										INCLUDED W/NUGGET ICE MACHINE PACKAGE
	B3A	1	FOUNTAIN CUP AND LID DISPENSER (LEFT)	SHOPCO	BP-PR-F00-VCD-L									
	B3B	1	FOUNTAIN CUP AND LID DISPENSER (RIGHT)	SHOPCO	BP-PR-F00-VCD-R									
	B6	1	FOUNTAIN CABINETRY	SHOPCO	MULTIPLE #'S - SEE CUT SHEETS									
	B7B	1	GRAPHIC DISPLAY BOARD (ILLUMINATED)	RED ROOSTER	95"x48"									
	B8	1	LID AND STRAW DISPENSER	SHOPCO	8"Wx73"H									
	B9	1	CABINET TRASH RECEPTACLE	SHOPCO	19 GALLON (14"x14"x24")									
	B12A	2	INTERACTIVE POST-MIX ICE DRINK DISPENSER	CORNELIUS	621058578, IDC PRO WITH DRIP TRAY	120V		8.5			1/2"		3/4"	
	B13D	1	36" FCB CART	SHOPCO	#BP-F00-FCB36									ON CASTERS
	B14D	1	FCB GRAPHIC FOR 36" CART (ILLUMINATED)	RED ROOSTER	42"x48"									
	B15	1	F'REAL BLENDER	F'REAL	FRLB6	120V	1	15			1/4"		3/4"	NEMA 5-15P
	B15A	1	MINI F'REAL FREEZER	F'REAL		120V	1	6.5						NEMA 5-15P
CASHIER	C1	1	CASHIER CABINET W/ IMPULSE SHELVING - 3'-0"	SHOPCO	SEE CUT SHEET									
	C1A	2	CASHIER CABINET W/ IMPULSE SHELVING - 2'-0"	SHOPCO	SEE CUT SHEET									
	C2	3	CASH REGISTERS/POS	RADIANT	STANDARD	120V	1	15						UNIT WITH CORD & NEMA 5-15 PLUG
	C3	1	INTERCOM TO FUEL POSITIONS	3M	D-120V W/4 STATION CARD	120V								
	C5	1	SAFE	TIDEL	SERIES 4XL W/ STORAGE VAULT & TUBE VEND	120-220V								
	C6A	1	LOTTO TERMINAL	STATE LOTTERY COMMISSION		120V	1	15						UNIT WITH CORD & NEMA 5-15 PLUG
	C7	1	TANK MONITOR EQUIPMENT	VEEDEROOT	VR-TLS 350	120V	1	15						
	C8	1 LOT	2' CIGAR SHELVING	AMERICAN DISPLAY	VENDOR									
	C8	1 LOT	CIGAR INDIVIDUAL SPRING LOAD	AMERICAN DISPLAY	VENDOR									
	C8	1 LOT	FLAT CARTON SHELVES FOR OTP STORAGE AREA	AMERICAN DISPLAY	VENDOR									
	C9	1 LOT	2' E-CIG	AMERICAN DISPLAY	VENDOR									
	C9	1 LOT	E-CIG INDIVIDUAL SPRING LOAD	AMERICAN DISPLAY	VENDOR									
	C9	1 LOT	2' E-CIG FLIP UP STRIPS WITH INSERTS	AMERICAN DISPLAY	VENDOR									
	C9	1 LOT	2' SQUARE VUSE SHELVING	AMERICAN DISPLAY	VENDOR									
	C10	1 LOT	2' MOIST SHELVING	AMERICAN DISPLAY	VENDOR									
	C10	1 LOT	MOIST INDIVIDUAL SPRING LOAD	AMERICAN DISPLAY	VENDOR									
	C11	1 LOT	CASHIER CABINETS	SHOPCO	MULTIPLE #'S - SEE CUT SHEETS									
	C12	1 LOT	2' AND 4' CIGARETTE SHELVING	AMERICAN DISPLAY	VENDOR									
	C12	1 LOT	4 AND 5 WIDE CIGARETTE SPRING LOADS	AMERICAN DISPLAY	VENDOR									
	C12	1 LOT	2' FLAT CARTON SHELVES FOR CIGARETTE STORAGE	AMERICAN DISPLAY	VENDOR									
	C12	1 LOT	2' AND 4' CIGARETTE HEADERS LIT	AMERICAN DISPLAY	VENDOR									
	C12	1 LOT	2' FLIP UP DOORS FOR STORAGE	AMERICAN DISPLAY	VENDOR									
	C13	1	LOTTO FORM HOLDER	LSI	385174									
	C15	1	UNDERCOUNTER SCRATCH TICKET DISPENSER	SHOPCO										
	C18B	2	ICE CREAM NOVELTY CASE	HUSSMANN	3' CASE (UNILEVER/TROPICAL/HELADOS DE MEXICO)	120V								UNIT WITH CORD & NEMA 5-15P PLUG
	C23	1	LOTTO SHROUD	LSI	701190									
	C24	1	MEAT SNACK RACK	IDL										
	C30A	1	AIR CURTAIN	MARS	LPN2-72-1UA-OB w/99-014 DOOR LIMIT SWITCH	115V	1	2.6		0.17				INSTALL AT STOREFRONT ENTRANCE
	C31	LOT	LED SHELF LIGHTING	SHOPCO										AT CANDY SERVING GONDOLAS
COOLER	D1A	17	WALK-IN COOLER GLASS DOOR ASSEMBLY DISPLAY	ANTHONY INTERNATIONAL	101NT HH, 3-PANE KRYPTON GAS FILLED									30"x75" BLACK FINISH, LED LIGHTING
	D2A	17	WALK-IN COOLER SHELVING	ANTHONY INTERNATIONAL	GRAVITY FEED SLIDE TRAC									STEEL POST W/ BLACK FINISH
	D2C	1	COOLER/FREEZER SHELF TAG MOULDING STRIPS	IDL	BLACK									
	D2D	1	COOLER DOOR LED LIGHTS	ANTHONY INTERNATIONAL	OPTIMAX									
	D3	2	WALK-IN FREEZER GLASS DOOR ASSEMBLY DISPLAY	ANTHONY INTERNATIONAL	101LT, 3-PANE KRYPTON GAS FILLED									30"x75" BLACK FINISH, LED LIGHTING
	D4	2	WALK-IN FREEZER SHELVING	ANTHONY INTERNATIONAL	GRAVITY FEED SLIDE TRAC 30"x30"									STEEL POST W/ BLACK FINISH
	D6A	1	COOLER SHELVING SYSTEM	TITAN	METRO A1860NK3									SHOWN IN FREEZER
	D6B	12	COOLER SHELVING SYSTEM	TITAN	METRO A1854NK3									
	D6C	1	COOLER SHELVING SYSTEM	TITAN	METRO A1836NK3									SHOWN IN FREEZER
	D10	4	WALK-IN COOLER EVAPORATOR	LARKIN	LEC0130AS7AMAB0200									SEE SHEET Q1.2
	D10A	2	WALK-IN COOLER CONDENSING UNIT	LARKIN	MOZ030M63C									SEE SHEET Q1.2
	D11	1	WALK-IN FREEZER EVAPORATOR	LARKIN	LEC0120BS6EMAB0200									SEE SHEET Q1.2
	D11A	1	WALK-IN FREEZER CONDENSING UNIT	LARKIN	MOZ025L63C									SEE SHEET Q1.2
		BULK	PRICE RAILS & GLIDES	TRION/ DISPLAY TECHNOLOGIES	SUPPLIER TO VERIFY EXACT PACKAGE									
ECOM	E2	1	ATM	NCR	SELFSERV 16									

	NO.	QTY	ITEM / DESCRIPTION	VENDOR	MODEL NUMBER	V	PH	AMP	KVA	HP	PLUMBING SUPPLY COLD	PLUMBING SUPPLY HOT	PLUMBING WASTE SIZE	REMARKS
OFFICE	F1	1 LOT	MANAGER'S DESK	SHOPCO	MULTIPLE #'S - SEE CUT SHEET									
	F2	1 LOT	SHELVING ABOVE DESK	METRO	SUPER ERECTA SHELF DIRECT WALL MOUNT									PROVIDE BLOCKING FOR MOUNTING
	F3A	1	LOCKING METAL STORAGE CABINET	TENNSCO/STAPLES	J2478SU (SAND 214) 48"x24"x78"									ASSEMBLED (WELDED)
	F4	1	COMPUTER SYSTEM	BOS	COMPUTER XP BKO	120V	1	1.7	0.300					UNIT WITH CORD & NEMA 5-15 PLUG
	F5	1	CCTV-RECORDER/DVR/MONITOR	NAVCO	MCS16-10E-16 CAMERA SYSTEM, 2016ARM-1TB-POS 16 RECORDER; 4800 CAMERA; CLINTON CE-VT988 LCD MONITOR	120V	1	7.0	0.300					
	F6	1	SATELLITE INTERFACE	HUGHES										
	F7	2	FILE CABINET (2 DRAWER)	TENNSCO/STAPLES	V282 (SAND 214) 15"x28"x27"									
	F8	1	MANAGER CHAIR	STAPLES										
	F9	2	EMPLOYEE LOCKER (DOUBLE TIER W/ LEGS)	TENNSCO/STAPLES	DTK-151836-1 (SAND 214) 15"x18"x78"									ASSEMBLED (WELDED)
	F10	1	WALL-MOUNTED NETWORK SECURITY RACK	TRIPP-LITE	SMART RACK SRW6U 14.5"x23.63"x17.5"									PROVIDE BLOCKING FOR MOUNTING
	F11	1	UPS BATTERY BACKUP			120V								
	F12	1	PRINTER			120V								
	F13	1	COAT RACK (WALL MOUNT)	PETER PEPPER/STAPLES	2085AL 22"x5"x4"									
BACKROOM	G1	1	BULK CO2 FOR POST MIX	CHART/NUCO2	CARBO-MIZER 450 W/ 6" LEGS									W/ REMOTE FLUSH MOUNT FILL/VENT BOX
	G2	1	CO2 SAFETY MONITORING	LOGICO2/NUCO2	CO2 ALERT MK10 DETECTOR SET 2 A									SENSOR AND ALARM
	G4	2	DRYING RACK	METRO SMARTWALL G3	TASK STATION (MEDIUM DUTY) #SWK36-1 ACCESSORY PACK - SINK #SWA1									40"x31"
	G6A	1	ICE MACHINE	SCOTSMAN	REMOTE PACKAGE									C0630MR32-A REMOTE CUBER ICE MAKER 800 LB, B530S STORAGE BINS 550 LB
	G6C	1	ICE MAKER REMOTE CONDENSING UNIT	SCOTSMAN	ERC311-32A REMOTE CONDENSER	208V					1/2"		3/4"	
	G7	1	MOP SINK	FIAT	MSB-3624						1/2"	1/2"	3"	
	G8	1	ELECTRIC WATER HEATER	A.O. SMITH	DRE-52-12	208V	3	33.3	12					
	G9B	1	3 COMPARTMENT SINK/ 18"x24" BOWLS & (2) 18" DRAIN BOARDS (90"x30")	ADVANCE TABCO	FC-3-1824-18RL W/								3"	W/ LEVER DRAIN
	G9E	1	PRE-RINSE FAUCET	FISHER	2210						1/2"	1/2"		WITH #2910-12 ADD-ON FAUCET
	G10	2	BAG-IN-BOX	MANITOWOC	5026343 (20 HEAD)									
	G10A	1	WATER BOOSTER DUAL SURGE TANK KIT	McCANNS	16-1517	115V	1	7		0.33				
	G11	1	WATER PURIFICATION SYSTEM	EVERPURE	EV9437-10									
	G16A	1	HAND SINK	ADVANCE TABCO	7-PS-51						1/2"	1/2"	2"	W/HANDS FREE FAUCET & SPLASH GUARD
	G21	1	2 DOOR REACH-IN REFRIGERATOR	TRUE	T-49-HC	115V	1	5.4						UNIT WITH CORD & NEMA 5-15P PLUG
	G34	1	MOP RACK	RUBBERMAID	1992									
	G54	1	CARBONATOR	McCANNS	"BIG MAC" E-SERIES E400397	115V	1	6.5	0.90	0.33	3/8"			UNIT WITH CORD & NEMA 5-15 PLUG
	G55A	1	4-BARREL FCB BAG N BOX/INSTALL KIT	CORNELIUS	560391									
	G55C	1	4-BARREL BUCK N BOOST TRANSFORMER	CORNELIUS	788742									
	G56	2	CLEANING CHEMICALS	SIGNET										
HOT FOOD	TG1	1	MICROWAVE OVEN	TURBO AIR	TMW-1100E	120V	1	15	1.68					UNIT WITH CORD & NEMA 5-15 PLUG
	TG2	1	COUNTERTOP NACHO RACK	GEHL'S	21"H x 7"W x 12"D									
	TG2A	2	UNDERCOUNTER NACHO RACK	SHOPCO										
	TG3	1	FOOD WARMER	HATCO	FS3HAC-3626 AIR CURTAIN	120/208V	1	13.8						UNIT W/ CORD & NEMA #L14-20P PLUG
	TG4B	1	REFRIGERATED SELF-SERVICE ISLAND	STRUCTURAL CONCEPTS	OASIS FS1656R 6' CASE	208/204V	1	23.73						SELF-CONTAINED REFRIGERATION, NEMA 6-30P
	TG5A	1	WORKTOP REFRIGERATOR	TRUE	TWT-60-ADA-HC	115V	1	4.0		0.25				UNIT WITH CORD & NEMA 5-15 PLUG
	TG6	1	BUN TOASTER	PRINCE CASTLE	297-T40	120V	1	13						UNIT WITH CORD & NEMA 5-15 PLUG
	TG7	1	MULTI-COOK CONVECTION OVEN W/TOUCH CONTROLS	ALTO-SHAAM	VECTOR VMC-H3HW; UL LISTED	208-240V	3							W/CORD & NEMA 15-50P; LEFT HINGED
	TG7B	1	OVEN STAND TABLE	ALTO-SHAAM	5033384; 36"H x 29.5"W x 31"D; S.S.									W/ CASTERS
	TG8A	2	NACHO CHEESE DISPENSER	GEHL'S	2.0 DISPENSER (21"H x 5.25"W x 14.75"D)	110V	1	2.5						
	TG9	1	FOOD LABEL PRINTER	AVERY DENNISON	FRESHMARX CENTRAL 9418	100-240V	1							UNIT WITH CORD & PLUG
	TG10B	1	MEDIUM REFRIGERATED CONDIMENT ISLAND	SHOPCO	84-3/4" x 39-3/8"	115V	1	5.5		0.25			1"	W/ LIGHTING & NEMA 5-15 PLUG
	TG14C	1	BARE FRUIT PRODUCE DISPLAY	FRITO LAY										
	TG15	1	TO GO BOX HOLDER	CALIFORNIA QUALITY PLASTICS										
	TG16	1	UTENSIL HOLDER	CALIFORNIA QUALITY PLASTICS										
	TG17	1 LOT	TO GO CABINETRY	SHOPCO										
	TG19	1	STEAM TABLE PAN RACK	CHEFS' TOYS	GSW ASR-1915KD (68"H x 15"W x 22"D)									W/CASTERS
	TG19A	1	SMALLWARES PACKAGE	CHEFS' TOYS	SEE SHEET Q2.3									
	TG35D	1	FREE STANDING BAKERY CASE	HUSSMANN	DCA244262	120V								UNIT WITH CORD & PLUG
	TG37	1	ENERGY ZONE COOLER	TRUE	GDM-10-HC-LD	115V	1	2	1.39	0.17				UNIT WITH CORD & NEMA 5-15 PLUG
	TG45	1	UV FLY LIGHT	ECOLAB	STEALTH- MAXIMA	115V	1							TOP EDGE: 24" FROM CEILING
SHELVING	G17	4	SHELVING	WASSERSTROM	METRO SUPER ERECTA 1848NC									
	G17A	3	SHELVING	WASSERSTROM	METRO SUPER ERECTA 1860NC									
		BULK	GONDOLA (BLACK)/ STRIP (BLACK)	SHOPCO										
SITE AMENITIES	SA1	2	EXPOSED AGGREGATE ROUND CEMENT TRASH RECEPTACLE	TREETOP PRODUCTS	4CW5010-SN/CL; W/ ALUMINUM LID (COLOR: CLAY)									39 GAL.; LINER INCLUDED
	SA2	1 LOT	PORTABLE PROPANE TANK DISPLAY	BLUE RHINO	44"W x 30"D x 70"H; (1) HINGED DOOR W/ LOCK; (3) SHELVES; 18 TANK CAPACITY									FOOT ANCHORS AS REQUIRED
	SA3	1	AIR/ WATER UNIT	CSC SERVICE WORKS/ AIR-SERV	LEGACY II		1	20						VAULT ASSEMBLY SYSTEM IN CONCRETE
	SA4	2	VACUUM UNIT	CSC SERVICE WORKS/ AIR-SERV	LEGACY II		1	20						VAULT ASSEMBLY SYSTEM IN CONCRETE
OPTIONAL	B1A	2	FROZEN BEVERAGE DISPENSER (3 FLAVOR)	CORNELIUS	621360041 VIPER SHORT MERCHANDISER	230V	1	30.0				3/8"		UNIT WITH CORD NEMA #L6-30P
	B13E	1	52" FCB CART	SHOPCO	BP-F00-FCB52									ON CASTERS
	B14E	1	FCB GRAPHIC FOR 52" CART (ILLUMINATED)	RED ROOSTER	59"x48"									
	C3	1	INTERCOM TO FUEL POSITIONS	3M	D-120V W/4 STATION CARD	120V								
	C5	1	SAFE - CASH VALIDATOR	NKL	V2RC15	120V	1	15						UNIT WITH CORD & NEMA 5-15 PLUG
	C5A	1	SAFE - COIN DROP	NKL	DBC AUTOBANK	120V	1	15						UNIT WITH CORD & NEMA 5-15 PLUG
	C5B	1	KEYPAD	NKL	EPR									
	C5D	1	PRINTER	NKL	OM-100	120V	1	15						UNIT WITH CORD & NEMA 5-15 PLUG
	G55	2	3-BARREL FCB BAG N BOX/INSTALL KIT	CORNELIUS	560392									
	G55B	1	3-BARREL BUCK N BOOST TRANSFORMER	CORNELIUS	788742									

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
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NO.	DATE	REVISION DESCRIPTION
1	2/6/24	PERMIT RESUBMITTAL
2		
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SEAL:

10697 REGISTERED ARCHITECT DANIEL B COALWIN STATE OF WASHINGTON

EXP: 08/05/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI

3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:

EQUIPMENT SCHEDULE

SHEET NO:

Q2.1

GENERAL NOTES

THE FOUNDATION HAS BEEN DESIGNED TO RESIST CODE REQUIRED VERTICAL AND LATERAL FORCES AFTER THE CONSTRUCTION OF ALL STRUCTURAL ELEMENTS HAS BEEN COMPLETED. STABILITY OF THE STRUCTURE PRIOR TO COMPLETION IS THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THIS RESPONSIBILITY INCLUDES BUT IS NOT LIMITED TO JOB SITE SAFETY; ERECTION MEANS, METHODS, AND SEQUENCES; TEMPORARY SHORING, FORMWORK, AND BRACING; USE OF EQUIPMENT AND CONSTRUCTION PROCEDURES. PROVIDE ADEQUATE RESISTANCE TO LOADS ON THE STRUCTURES DURING CONSTRUCTION PER SEI/ASCE STANDARD NO. 37-02 "DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION." ANY DISCREPANCIES FOUND AMONG THE DRAWINGS, THESE GENERAL NOTES AND THE SITE CONDITIONS SHALL BE REPORTED TO THE ARCHITECT, WHO SHALL CORRECT SUCH DISCREPANCY IN WRITING. ANY WORK DONE BY THE GENERAL CONTRACTOR AFTER DISCOVERY OF SUCH DISCREPANCY SHALL BE DONE AT THE GENERAL CONTRACTOR'S RISK. THE GENERAL CONTRACTOR SHALL VERIFY AND COORDINATE DIMENSIONS AMONG ALL DRAWINGS PRIOR TO PROCEEDING WITH ANY WORK OR FABRICATION.

STANDARDS

ALL METHODS, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE 2018 INTERNATIONAL BUILDING CODE (IBC) AS AMENDED AND ADOPTED BY THE LOCAL BUILDING OFFICIAL OR APPLICABLE JURISDICTION.

DESIGN CRITERIA

VERTICAL LOADS: ACTUAL DEAD LOAD OF SIGN

LATERAL FORCES

WIND: 97 MPH EXP. B

$F = qz G C_f A_f$

- VELOCITY PRESSURE, qz = 18.4 psf
- GUST EFFECT FACTOR, G = 0.85
- EXTERNAL PRESSURE COEFFICIENT, C_f=1.80
- A_f=AREA OF COMPONENT

SEISMIC: $V = CsW$

$$Cs = 0.14\ S_{DS}\ Ie \leq \frac{S_{DS}}{\left(\frac{R}{Ie}\right)} \leq \frac{S_{D1}}{\left(\frac{R}{Ie}\right)T}$$

- Cs MIN. FROM SEI/ASCE 7-16 SECTION 15.4
- SEISMIC IMPORTANCE FACTOR, Ie = 1.0
- OCCUPANCY CATEGORY = I
- SPECTRAL RESPONSE ACCELERATIONS Ss = 1.27 S_1 = 0.44
- SITE CLASS PER TABLE 1615.1 = D
- SPECTRAL RESPONSE COEFFICIENTS S_{DS} = 0.85 & S_{D1} = 0.54
- SEISMIC DESIGN CATEGORY = D
- W = DEAD LOAD OF COMPONENT
- ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE ANALYSIS
- RESPONSE MODIFICATION FACTOR PER SEI/ASCE 7-16 TABLE 15.4-2 R = 2.0
- Cs = 0.42

CONCRETE

CONCRETE: SHALL BE MADE WITH PORTLAND CEMENT ASTM C-150 TYPE II OR TYPE I AND SHALL BE READY MIXED PER ASTM C-94.

MIX DESIGNS: THE CONTRACTOR SHALL DESIGN CONCRETE MIXES THAT, MEET OR EXCEED THE REQUIREMENTS OF THE CONCRETE MIX TABLE. THE MIX DESIGNS SHALL FACILITATE ANTICIPATED PLACEMENT METHODS, WEATHER, REBAR CONGESTION, ARCHITECTURAL FINISHES, CONSTRUCTION SEQUENCING, STRUCTURAL DETAILS, AND ALL OTHER FACTORS REQUIRED TO PROVIDE A STRUCTURALLY SOUND, AESTHETICALLY ACCEPTABLE FINISHED PRODUCT. WATER REDUCING ADMIXTURES MAY BE USED TO MEET THESE REQUIREMENTS. MAXIMUM SLUMP SHALL BE 5".

ADMIXTURES: ADMIXTURES SHALL BE BY MASTER BUILDERS, W.R. GRACE, OR PRE-APPROVED EQUAL. ALL MANUFACTURERS RECOMMENDATIONS SHALL BE FOLLOWED.

WATER: SHALL BE CLEAN AND POTABLE.

ITEM	DESIGN f'c (PSI) (1)	MAX. W/C RATIO	MIN. (3) FLYASH (PCY)	MAX. AGGREGATE SIZE (IN)	NOTES	MIN. CEMENTITOUS (2) MATERIAL (SACKS/YARD)
FOUNDATIONS	2500 @ 28 DAYS	0.45	--	3/4	--	5-1/2"

CONCRETE MIX NOTES:

1. CONCRETE SHALL BE AIR ENTRAINED. TOTAL AIR CONTENT (PERCENT BY VOLUME OF CONCRETE) SHALL NO BE LESS THAN 5% OR MORE THAN 7%.

2. TOTAL CEMENTITOUS MATERIAL IS THE SUM OF ALL CEMENT PLUS FLYASH.

3. AT THE CONTRACTORS OPTION FLYASH MAY BE SUBSTITUTED FOR CEMENT BUT SHALL NOT EXCEED 25% BY WEIGHT OF TOTAL CEMENTITIOUS MATERIAL.

NON-SHRINK GROUT: MASTER BUILDERS "MASTERFLOW 555" OR PRE-APPROVED EQUAL. GROUT SHALL CONFORM TO CRD-C621 AND ASTM C1107 GRADE B WHEN TESTED AT A FLUID CONSISTENCY PER CRD- C611-85 FOR 30 MINUTES. GROUT MAY BE PLACED FROM A 25 SECOND FLOW TO A STIFF PACKING CONSISTENCY. FILL OR PACK ENTIRE SPACE UNDER PLATES OR SHAPES. NO GROUTING SHALL BE DONE BELOW 40° F.

METAL REINFORCEMENT (CONCRETE):

REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 40 OR 60. PLACE PER ACI 315 AND ACI 318. LAP SPLICES SHALL BE 48 BAR DIAMETERS UNLESS NOTED OTHERWISE.

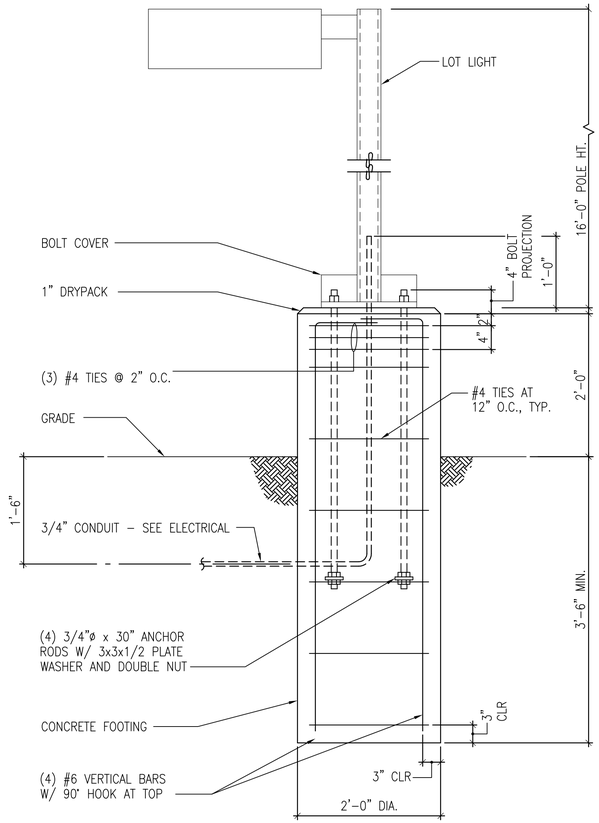
STRUCTURAL STEEL

DETAILING, FABRICATION AND ERECTION

MATERIAL PROPERTIES

OTHER SHAPES AND PLATES: ASTM A36 (Fy = 36 KSI)

ANCHOR RODS (A.B.): ASTM F1554, GRADE 36, CLASS 2A



HIGH LEVEL LOT LIGHT

1 / S0.1 **SECTION**

NO SCALE

DRAWING INDEX		
1	S0.1	LOT LIGHT FOUNDATION
2	S1.1	FOUNDATION PLAN
3	S1.2	CEILING FRAMING PLAN
4	S1.3	ROOF FRAMING PLAN
5	S2.1	DETAILS
6	S2.2	DETAILS
7	S2.3	DETAILS
8	S2.4	DETAILS
9	S2.5	DETAILS
10	S2.6	DETAILS
11	S2.7	DETAILS
12	S2.8	DETAILS
13	S2.10	UNDERGROUND STORAGE TANK PLAN AND DETAILS
14	S2.11	EV CHARGING STATION DETAIL
15	S3.1	GENERAL NOTES
16	S3.2	GENERAL NOTES
17	S3.3	GENERAL NOTES
18	S3.4	GENERAL NOTES

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
-	10/17/23	BID SET
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SEAL:

STEVEN JOSEPH WILLIAMS — STATE OF WASHINGTON — 55281 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI

3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

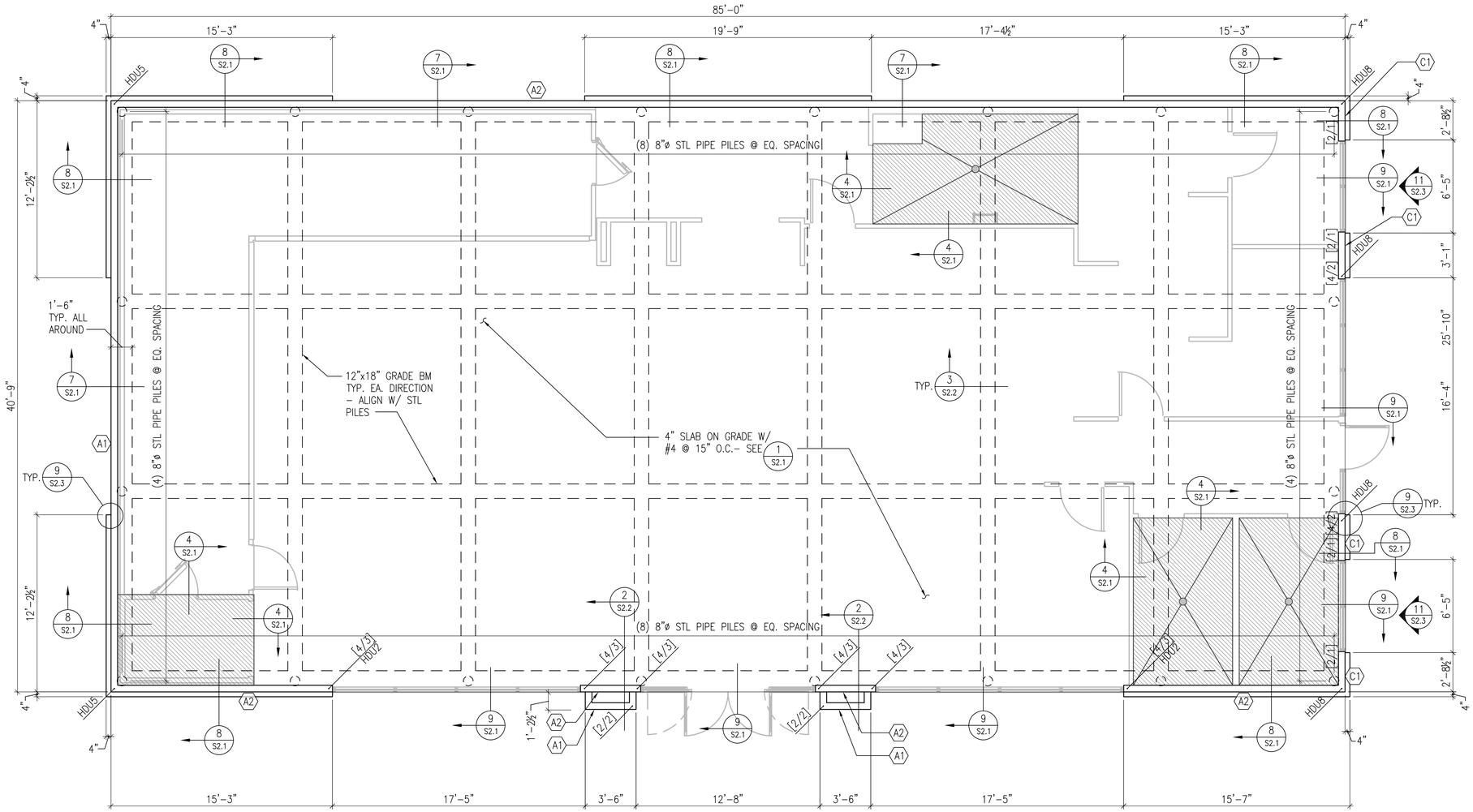
DESIGNED BY:	SJW	ALLIANCE Z&DM:	
CHECKED BY:	SJW	BP REPM:	
DRAWN BY:	SAA	ALLIANCE PM:	
VERSION:	- -	PROJECT NO:	21730

DRAWING TITLE:

LOT LIGHT FOUNDATION

SHEET NO:

S0.1



1 S1.1

FOUNDATION PLAN

1/4"=1'-0"

FOUNDATION NOTES

1. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. FINISH FLOOR = 0'-0" A.F.F. UNLESS NOTED OTHERWISE.
2. INDICATES WOOD STUD WALL. WOOD STUDS SHOULD ALIGN WITH TRUSS LAYOUT AND BE SPACED @ 16" O.C. MAXIMUM UNLESS NOTED OTHERWISE. PROVIDE 15/32" WOOD SHEATHING AT ALL EXTERIOR WALLS NAILED WITH 8d @ 6" O.C. AT ALL PANEL EDGES (PROVIDE 2x BLOCKING AT UNSUPPORTED PANEL EDGES) AND 8d @ 12" O.C. AT INTERMEDIATE FRAMING TYPICAL UNLESS NOTED OTHERWISE. SEE NOTE 11 FOR ADDITIONAL SHEAR WALL NAILING.
3. INDICATES CONCRETE GRADE BEAM 1'-6" UNLESS NOTED OTHERWISE. SEE S2.1 FOR TYPICAL FOUNDATION DETAILS.
4. HDU5 — INDICATES HOLDOWN. SEE 1/S2.2 AND 4/S2.3.
5. INDICATES DEPRESSED SLABS. FOR EXACT LOCATION SEE ARCHITECTURAL DRAWINGS.
6. FOR TYPICAL CONCRETE SLAB-ON-GRADE DETAILS SEE S2.1.
7. FOR TYPICAL STEPS IN FOOTING AND FOUNDATION CONSTRUCTION JOINTS SEE DETAILS 5/S2.1 AND 2/S2.1.
8. FOR TYPICAL EXCAVATION LIMITATIONS IN THE PROXIMITY OF FOUNDATIONS SEE 6/S2.1.
9. NON-STRUCTURAL STUD WALLS ARE NOT SHOWN OR SHOWN SCREENED. FOR LOCATION SEE ARCHITECTURAL DRAWINGS. FOR BRACING AT TOPS OF WALLS SEE S2.4.
10. A1 — INDICATES SPECIAL WOOD STUD SHEAR WALL. SEE 6/S2.3 FOR SCHEDULE.
11. B.U. COL. — INDICATED WOOD STUD BUILT-UP COLUMN – SEE 10/S2.3 FOR TYPICAL DETAIL
12. [1/2] INDICATES NUMBER OF FULL HEIGHT AND NUMBER OF CRIPPLE STUDS AT END OF HEADER SEE 5/S2.3.
13. FOR SITE TRASH ENCLOSURE SEE S2.9 FOR PLAN AND DETAILS. FOR LOCATION SEE ARCHITECTURAL DRAWINGS.
14. INDICATES 8"ø STEEL PIPE PILE BELOW. SEE GENERAL NOTES FOR PILE DETAILS AND INSTALLATION REQUIREMENTS.
15. FOR UNDERGROUND STORAGE TANK FOUNDATION DETAILS SEE S2.10. FOR LOCATION SEE ARCHITECTURAL DRAWINGS.
16. FOR EV CHARGING STATION FOUNDATION DETAIL SEE S2.11. FOR LOCATION SEE ARCHITECTURAL DRAWINGS.

CLIENT:

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SEAL:

STATE OF WASHINGTON · STEVEN JOSEPH WILLIAMS · 55281 · STRUCTURAL ENGINEER · PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI

3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

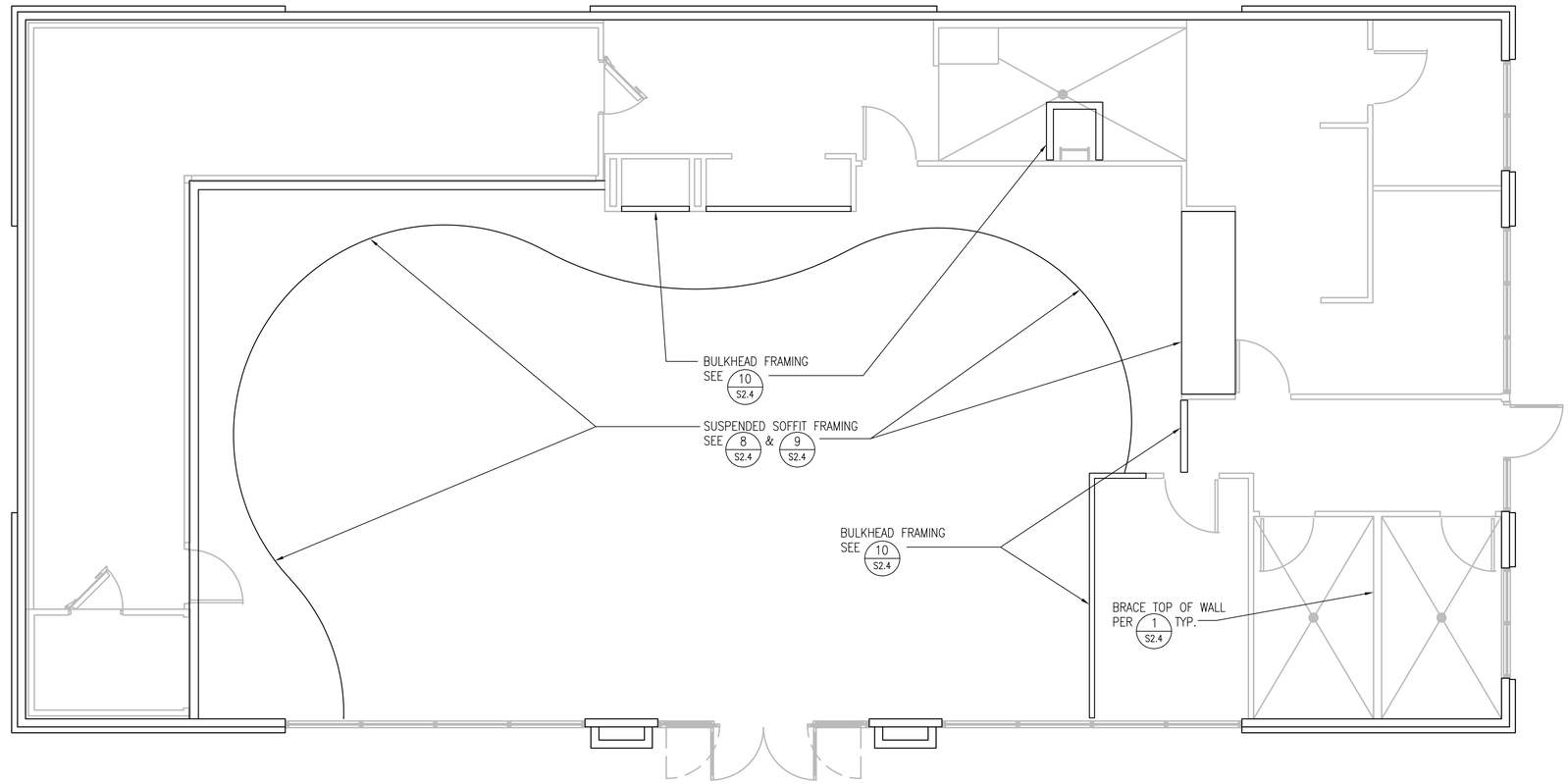
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CHECKED BY:	SJW	BP REPM:	
DRAWN BY:	SAA	ALLIANCE PM:	
VERSION:	-	PROJECT NO:	21730

DRAWING TITLE:

FOUNDATION PLAN

SHEET NO:

S1.1



1 S1.2

CEILING FRAMING PLAN

1/4"=1'-0"

NOTES

1. FOR ADDITIONAL DIMENSIONS, CEILING ELEVATIONS, FINISHES AND DETAILS SEE ARCHITECTURAL DRAWINGS.
2. SEE S2.4 FOR TYPICAL CEILING AND BRACING DETAILS.
3. INDICATES SPAN OF CEILING JOISTS. PROVIDE 2x6 @ 24" O.C. CEILING JOISTS, UNLESS NOTED OTHERWISE.
4. SUSPENDED SOFFIT FRAMING SHALL BE CONSTRUCTED WITH 350S137-33 JOISTS & STUDS @ 24" O.C. OR EQUAL SEE 8 S2.4 & 9 S2.4
5. SEE 6 S2.4 & 7 S2.4 FOR TOP OF WALL CONNECTION.

CLIENT:

bp

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BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
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PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI

3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

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PUYALLUP, WA 98371

FACILITY #7184

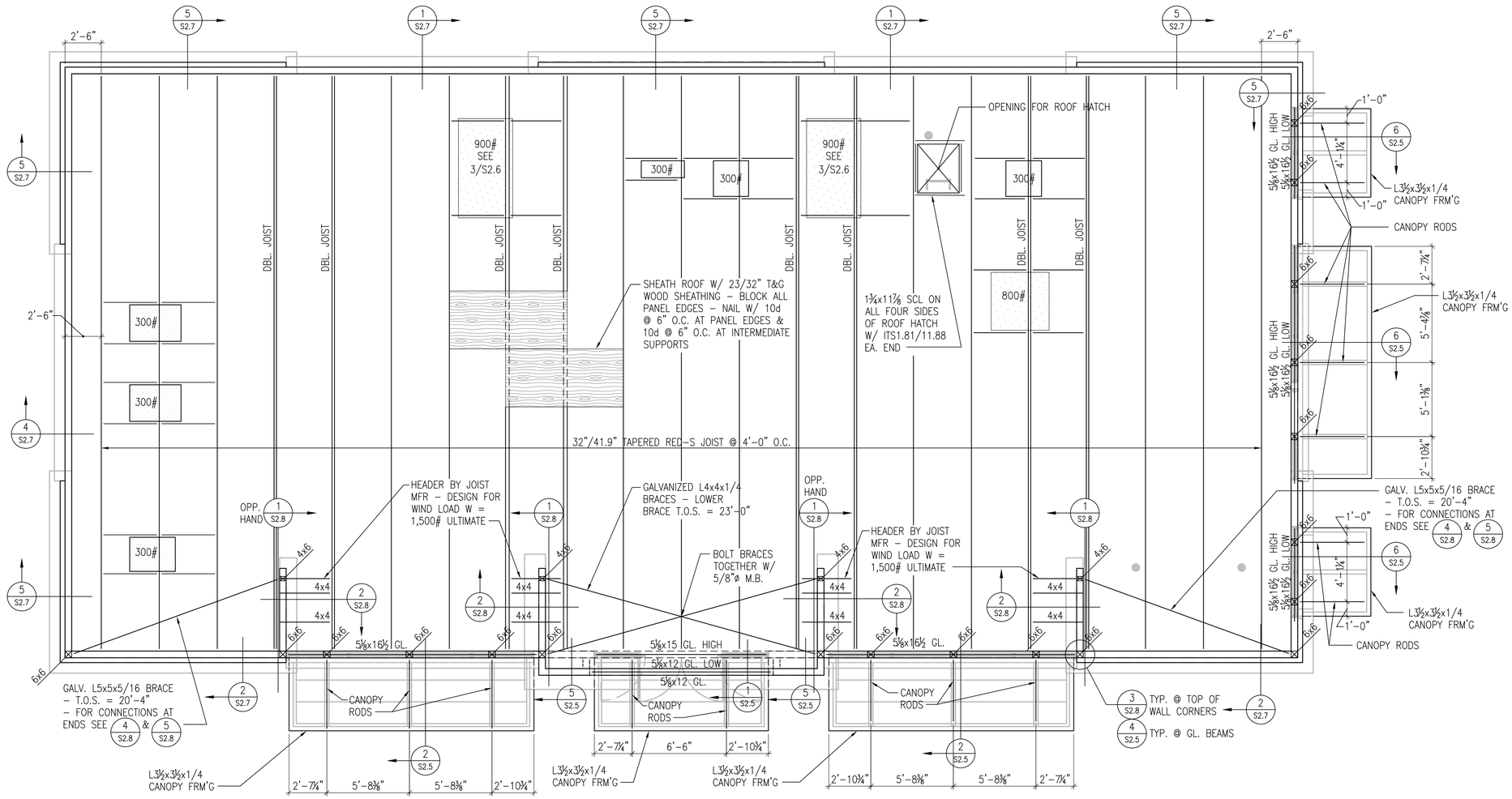
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VERSION:	-	PROJECT NO:	21730

DRAWING TITLE:

CEILING FRAMING PLAN

SHEET NO:

S1.2



ROOF FRAMING PLAN

1/4"=1'-0"

ROOF FRAMING NOTES

1. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. FINISH FLOOR = 0'-0" A.F.F. UNLESS NOTED OTHERWISE.
2. INDICATES STRUCTURAL WALL EXTENDING TO ROOF STRUCTURE.
3. INDICATES PENETRATION IN ROOF STRUCTURE.
4. PROVIDE 23/32" T&G WOOD SHEATHING OVER ENTIRE ROOF STRUCTURE. NAIL WOOD ROOF SHEATHING WITH 10d @ 6" O.C. AT ALL SUPPORTED PANEL EDGES AND 10d @ 6" O.C. AT INTERMEDIATE FRAMING. TYPICAL UNLESS NOTED OTHERWISE.
5. FOR SUPPORT OF MISCELLANEOUS MECHANICAL EQUIPMENT AND PIPES FROM ROOF STRUCTURE SEE S2.6.
6. ROOF TRUSSES ARE A DEFERRED SUBMITTAL ITEM, SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROJECT STATE, AND THE PACKAGE SHALL BE REVIEWED AND APPROVED BY THE ENGINEER OF RECORD. SEE GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.

CLIENT:

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SEAL:

JOSEPH WILLIAM WHITE — STATE OF WASHINGTON — 55281 — PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

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FACILITY #7184

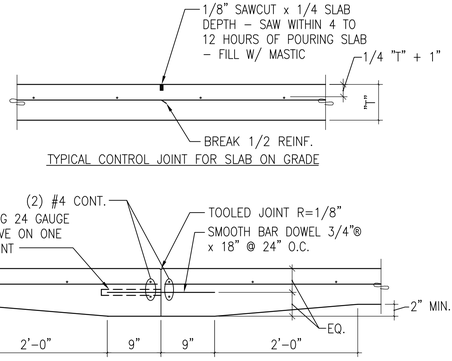
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ROOF FRAMING PLAN

SHEET NO:

S1.3

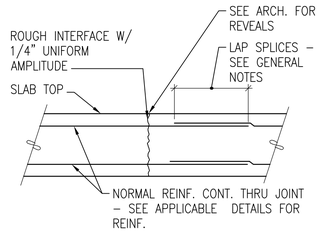


TYPICAL CONTROL JOINT FOR SLAB ON GRADE

TYPICAL CONSTRUCTION JOINT FOR SLAB ON GRADE

1 S2.1 **SECTION**

NO SCALE



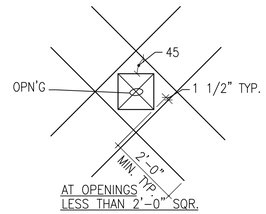
TYPICAL AT CONCRETE GRADE BEAMS & FOOTINGS

NOTE:
OBTAIN APPROVAL OF ENGINEER FOR LOCATION OF ANY CONST. JOINTS.

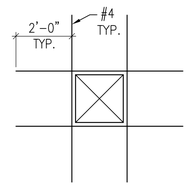
TYPICAL FOR CAST IN PLACE GRADE BEAMS AND FOOTINGS

2 S2.1 **CONSTRUCTION JOINTS**

NO SCALE



AT OPENINGS LESS THAN 2'–0" SQR.



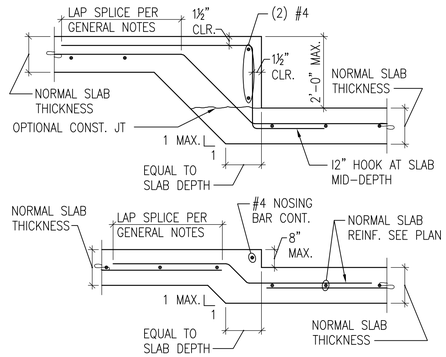
AT OPENINGS MORE THAN 2'–0" SQR.

NOTES:
1. AROUND OPENINGS 6"ø OR LESS NO ADD'L REINF. REQ'D
2. REINF. SHOWN IS #4 @ SLAB MID–DEPTH HOOK BARS THAT CANNOT BE EXTENDED

TYPICAL SLAB ON GRADE DISCONTINUITY REINFORCEMENT

3 S2.1 **PLAN DETAILS**

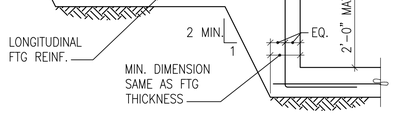
NO SCALE



TYPICAL SLAB STEPS OR DEPRESSIONS

4 S2.1 **DETAIL**

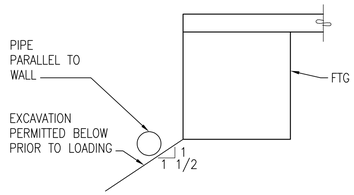
NO SCALE



TYPICAL STEPPED FOOTING

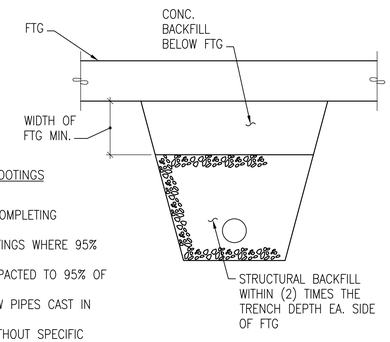
5 S2.1 **DETAIL**

NO SCALE



TYPICAL FOR PARALLEL PIPES ADJACENT TO FOOTINGS

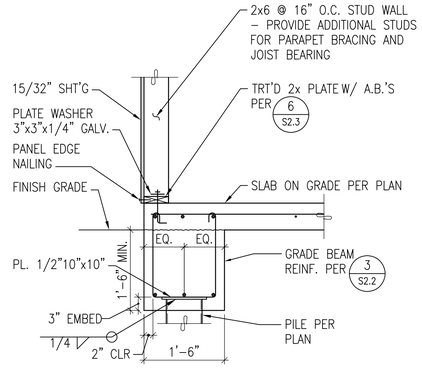
NOTES:
1. FOUNDATIONS SHALL NOT BE LOADED PRIOR TO COMPLETING STRUCTURAL BACKFILL UNDER & NEAR FOOTINGS.
2. CONCRETE BACKFILL SHALL BE USED UNDER FOOTINGS WHERE 95% COMPACTION CANNOT BE ACCOMPLISHED.
3. ALL STRUCTURAL BACKFILL NOTED SHALL BE COMPACTED TO 95% OF MAX. DENSITY PER ASTM.
4. A PIPE SLEEVE SHALL BE PROVIDED FOR SHALLOW PIPES CAST IN CONCRETE.
5. PIPES SHALL NOT BE PLACED IN THE FOOTING WITHOUT SPECIFIC APPROVAL FROM THE ENGINEER.
6. FOR VARIATIONS CONTACT ENGINEER.



TYPICAL FOR PERPENDICULAR PIPES UNDER FOOTINGS

6 S2.1 **SECTION**

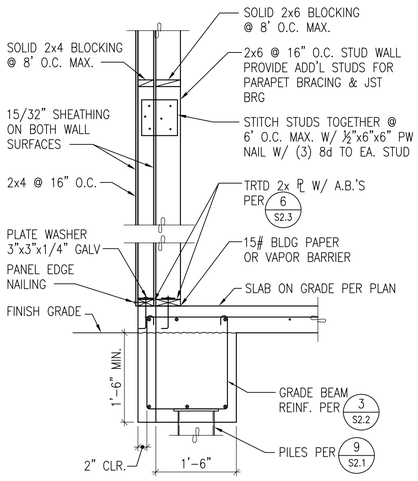
NO SCALE



TYPICAL FOUNDATION AT EXTERIOR STUD WALL

7 S2.1 **SECTION**

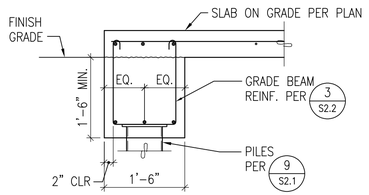
NO SCALE



TYPICAL FOUNDATION AT EXTERIOR STUD WALL

8 S2.1 **SECTION**

NO SCALE



TYPICAL FOUNDATION AT EXTERIOR STUD WALL

9 S2.1 **SECTION**

NO SCALE

CLIENT:

bp

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SEAL:

JOSEPH WILLIAM WEEKS — STATE OF WASHINGTON — 55201 — PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI

3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

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FACILITY #7184

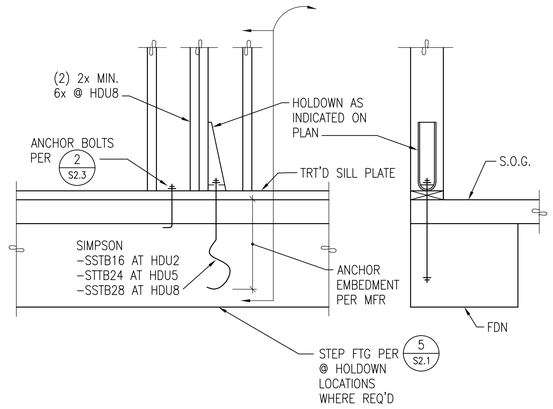
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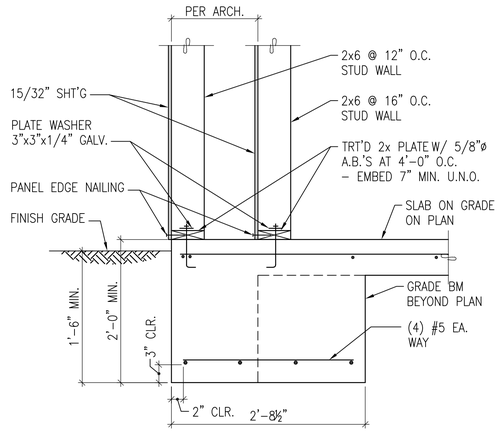
S2.1



TYPICAL FOUNDATION ANCHOR ROD HOLDOWN

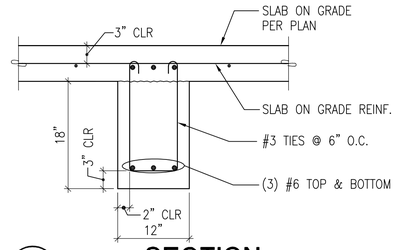
1 S2.2 **DETAIL**

NO SCALE



2 S2.2 **SECTION**

1"=1'–0"



3 S2.2 **SECTION**

1"=1'–0"

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SEAL:

STATE OF WASHINGTON · STEVEN JOSEPH WILLIAMSON · 55281 · STRUCTURAL ENGINEER · PROFESSIONAL ENGINEER

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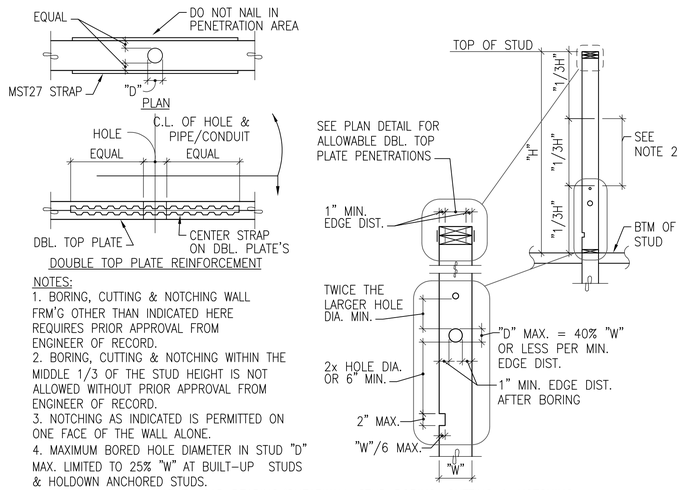
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DETAILS

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S2.2

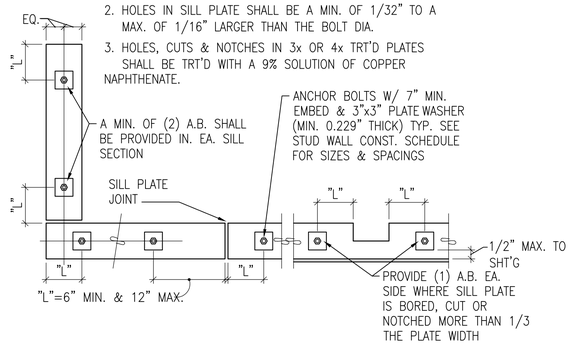


NOTES:
1. BORING, CUTTING & NOTCHING WALL FRM'G OTHER THAN INDICATED HERE REQUIRES PRIOR APPROVAL FROM ENGINEER OF RECORD.
2. BORING, CUTTING & NOTCHING WITHIN THE MIDDLE 1/3 OF THE STUD HEIGHT IS NOT ALLOWED WITHOUT PRIOR APPROVAL FROM ENGINEER OF RECORD.
3. NOTCHING AS INDICATED IS PERMITTED ON ONE FACE OF THE WALL ALONE.
4. MAXIMUM BORED HOLE DIAMETER IN STUD "D" MAX. LIMITED TO 25% "W" AT BUILT-UP STUDS & HOLDOWN ANCHORED STUDS.

ALLOWABLE LOAD BEARING/SHEARWALL STUD BORING, CUTTING & NOTCHING

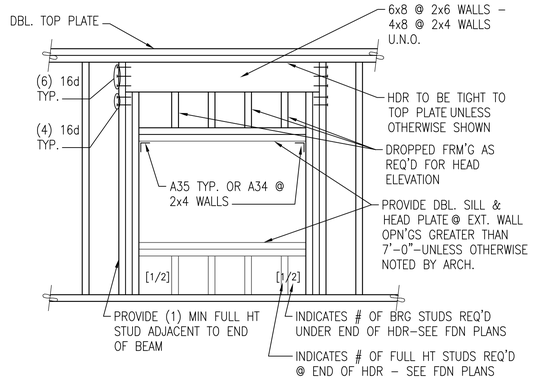
1 / S2.3 **DETAIL** NO SCALE

NOTES:
1. SILL PLATE SHALL BE PRESERVATIVE PRESSURE TRT'D – REFER TO GENERAL NOTES FOR GALV. REQUIREMENTS FOR CONNECTORS & FASTENERS.
2. HOLES IN SILL PLATE SHALL BE A MIN. OF 1/32" TO A MAX. OF 1/16" LARGER THAN THE BOLT DIA.
3. HOLES, CUTS & NOTCHES IN 3x OR 4x TRT'D PLATES SHALL BE TRT'D WITH A 9% SOLUTION OF COPPER NAPHTHENATE.



TYPICAL SILL PLATE ANCHORAGE

2 / S2.3 **DETAIL** NO SCALE



NOTE: PROVIDE (1) BRG STUD MIN. UNDER END OF EA. HDR UNLESS NOTED THUS [ ] ON FOUNDATION PLAN

TYPICAL STUD WALL CONSTRUCTION AT HEADER

5 / S2.3 **SECTION** NO SCALE

SPECIAL SHEAR WALL CONSTRUCTION SCHEDULE

TABLE 1 –SHEAR WALL REQUIREMENTS

MARK	SHEATHING REQUIREMENTS	[2] EDGE NAILING	FIELD NAILING	SOLE NAILING	5/8" ANCHOR BOLT SPACING (EMBED 7")
A	15/32"	8d @ 6" O.C.	8d @ 12" O.C.	16d @ 6" O.C.	48" O.C.
B	15/32" (4) (5)	8d @ 4" O.C.	8d @ 12" O.C.	16d @ 4" O.C.	32" O.C.
C	15/32", DOUBLE SIDED (4) (5)	8d @ 4" O.C.	8d @ 12" O.C.	16d @ 4" O.C.	32" O.C.

TABLE 2 – STUD SPACING REQUIREMENTS

MARK	STUD SIZE & SPACING	# STUDS REQ'D AT MEMBER BRG
1	2x6 @ 16" O.C.	1
2	2x6 @ 16" O.C.	2 (7)

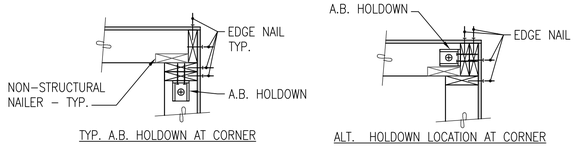
FIRST CHARACTER INDICATES SPECIAL SHEAR WALL REQUIREMENTS PER TABLE 1

SECOND CHARACTER INDICATES SPECIAL STUD SPACING PER TABLE 2

NOTES:

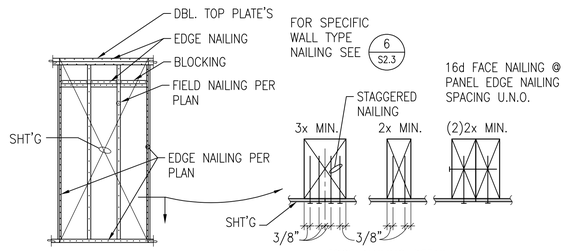
1. XX INDICATES SPECIAL STRUCTURAL WALL TYPE. ALL WALLS SHOWN ON STRUCTURAL DRAWINGS ARE 2x6 AT 16" O.C. UNLESS DESIGNATED SPECIAL. STUD LAYOUT SHALL MATCH FRM'G MEMBER LAYOUT ABOVE WHERE APPLICABLE. ALL EXTERIOR WALLS SHALL HAVE 15/32" WOOD SHEATHING AND BE NAILED WITH 8d AT 6" O.C. AT EDGES AND 12" O.C. IN FIELD UNLESS DESIGNATED SPECIAL.
2. ALL EXTERIOR WALLS AND ALL DESIGNATED SHEAR WALLS SHALL BE BLOCKED AT ALL SHEATHING EDGES. EDGE NAILING APPLIES TO ALL TOP AND BOTTOM PLATES, VERTICAL JOINTS, HORIZONTAL BLOCKED JOINTS, WALL CORNERS, AND HOLDOWN ANCHORED STUDS.
3. WHERE BEAMS OR HEADERS FRAME INTO WALLS AND A COLUMN IS NOT CALLED OUT, PROVIDE BUILT-UP COLUMN
4. PROVIDE 3x OR DOUBLE 2x MEMBERS FACE NAILED PER 7/S2.3 AT ALL ABUTTING PANEL EDGES WHERE INDICATED.
5. PROVIDE 3x SILL PLATE WHERE INDICATED.
6. WHERE SOLID SAWN STUD LENGTH CANNOT BE OBTAINED, SCL STUDS MAY BE SUBSTITUTED. SOLID SAWN FRAMING MAY NOT BE SUBSTITUTED FOR SPECIFIED SCL FRAMING.
7. PROVIDE (3) 2x6 FULL HEIGHT STUDS @ 8'-0" O.C. FOR PARAPET BRACING. PROVIDE (4) 2x6 FULL HEIGHT STUDS AT 5'-4" AT WALLS TALLER THAN 20'-0". SEE 1/S2.7 & 2/S2.7.

6 / S2.3 **SCHEDULE** NO SCALE



TYPICAL CROSSWALL HOLDOWN LOCATIONS

4 / S2.3 **PLAN DETAIL** NO SCALE



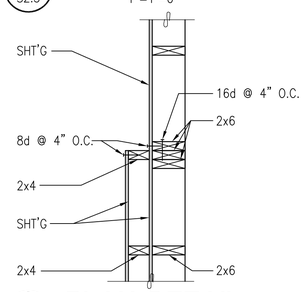
NOTES:
1. PANEL EDGE NAILING AND PLATE NAILING SHALL BE STAGGERED IN ALL CASES.
2. SHEATHING JOINT SHALL OCCUR AT COMMON MEMBER UNLESS IT OCCURS AT A SPECIFIED DBL. MEMBER.
3. EDGE NAILING AS CALLED FOR ON PLANS & DETAILS APPLIES TO AREAS INDICATED AND AT HOLDOWN ANCHORED STUDS.

TYPICAL SHEARWALL NAILING

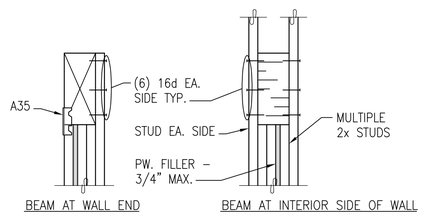
7 / S2.3 **DETAIL** NO SCALE

HSS
2x6 EA. SIDE OF HSS FASTEN TO HSS COL. W/ 1/4"DIA. SCREWS @ 6" O.C.
SHT'G
PANEL EDGE NAILING

8 / S2.3 **PLAN DETAIL** 1"=1'-0"

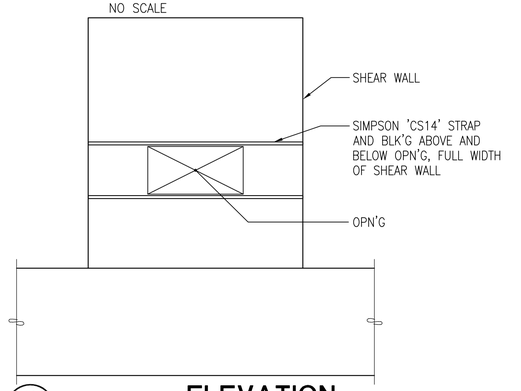


9 / S2.3 **PLAN DETAIL** 1"=1'-0"



TYPICAL BUILT-UP COLUMN AT BEAM PERPENDICULAR TO WALL

10 / S2.3 **SECTION** NO SCALE



10 / S2.3 **ELEVATION** NO SCALE

CLIENT: bp ARCO
BP WEST COAST PRODUCTS, LLC

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SEAL: JOSEPH WILLIAM WEEKS, STATE OF WASHINGTON, 55281, REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

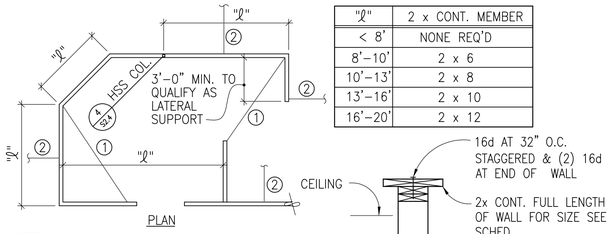
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PUYALLUP, WA 98371

FACILITY #7184

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VERSION:	- -	PROJECT NO:	21730

DRAWING TITLE: **DETAILS**

SHEET NO: **S2.3**



PLAN

TOP OF WALL BRACE

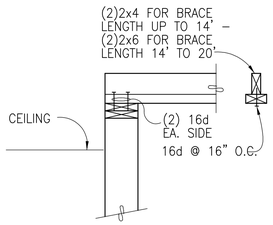
"ℓ"	2 x CONT. MEMBER
< 8'	NONE REQ'D
8'–10'	2 x 6
10'–13'	2 x 8
13'–16'	2 x 10
16'–20'	2 x 12

NOTES:

1. THIS PLAN IS AN EXAMPLE ONLY IT DOES NOT REPRESENT A SPECIFIC WALL
2. "ℓ" INDICATES UNBRACED LENGTH OF WALLS.
3. AT CONTRACTORS OPTION IN LIEU OF EXTRA TOP PLATE:
   - (1) INDICATES HORIZ BRACE EXTENDING TO ADJACENT CORNER SEE 2/S2.4.
   - (2) INDICATES BRACE UP TO ROOF STRUCTURE SEE 3/S2.4, & 5/S2.4.

TYPICAL LATERAL SUPPORT FOR INTERIOR NON–BEARING WALLS NOT EXTENDING TO STRUCTURE

1 S2.4 **DETAIL** NO SCALE

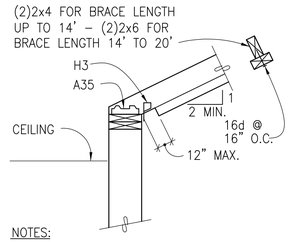


NOTES:

1. MAX. SPACING OF BRACES = 10'–0"
2. BRACES NOT REQ'D WITHIN 8'–0" OF OTHER LATERAL WALL SUPPORT, CORNERS & INTERSECTIONS

TYPICAL TOP OF WALL BRACE (HORIZONTAL)

2 S2.4 **SECTION** NO SCALE

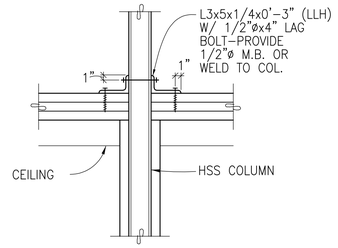


NOTES:

1. MAX. SPACING OF BRACES = 10'–0"
2. BRACES NOT REQ'D WITHIN 8'–0" OF OTHER LATERAL WALL SUPPORT, CORNERS & INTERSECTIONS

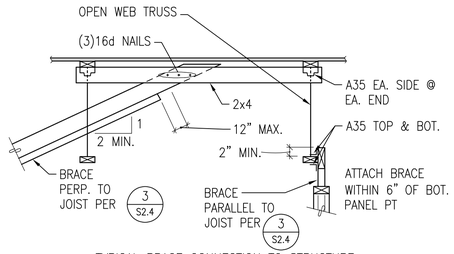
TYPICAL TOP OF WALL BRACE UP TO STRUCTURE

3 S2.4 **SECTION** NO SCALE



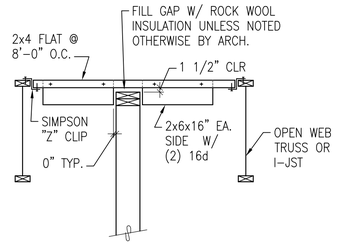
TYPICAL WALL BRACE AT TUBE STEEL COLUMN

4 S2.4 **SECTION** NO SCALE



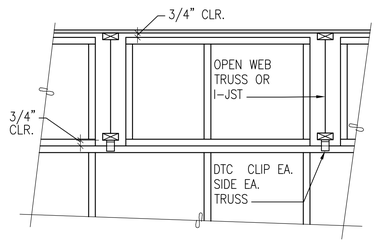
TYPICAL BRACE CONNECTION TO STRUCTURE

5 S2.4 **SECTION** NO SCALE



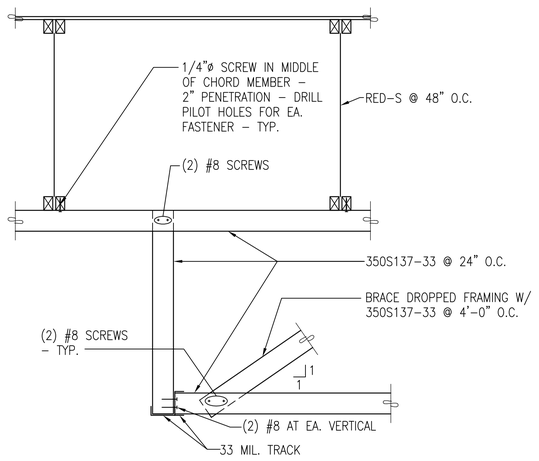
TYPICAL CONNECTION AT TOP OF NON–BEARING WALL EXTENDING TO ROOF STRUCTURE, PARALLEL TO JOIST

6 S2.4 **SECTION** NO SCALE



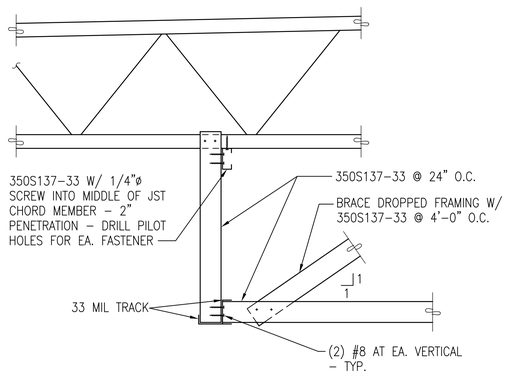
TYPICAL CONNECTION AT TOP OF NON–BEARING WALL EXTENDING TO ROOF STRUCTURE PERPENDICULAR TO JOISTS

7 S2.4 **SECTION** NO SCALE



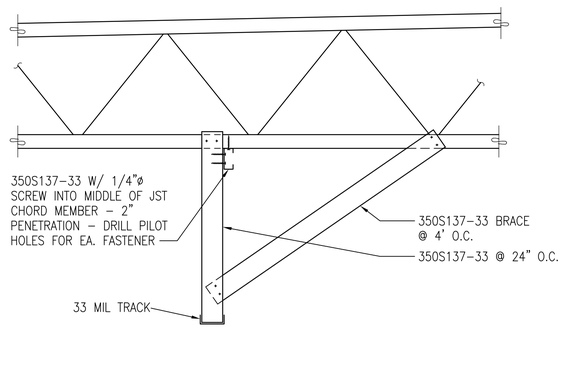
TYPICAL CEILING FRAMING PARALLEL TO JOISTS

8 S2.4 **DETAIL** 1"=1'–0"



TYPICAL CEILING FRAMING PERPENDICULAR TO JOISTS

9 S2.4 **DETAIL** 1"=1'–0"



TYPICAL BULKHEAD FRAMING

10 S2.4 **DETAIL** 1"=1'–0"

CLIENT: bp ARCO BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

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Kent, WA 98032
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barghausen.com

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SEAL: STEPHEN JOSEPH WILLIAMS — STATE OF WASHINGTON — 55281 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

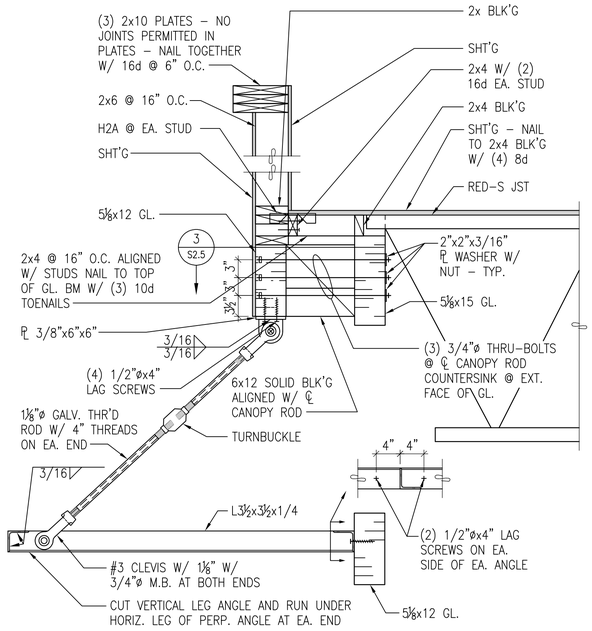
SITE ADDRESS:
1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	SJW	ALLIANCE ZAOM:	
CHECKED BY:	SJW	BP REPM:	
DRAWN BY:	SAA	ALLIANCE PM:	
VERSION:	- -	PROJECT NO:	21730

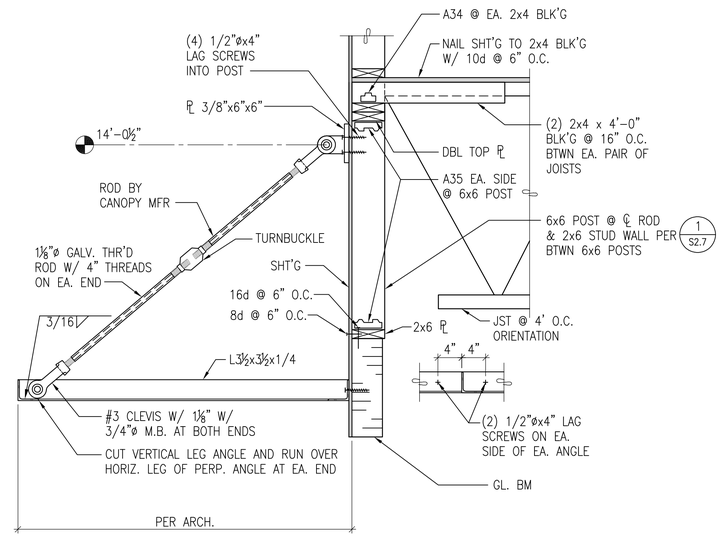
DRAWING TITLE: **DETAILS**

SHEET NO: **S2.4**



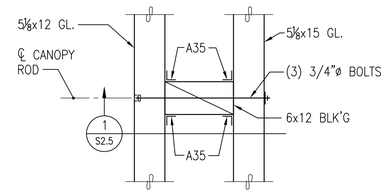
TYPICAL AT ENTRY CANOPY

1 S2.5 **SECTION**
1" = 1'–0"

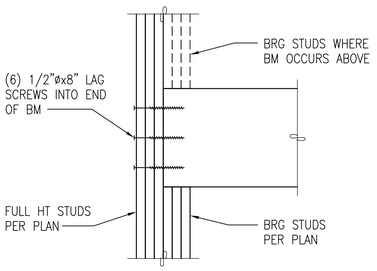


TYPICAL AT ENTRY CANOPY

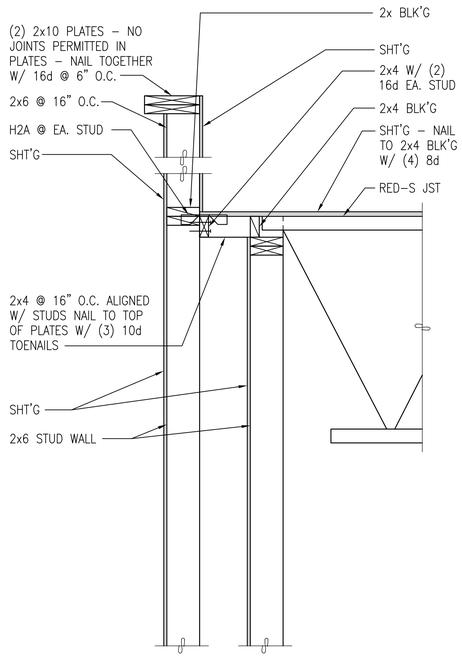
2 S2.5 **SECTION**
1" = 1'–0"



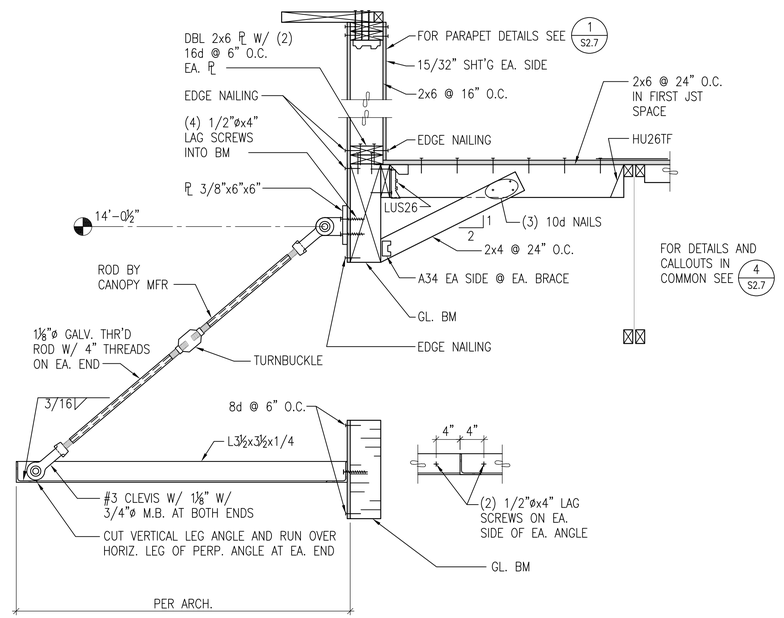
6 S2.5 **PLAN DETAIL**
1" = 1'–0"



4 S2.5 **DETAIL**
1" = 1'–0"



5 S2.5 **SECTION**
1" = 1'–0"



TYPICAL AT SIDE CANOPY

6 S2.5 **SECTION**
1" = 1'–0"

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

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SEAL:



PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

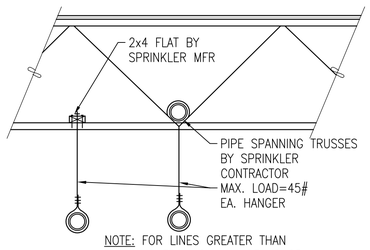
DESIGNED BY:	SJW	ALLIANCE ZAOM:	
CHECKED BY:	SJW	BP REPM:	
DRAWN BY:	SAA	ALLIANCE PM:	
VERSION:	- - -	PROJECT NO:	21730

DRAWING TITLE:

DETAILS

SHEET NO:

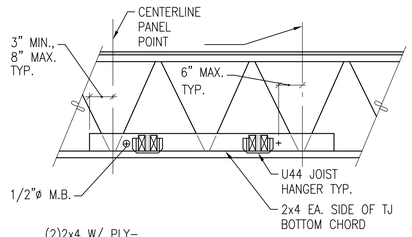
S2.5



NOTE: FOR LINES GREATER THAN 3"ø HANG FROM GLULAM BEAMS OR STUD WALL OR HANG PER DETAIL 2/S2.6 OR SUPPORT OFF WALLS WHEN SPECIFICALLY APPROVED BY STRUCTURAL ENGINEER

TYPICAL SPRINKLER LINE ATTACHMENT FOR LINES 3"ø OR SMALLER

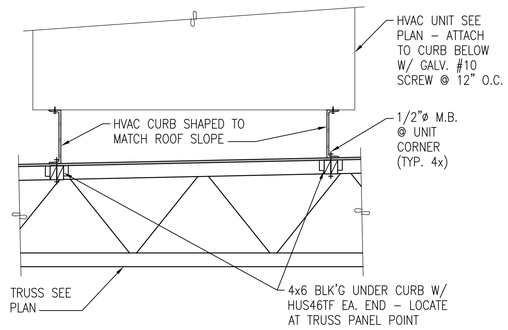
1/S2.6 **SECTION** NO SCALE



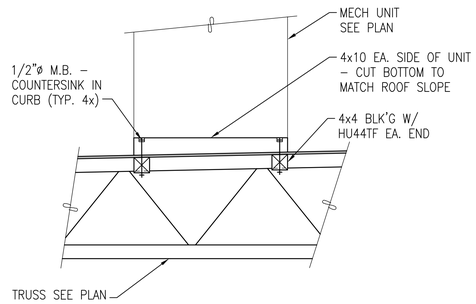
NOTES:
1. ALL FRAMING SHOWN BY GENERAL CONTRACTOR (EXCEPT BY SPRINKLER CONTRACTOR IF USED FOR SPRINKLER LINES.
2. DO NOT CUT OR DRILL THRU JOIST.

TYPICAL DETAIL FOR HANGING LOADS FROM OPEN WEB TRUSSES (ALL HEAT PUMPS, R FANS OR E FANS OVER 90#)

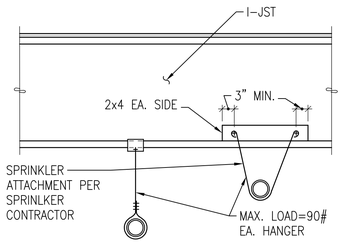
2/S2.6 **SECTION** NO SCALE



3/S2.6 **SECTION** 1"=1'-0"



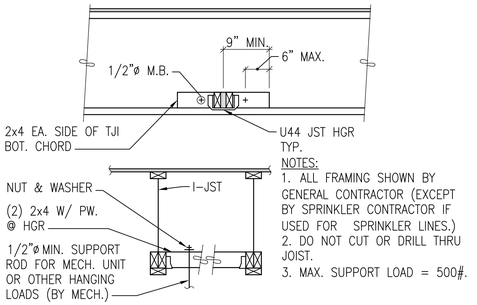
4/S2.6 **SECTION** NO SCALE



NOTE: FOR LINES GREATER THAN 3"ø HANG FROM GLULAM BEAMS OR STUD WALL OR HANG PER DETAIL 6/S2.6 OR SUPPORT OFF WALLS WHEN SPECIFICALLY APPROVED BY STRUCTURAL ENGINEER.

TYPICAL SPRINKLER LINE ATTACHMENT FOR LINES 3"ø OR SMALLER

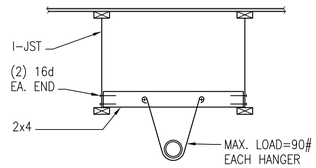
5/S2.6 **SECTION** NO SCALE



NOTES:
1. ALL FRAMING SHOWN BY GENERAL CONTRACTOR (EXCEPT BY SPRINKLER CONTRACTOR IF USED FOR SPRINKLER LINES.)
2. DO NOT CUT OR DRILL THRU JOIST.
3. MAX. SUPPORT LOAD = 500#.

TYPICAL DETAIL FOR HANGING LOADS FROM I-JOIST (ALL HEAT PUMPS, R FANS OR E FANS OVER 90#)

6/S2.6 **SECTION** NO SCALE



NOTE: FOR LINES GREATER THAN 3"ø HANG FROM GLULAM BEAMS OR STUD WALL OR HANG PER DETAIL OR SUPPORT OFF WALLS WHEN SPECIFICALLY APPROVED BY STRUCTURAL ENGINEER 6/S2.6

TYPICAL SPRINKLER LINE ATTACHMENT FOR LINES 3"ø OR SMALLER

7/S2.6 **SECTION** NO SCALE

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

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Kent, WA 98032
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SEAL:

STEPHEN JOSEPH WILLIAMS – STATE OF WASHINGTON – 55281 – STRUCTURAL ENGINEER – PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

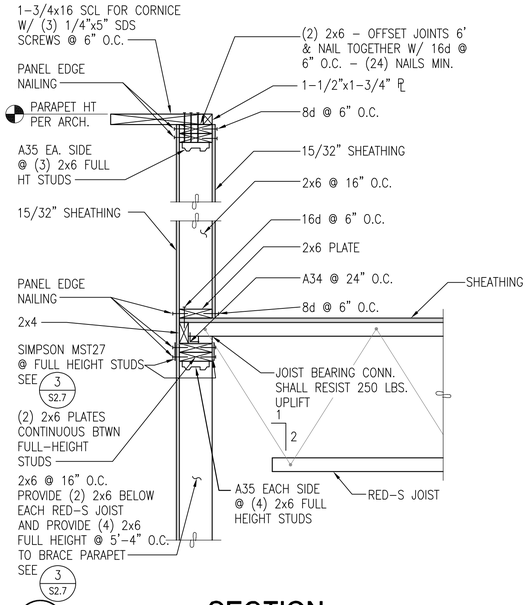
DESIGNED BY:	SJW	ALLIANCE ZADM:	
CHECKED BY:	SJW	BP REPM:	
DRAWN BY:	SAA	ALLIANCE PM:	
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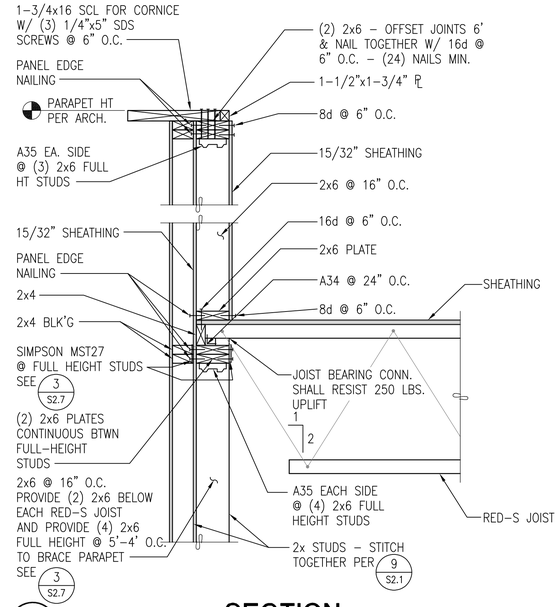
DETAILS

SHEET NO:

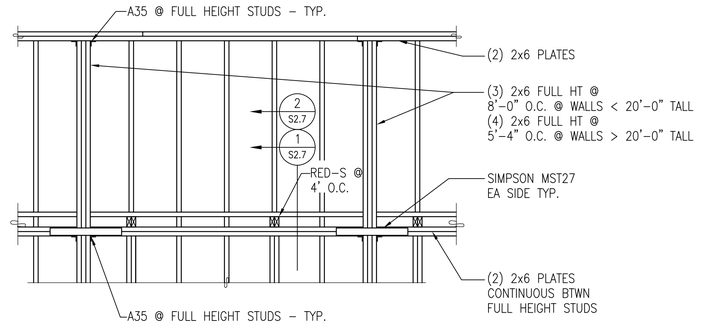
S2.6



1/S2.7 **SECTION**
1"=1'-0"



2/S2.7 **SECTION**
1"=1'-0"



3/S2.7 **SECTION**
1/2"=1'-0"

4/S2.7 **SECTION**
1"=1'-0"

5/S2.7 **SECTION**
1"=1'-0"

CLIENT:

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FACILITY #7184

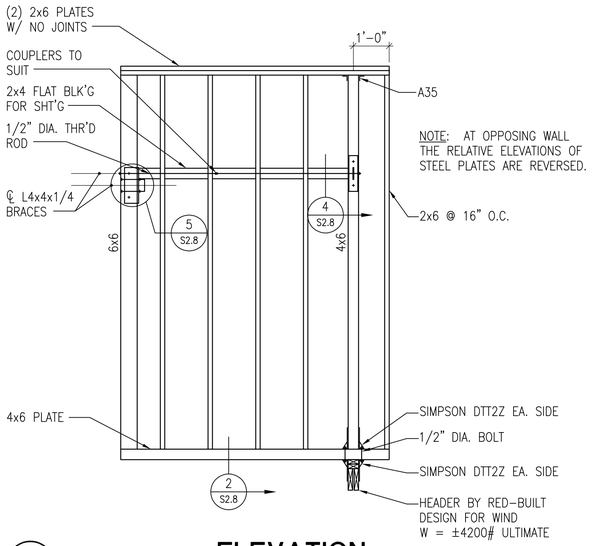
DESIGNED BY:	SJW	ALLIANCE Z&DM:	
CHECKED BY:	SJW	BP REPM:	
DRAWN BY:	SAA	ALLIANCE PM:	
VERSION:	- -	PROJECT NO:	21730

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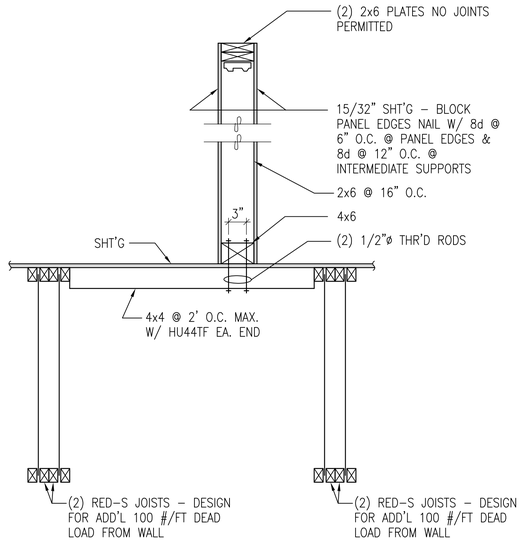
DETAILS

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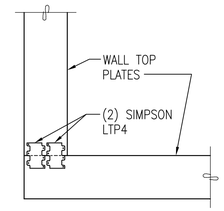
S2.7



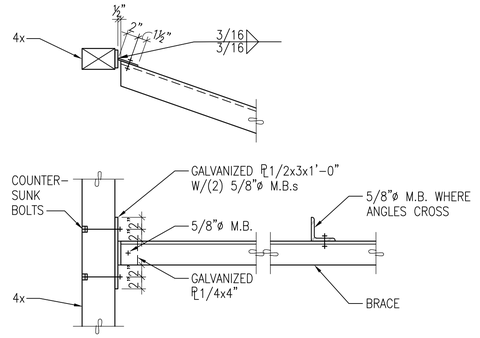
1 S2.8 **ELEVATION**
1/2"=1'-0"



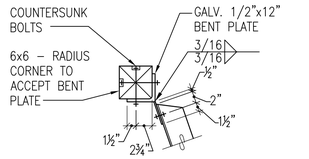
2 S2.8 **SECTION**
1"=1'-0"

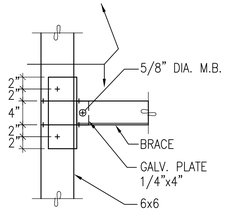


3 S2.8 **PLAN DETAIL**
1"=1'-0"



4 S2.8 **SECTION**
1"=1'-0"





5 S2.8 **SECTION**
1"=1'-0"

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen
Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
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SEAL:

STEVEN JOSEPH WILLIAMS
STATE OF WASHINGTON
55281
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

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PUYALLUP, WA 98371

FACILITY #7184

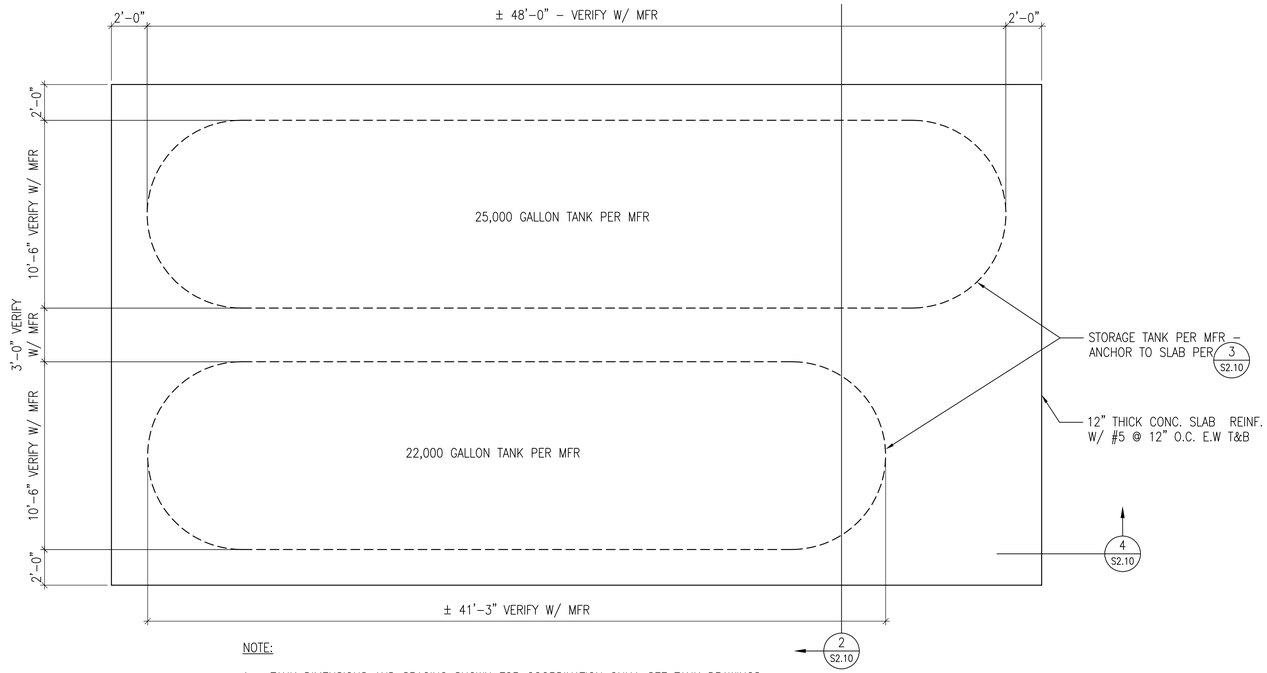
DESIGNED BY:	SJW	ALLIANCE ZAOM:	
CHECKED BY:	SJW	BP REPM:	
DRAWN BY:	SAA	ALLIANCE PM:	
VERSION:	- -	PROJECT NO:	21730

DRAWING TITLE:

DETAILS

SHEET NO:

S2.8



NOTE:

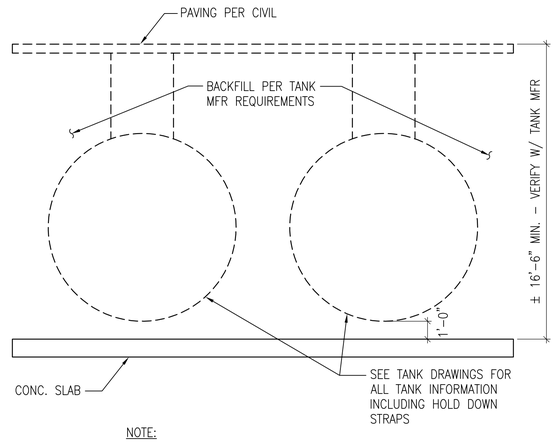
1. TANK DIMENSIONS AND SPACING SHOWN FOR COORDINATION ONLY. SEE TANK DRAWINGS FOR ALL TANK INFORMATION.

UNDERGROUND STORAGE TANK SLAB PLAN

PARTIAL PLAN

1/4"=1'-0"

1 S2.10



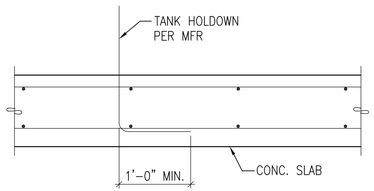
NOTE:

1. SEE TANK DRAWINGS FOR ALL TANK INFORMATION INCLUDING HOLD DOWN STRAPS

SECTION

1/4"=1'-0"

2 S2.10

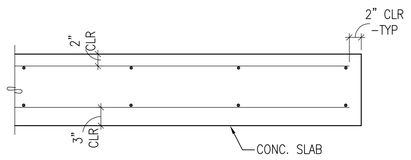


UNDERGROUND STORAGE TANK HOLD DOWN ANCHORAGE

PLAN DETAILS

NO SCALE

3 S2.10



UNDERGROUND STORAGE TANK REBAR PLACEMENT

PLAN DETAILS

NO SCALE

4 S2.10

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

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SEAL:

STEVEN JOSEPH WILLIAMS
STATE OF WASHINGTON
55281
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	SJW	ALLIANCE Z&DM:	
CHECKED BY:	SJW	BP REPM:	
DRAWN BY:	SAA	ALLIANCE PM:	
VERSION:	- -	PROJECT NO:	21730

DRAWING TITLE:

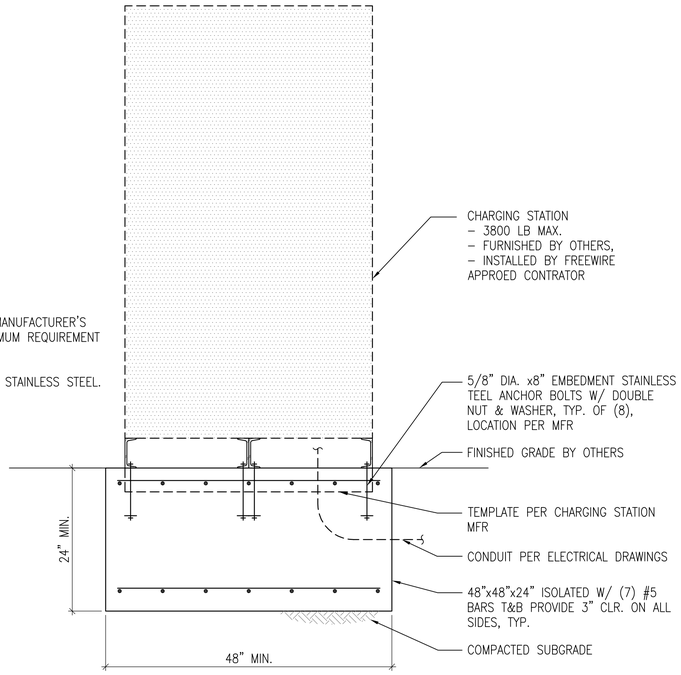
UNDERGROUND STORAGE TANK PLAN AND DETAILS

SHEET NO:

S2.10

NOTES:

1. INSTALL ANCHOR BOLT PER MANUFACTURER'S RECOMMENDATIONS WITH MINIMUM REQUIREMENT LISTED.
2. BOLTS TO BE F593 304/316 STAINLESS STEEL.



EV CHARGING STATION FOUNDAITON

1 / S2.11 **SECTION**

NO SCALE

CLIENT:

bp

ARCO

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SEAL:

JOSEPH WILLIAMS — STATE OF WASHINGTON — 55281 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

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CHECKED BY:	SJW	BP REPM:	
DRAWN BY:	SAA	ALLIANCE PM:	
VERSION:	- -	PROJECT NO:	21730

DRAWING TITLE:

RETAINING WALL AND EV CHARGING STATION DETAILS

SHEET NO:

S2.11

GENERAL NOTES

THESE GENERAL NOTES ARE TO BE USED AS A SUPPLEMENT TO THE SPECIFICATIONS. ANY DISCREPANCIES FOUND AMONG THE DRAWINGS, THE SPECIFICATIONS, THESE GENERAL NOTES AND THE SITE CONDITIONS SHALL BE REPORTED TO THE ARCHITECT, WHO SHALL CORRECT SUCH DISCREPANCY IN WRITING. ANY WORK DONE BY THE GENERAL CONTRACTOR AFTER DISCOVERY OF SUCH DISCREPANCY SHALL BE DONE AT THE GENERAL CONTRACTOR'S RISK. THE GENERAL CONTRACTOR SHALL VERIFY AND COORDINATE DIMENSIONS AMONG ALL DRAWINGS PRIOR TO PROCEEDING WITH ANY WORK OR FABRICATION. THE STRUCTURE HAS BEEN DESIGNED TO RESIST CODE SPECIFIED VERTICAL AND LATERAL FORCES AFTER THE CONSTRUCTION OF ALL STRUCTURAL ELEMENTS HAS BEEN COMPLETED. STABILITY OF THE STRUCTURE PRIOR TO COMPLETION IS THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THIS RESPONSIBILITY INCLUDES BUT IS NOT LIMITED TO JOB SITE SAFETY; ERECTION MEANS, METHODS, AND SEQUENCES; TEMPORARY SHORING, FORMWORK, BRACING; USE OF EQUIPMENT AND CONSTRUCTION PROCEDURES. PROVIDE ADEQUATE RESISTANCE TO LOADS ON THE STRUCTURES DURING CONSTRUCTION PER SEI/ASCE STANDARD NO. 37–14 "DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION."

CONSTRUCTION OBSERVATION BY THE STRUCTURAL ENGINEER IS FOR GENERAL CONFORMANCE WITH DESIGN ASPECTS ONLY AND IS NOT INTENDED IN ANY WAY TO REVIEW THE CONTRACTOR'S CONSTRUCTION PROCEDURES.

STANDARDS

ALL METHODS, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE 2018 INTERNATIONAL BUILDING CODE (IBC) AS AMENDED AND ADOPTED BY THE LOCAL BUILDING OFFICIAL OR APPLICABLE JURISDICTION.

CONTRACT DRAWINGS/DIMENSIONS

ARCHITECTURAL DRAWINGS ARE THE PRIME CONTRACT DRAWINGS. CONSULTANT DRAWINGS BY OTHER DISCIPLINES ARE SUPPLEMENTARY TO ARCHITECTURAL DRAWINGS. REPORT DIMENSIONAL OMISSIONS OR DISCREPANCIES BETWEEN ARCHITECTURAL DRAWINGS AND STRUCTURAL, MECHANICAL, ELECTRICAL OR CIVIL DRAWINGS TO ARCHITECT PRIOR TO PROCEEDING WITH WORK.

STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS. PRIMARY STRUCTURAL ELEMENTS ARE DIMENSIONED ON STRUCTURAL PLANS AND DETAILS AND OVERALL LAYOUT OF STRUCTURAL PORTION OF WORK. SOME SECONDARY ELEMENTS ARE NOT DIMENSIONED, SUCH AS WALL CONFIGURATIONS, INCLUDING EXACT DOOR AND WINDOW LOCATIONS, ALCOVES, SLAB SLOPES AND DEPRESSIONS, CURBS, ETC. VERTICAL DIMENSIONAL CONTROL IS DEFINED BY ARCHITECTURAL WALL SECTIONS AND BUILDING SECTIONS. STRUCTURAL DETAILS SHOW DIMENSIONAL RELATIONSHIPS TO CONTROL DIMENSIONS DEFINED BY ARCHITECTURAL DRAWINGS. DETAILING AND SHOP DRAWING PRODUCTION FOR STRUCTURAL ELEMENTS WILL REQUIRE DIMENSIONAL INFORMATION CONTAINED IN **BOTH** ARCHITECTURAL AND STRUCTURAL DRAWINGS.

DESIGN CRITERIA

VERTICAL LOADS

AREA	DESIGN DEAD LOAD (1)	LIVE LOAD	CONCENTRATED LOADS
ROOF	20 PSF	25 PSF	300#

1. INCLUDES UP TO 5 PSF OF ADDITIONAL DEAD LOAD FOR SOLAR READINESS

LATERAL FORCES

LATERAL FORCES ARE TRANSMITTED BY DIAPHRAGM ACTION OF ROOF TO SHEAR WALLS. LOADS ARE THEN TRANSFERRED TO FOUNDATION BY SHEAR WALL ACTION WHERE ULTIMATE DISPLACEMENT IS RESISTED BY PASSIVE PRESSURE OF EARTH AND/OR SLIDING FRICTION. OVERTURNING IS RESISTED BY DEAD LOAD OF THE STRUCTURE.

WIND:

THE BUILDING MEETS THE CRITERIA TO USE THE "ENCLOSED, PARTIALLY ENCLOSED, AND OPEN BUILDINGS OF ALL HEIGHTS PROCEDURE" PER ASCE 7–16.

- EXPOSURE CATEGORY = B
- BASIC WIND SPEED (3 SEC. GUST), V_{ULT} = 97 MPH
- RISK CATAGORY PER TABLE 1.5–1 = II
- TOPOGRAPHIC FACTOR Kzt = 1.0
- INTERNAL PRESSURE COEFFICIENT (ENCLOSED) = ± 0.18
- COMPONENTS AND CLADDING LOADS, SEE THE FOLLOWING TABLES:

ROOF SURFACES [1]					
EFFECTIVE WIND AREA	POSITIVE PRESSURES (PSF)	NEGATIVE PRESSURES (PSF)			
		ZONE [3]			
	ALL ZONES	1'	1	2	3
10 SF	16.0	–16.0	–21.9	–28.9	–39.4
20 SF	16.0	–16.0	–20.5	–27.0	–35.7
50 SF	16.0	–16.0	–18.5	–24.6	–30.7
100 SF	16.0	–16.0	–17.1	–22.7	–27.0

WALL SURFACES AND ROOF OVERHANGS [1]				
EFFECTIVE WIND AREA	POSITIVE PRESSURE (PSF)		NEGATIVE PRESSURE (PSF)	
	ZONE [2]			
	4	5	4	5
10 SF	16.0	16.0	–16.0	–18.4
20 SF	16.0	16.0	–16.0	–17.2
50 SF	16.0	16.0	–16.0	–16.0
100 SF	16.0	16.0	–16.0	–16.0
500 SF	16.0	16.0	–16.0	–16.0

1. VALUES SHOWN IN TABLE ARE GROSS ULTIMATE WIND PRESSURES.
2. WALL ZONES ARE AS DEFINED BY FIGURE 30.3–1 FOR ASCE 7–16 IN LOW RISE BUILDINGS.
3. ROOF ZONES ARE AS DEFINED BY FIGURES 30.3–2 THROUGH 30.3–7 IN ASCE 7–16 FOR LOW RISE BUILDINGS.

SEISMIC: (ASCE 7–16) V = CsW

WHERE $Cs = \frac{Sds}{(\frac{R}{Ie})}$; WITH

Cs MINIMUM = 0.044 SdsIe ≥ 0.01

OR

Cs MINIMUM = $\frac{0.5S_1}{\frac{R}{Ie}}$ FOR $S_1 > 0.6g$

Cs MAXIMUM = $\frac{Sd_1}{T(\frac{R}{Ie})}$ FOR $T \leq T_L$

OR

Cs MAXIMUM = $\frac{Sd_1T_L}{T2(\frac{R}{Ie})}$ FOR $T > T_L$

SEISMIC IMPORTANCE FACTOR, Ie = 1.0
RISK CATEGORY OF BUILDING PER TABLE 1.5–1 = II
SPECTRAL RESPONSE ACCELERATIONS Ss = 1.268 S_1 = 0.437
SITE CLASS PER TABLE 20.3–1 = F
DESIGN SPECTRAL RESPONSE ACCELERATIONS Sds = 0.845 & Sd_1 = 0.543
SEISMIC DESIGN CATEGORY = D
W = EFFECTIVE SEISMIC WEIGHT OF BUILDING = 109.2 KIPS
ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE PROCEDURE
RESPONSE MODIFICATION FACTOR PER TABLE 12.2–1, R = 6.5
Cs = 0.130
DESIGN BASE SHEAR V = 12.6 KIPS

PIPES, DUCTS AND MECHANICAL EQUIPMENT SUPPORTED OR BRACED FROM STRUCTURE. CONFORM TO SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION, INC. PUBLICATION "SEISMIC RESTRAINT MANUAL: GUIDELINES FOR MECHANICAL SYSTEMS". SPRINKLER LINE ATTACHMENTS SHALL CONFORM TO NFPA PAMPHLET 13.

FOUNDATION DESIGN CRITERIA (REFER TO GEOTECHNICAL ENGINEERING REPORT BY KRAZAN AND ASSOCIATES, INC. DATED MAY 6, 2023).

SOIL BEARING PRESSURE: 1500 PSF

PASSIVE RESISTANCE: 300 PCF (INCLUDES F.O.S. ≥ 1.5)
COEFFICIENT OF FRICTION: 0.35 (INCLUDES F.O.S. ≥ 1.5)
*1/3 INCREASE ALLOWED FOR SEISMIC OR WIND LOADING

ALL FOOTINGS SHALL BEAR ON DEEP FOUNDATIONS EXTENDING BELOW THE DEEPER LIQUEFIABLE SOILS. CONTRACTOR SHALL EXERCISE EXTREME CARE DURING EXCAVATION TO AVOID DAMAGE TO BURIED LINES, TANKS, AND OTHER CONCEALED ITEMS. UPON DISCOVERY, DO NOT PROCEED WITH WORK UNTIL RECEIVING WRITTEN INSTRUCTIONS FROM ARCHITECT. A COMPETENT REPRESENTATIVE OF THE OWNER SHALL INSPECT ALL FOOTING EXCAVATIONS FOR SUITABILITY OF BEARING SURFACES PRIOR TO PLACEMENT OF REINFORCING STEEL. PROVIDE DRAINAGE AND DEWATERING AROUND ALL WORK TO AVOID WATER–SOFTENED FOOTINGS.

SITE STRUCTURES BEARING ON SHALLOW FOUNDATIONS SHALL HAVE BEARING SOILS PREPARED PER THE GEOTECHNICAL REPORT. UNDOCUMENTED FILL AND SOFT NATIVE SOILS SHALL BE REMOVED TO A MINIMUM DEPTH OF TWO BELOW SPREAD FOOTINGS AND BACKFILLED WITH PROPERLY COMPACTED STRUCTURAL FILL.

STEEL PIPE PILES

PIPE PILES: 8" NOMINAL DIAMETER GALVANIZED SCHEDULE 40 = 25K ALLOWABLE AXIAL COMPRESSION.

4' MINIMUM EMBED INTO UNDERLYING DENSE TO VERY DENSE SAND AND GRAVEL OR AS OTHERWISE APPROVED BY GEOTECHNICAL ENGINEER BASED ON OBSERVATIONS DURING PILE DRIVING, WHICHEVER IS DEEPER.

TESTING: ALLOWABLE LOADS TO BE VERIFIED BY LOAD TESTS IN ACCORDANCE WITH ASTM D–1143 "QUICK LOAD TEST". A MINIMUM OF 3% OF THE TOTAL PILES SHALL BE TESTED A MINIMUM OF ONE TIME AND MAXIMUM OF 5 TIMES PER PILE.

MATERIAL: PIPE PILES – ASTM A252 GR3 (Fy = 45 KSI).

TIP DESIGN: TIP DESIGN SHALL BE PER CONTRACTOR AND TAKE INTO CONSIDERATION INSTALLATION REQUIREMENTS.

INSTALLATION: INSTALL IN A TRUE VERTICAL POSITION. REFER TO THE GEOTECHNICAL REPORT TO DETERMINE THE GENERALIZED SUBSURFACE PROFILES, DRIVEABILITY, SOIL PROPERTIES, CONSTITUENTS, EXISTING SITE FEATURES AND CONDITIONS, AND LOAD TESTING PROTOCALS.

INDICATOR PILES: THE LENGTH OF THE PILE REQUIRED AND THE PILE INSTALLATION SHALL BE VERIFIED IN THE FIELD BY A QUALIFIED INSPECTOR WHO WILL EVALUATE THE CONTRACTOR'S OPERATION AND COLLECT, INTERPRET AND RECORD DATA. A MINIMUM OF TWO INDICATOR PILES SHALL BE DRIVEN BEFORE ORDERING PRODUCTION PILES TO ESTIMATE THE TRUE PILE LENGTHS AND DETERMINE DRIVING CHARACTERISTICS AND PROBLEMS. A QUALIFIED INSPECTOR SHALL EVALUATE INSTALLATION OF INDICATOR PILES.

CONCRETE

CAST–IN–PLACE CONCRETE

MIX DESIGNS: THE CONTRACTOR SHALL DESIGN CONCRETE MIXES THAT MEET OR EXCEED THE REQUIREMENTS OF THE CONCRETE MIX TABLE. THE MIX DESIGNS SHALL FACILITATE ANTICIPATED PLACEMENT METHODS, WEATHER, REBAR CONGESTION, ARCHITECTURAL FINISHES, CONSTRUCTION SEQUENCING, STRUCTURAL DETAILS, AND ALL OTHER FACTORS REQUIRED TO PROVIDE A STRUCTURALLY SOUND, AESTHETICALLY ACCEPTABLE FINISHED PRODUCT. WATER REDUCING ADMIXTURES WILL LIKELY BE REQUIRED TO MEET THESE REQUIREMENTS. CONCRETE MIX DESIGNS SHALL CLEARLY INDICATE THE TARGET SLUMP. SLUMP TOLERANCE SHALL BE ± 1–1/2 INCHES.

AGGREGATE: COARSE AND FINE AGGREGATE SHALL CONFORM TO ASTM C33

CEMENT: CEMENT SHALL CONFORM TO ASTM C150, TYPE II PORTLAND CEMENT, UNLESS NOTED OTHERWISE.

FLYASH: SHALL CONFORM TO ASTM C618 CLASS C OR F, MAXIMUM LOSS OF IGNITION SHALL BE 1.0%.

SLAG: GROUND GRANULATED BLAST–FURNACE (GGBF) SLAG SHALL CONFORM TO ASTM C989 GRADE 100 OR 120.

ALTERNATE MIX DESIGNS: VARIATIONS TO THE MIX DESIGN PROPORTIONS MAY BE ACCEPTED IF SUBSTANTIATED IN ACCORDANCE WITH ACI 318, CHAPTER 19. PROVIDE SUBMITTALS A MINIMUM OF TWO WEEKS PRIOR TO BID FOR DETERMINATION OF ACCEPTABILITY.

ADMIXTURES: ADMIXTURES SHALL BE BY MASTER BUILDERS, W.R. GRACE, OR PRE–APPROVED EQUAL. ALL MANUFACTURERS RECOMMENDATIONS SHALL BE FOLLOWED.

WATER: SHALL BE CLEAN AND POTABLE.

MAXIMUM CHLORIDE CONTENT: THE MAXIMUM WATER SOLUBLE CHLORIDE CONTENT SHALL NOT EXCEED 0.15% BY WEIGHT OF CEMENTITIOUS MATERIAL UNLESS NOTED OTHERWISE.

CONCRETE EXPOSED TO WEATHER: PROVIDE 5.0% TOTAL AIR CONTENT FOR ALL CONCRETE EXPOSED TO WEATHER. TOTAL AIR CONTENT IS THE SUM OF ENTRAINED AIR PROVIDED BY ADMIXTURES AND NATURALLY OCCURRING ENTRAPPED AIR. AIR CONTENT SHALL BE TESTED PRIOR TO BEING PLACED IN THE PUMP HOPPER OR BUCKET; IT IS NOT REQUIRED TO BE TESTED AT THE DISCHARGE END OF THE PUMP HOSE. THE TOLERANCE ON ENTRAPPED AIR SHALL BE +2.0% AND –1.5% WITH THE AVERAGE OF ALL TESTS NOT LESS THAN THE SPECIFIED AMOUNT.

TOTAL CEMENTITIOUS MATERIAL: THE SUM OF ALL CEMENT PLUS FLYASH AND SLAG. AT THE CONTRACTORS OPTION FLYASH OR SLAG MAY BE SUBSTITUTED FOR CEMENT BUT SHALL NOT EXCEED 25% BY WEIGHT OF TOTAL CEMENTITIOUS MATERIAL. IN NO CASE SHALL THE AMOUNT OF FLYASH OR SLAG BE LESS THAN REQUIRED BY THE CONCRETE MIX DESIGN TABLE. FOOTING MIXES SHALL CONTAIN NOT LESS THAN **5 SACKS** OF CEMENTITIOUS MATERIAL PER CUBIC YARD, ALL OTHER MIXES SHALL CONTAIN NOT LESS THAN **5–1/2 SACKS** OF CEMENTITIOUS MATERIAL PER CUBIC YARD, UNLESS NOTED OTHERWISE.

ITEM	DESIGN f'c (PSI) (AT 28 DAYS U.N.O.)	MAX. W/C RATIO	MIN. FLYASH OR SLAG (PCY)	AGGREGATEG RADING ASTM AASHTO	NOTES
SLABS ON GRADE – UNO	4000	0.45	100	57 OR 67	1
ARCHITECTURALLY EXPOSED SLABS ON GRADE	4000	0.45	100	57 OR 67	1, 2
FOUNDATIONS – UNO	3000	0.50	––	57 OR 67	
STEM WALLS AND OTHER WALLS EXPOSED TO EARTH OR WEATHER	4500	0.45	100	57 OR 67	
ALL OTHER CONCRETE	4000	0.50	––	57 OR 67	

CONCRETE MIX NOTES:

1. MAXIMUM WATER CONTENT 240 PCY.
2. THIS MIX SHALL CONTAIN 1 GALLON PER CY OF 'ECLIPSE' SHRINKAGE REDUCING ADD MIXTURE BY W.R. GRACE OR APPROVED ALTERNATE. FOR CONCRETE REQUIRING AN AIR ENTRAINMENT ADMIXTURE, "ECLIPSE PLUS" SHALL BE USED.

CONCRETE PLACEMENT

PLACE CONCRETE FOLLOWING ALL APPLICABLE ACI RECOMMENDATIONS. CONCRETE SHALL BE PROPERLY CONSOLIDATED PER ACI 309 USING INTERIOR MECHANICAL VIBRATORS, DO NOT OVER–VIBRATE. CONCRETE SHALL BE POURED MONOLITHICALLY BETWEEN CONSTRUCTION OR EXPANSION JOINTS. IF CONCRETE IS PLACED BY THE PUMP METHOD, HORSES SHALL BE PROVIDED TO SUPPORT THE HOSE, THE HOSE SHALL NOT BE ALLOWED TO RIDE ON THE REINFORCING. WEATHER FORECASTS SHALL BE MONITORED AND ACI RECOMMENDATIONS FOR HOT AND COLD WEATHER CONCRETING SHALL BE FOLLOWED AS REQUIRED. CONCRETE SHALL NOT FREE FALL MORE THAN 5 FEET DURING PLACEMENT WITHOUT WRITTEN APPROVAL OF STRUCTURAL ENGINEER.

FLOATING & FINISHING OPERATIONS:

WATER SHALL NOT BE ADDED TO THE CONCRETE SURFACE DURING FLOATING & FINISHING OPERATIONS. PRE–APPROVED EVAPORATION RETARDER SPECIFICALLY DESIGNED FOR FLOATING & FINISHING OPERATIONS ARE ACCEPTABLE.

FORMED SURFACES:

FORMWORK CLASS OF SURFACE PER ACI TABLE 347 TABLE 3.1	
ITEM	CLASS OF FINISH
ALL SURFACES EXPOSED TO PUBLIC VIEW, UNLESS NOTED OTHERWISE	A
ALL SURFACES RECEIVING A COURSE TEXTURED COATING SUCH AS PLASTER OR STUCCO, UNLESS NOTED OTHERWISE	B
ALL OTHER SURFACES, UNLESS NOTED OTHERWISE	C

COLD WEATHER PLACEMENT

1. COLD WEATHER IS DEFINED BY ACI 306 AS "A PERIOD WHEN FOR MORE THAN 3 SUCCESSIVE DAYS THE MEAN DAILY TEMPERATURE DROPS BELOW 40° F."
2. NO CONCRETE SHALL BE PLACED ON FROZEN OR PARTIALLY FROZEN GROUND. THAWING THE GROUND WITH HEATERS IS PERMISSIBLE.
3. CONCRETE MIX TEMPERATURES SHALL BE AS SHOWN BELOW. HEATING OF WATER AND/OR AGGREGATES MAY BE REQUIRED TO ATTAIN THESE TEMPERATURES.
4. THE CONCRETE MAY REQUIRE PROTECTION FOR 4–7 DAYS AFTER POURING. IF TEMPERATURES REMAIN BELOW FREEZING, INSULATING BLANKET COVERAGE IS REQUIRED. IF TEMPERATURES ARE SLIGHTLY BELOW FREEZING (30° F MIN.) AT NIGHT AND ABOVE FREEZING DURING THE DAY, KRAFT PAPER WITH COMPLETE COVERAGE MAY BE USED IN LIEU OF INSULATED BLANKETS.
5. NO ADDITIVES CONTAINING CHLORIDES SHALL BE USED. USE "POZZUTEC 20+" BY MASTER BUILDERS OR "POLARSET" BY W.R. GRACE OR PRE–APPROVED EQUAL.

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SEAL:
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GENERAL NOTES

SHEET NO:
S3.1

CONDITION OF PLACEMENT AND CURING		WALLS & SLABS	FOOTINGS
MIN. TEMP. FRESH CONCRETE AS MIXED FOR WEATHER INDICATED. DEGREES F.	ABOVE 30° F. 0 TO 30° F. BELOW 0° F.	60° 65° 70°	55° 60° 65°
MIN. TEMP. FRESH CONCRETE AS PLACED AND MAINTAINED, DEGREES F.		55°	50°
MAX. ALLOWABLE GRADUAL DROP IN TEMP. THROUGHOUT FIRST 24 HOURS AFTER END OF PROTECTION, DEGREES F.		50°	40°

HOT OR WINDY WEATHER PLACEMENT

HOT WEATHER IS DEFINED BY ACI 305 AS "ANY COMBINATION OF HIGH AIR TEMPERATURE, LOW RELATIVE HUMIDITY, AND WIND VELOCITY, TENDING TO IMPAIR THE QUALITY OF FRESH HARDENED CONCRETE.. ACI 305 FIGURE 2.1.5 SHALL BE USED BY THE CONTRACTOR TO ESTIMATE THE RATE OF EVAPORATION. WHEN THE ESTIMATED RATE OF EVAPORATION IS GREATER THAN 0.2 PSF/HOUR THE PLACEMENT SHALL BE CONSIDERED A HOT WEATHER PLACEMENT. PRECAUTIONS AGAINST PLASTIC SHRINKAGE CRACKING ARE NECESSARY. PRECAUTIONS TAKEN BY THE CONTRACTOR VARY DEPENDING UPON THE FACTORS ASSOCIATED WITH WATER EVAPORATION AND INCLUDE BUT ARE NOT LIMITED TO:

1. LIMITING CONCRETE TEMPERATURE TO 100°F AT TIME OF PLACEMENT.
2. APPLICATION OF AN EVAPORATION RETARDER.
3. USE OF FOG SPRAY.
4. REDUCTION OF POUR SIZE.
5. PLACING CONCRETE AT NIGHT.

CONTROL AND CONSTRUCTION JOINTS

CONSTRUCTION JOINTS SHALL MEET THE REQUIREMENTS OF ACI 301 SECTIONS 2.2.2.5 AND 5.3.2.6. SPECIAL BONDING METHODS PER SECTION 5.3.2.6 SHALL BE SATISFIED BY ITEM 4 BELOW UNLESS OTHERWISE DETAILED ON THE STRUCTURAL DRAWINGS. WHERE CONSTRUCTION JOINTS ARE NOT SHOWN ON PLAN OR ADDITIONAL CONSTRUCTION JOINTS ARE REQUIRED SUBMIT PROPOSED JOINTING FOR STRUCTURAL ENGINEERS APPROVAL. PROVIDE CONSTRUCTION JOINTS AS INDICATED BELOW UNLESS NOTED OTHERWISE ON THE PLANS:

1. SLABS ON GRADE. PROVIDE CONSTRUCTION AND/OR CONTROL JOINTS AT 16 FEET O.C. MAXIMUM FOR UNEXPOSED SLABS ON GRADE AND 12 FEET O.C. FOR EXPOSED SLABS ON GRADE. COORDINATE JOINTS WITH ARCHITECTURAL DRAWINGS.
2. BONDING AGENT. WHERE BONDING AGENT IS SPECIFICALLY CALLED OUT ON THE STRUCTURAL DRAWINGS USE "WELD CRETE" BY LARSON PRODUCTS CORPORATION OR PRE-APPROVED EQUAL. FOLLOW ALL MANUFACTURERS RECOMMENDATIONS.
3. ATTACHMENT OF NEW CONCRETE TO EXISTING: WHERE SHOWN, ROUGHEN CONCRETE TO A MINIMUM AMPLITUDE OF 1/4" USING IMPACT HAMMER. REMOVE ALL LOOSE OR DAMAGED CONCRETE, THOROUGHLY FLUSH ALL SURFACES WITH POTABLE WATER, AIR BLAST WITH OIL FREE COMPRESSED AIR TO REMOVE ALL WATER.

EMBEDDED ITEMS

1. NO ALUMINUM ITEMS SHALL BE EMBEDDED IN ANY CONCRETE.
2. ALL EMBED PLATES SHALL BE SECURELY FASTENED IN PLACE.
3. ALL EMBEDDED STEEL ITEMS EXPOSED TO EARTH SHALL BE GALVANIZED.
4. ALL EMBEDDED STEEL ITEMS EXPOSED TO WEATHER SHALL BE PAINTED UNLESS NOTED AS GALVANIZED. SEE DRAWINGS AND SPECIFICATIONS FOR PAINT, PRIMER, AND GALVANIZING REQUIREMENTS.

CONCRETE CURING AND SEALING

CURING PROCEDURES SHALL COMMENCE IMMEDIATELY AFTER FINISHING CONCRETE TO MAINTAIN CONCRETE IN A MOIST CONDITION. VERIFY CURING AND/OR SEALING PRODUCTS ARE COMPATIBLE WITH FLOOR COVERINGS SHOWN ON THE ARCHITECTURAL DRAWINGS. FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS. SLABS ARE DEFINED AS SLABS ON GRADE, CONCRETE ON METAL DECK, ELEVATED POST-TENSIONED OR MILD REINFORCED DECKS, AND TOPPING SLABS

ITEM	CONCRETE CURING NOTES
SLABS EXPOSED TO EARTH OR WEATHER OR VEHICLE OR FORKLIFT TRAFFIC INCLUDING LOADING DOCKS	1, (3 OR 4 OR 5), 6
ALL OTHER SLABS	1, (3 OR 4 OR 5)
FORMED SURFACES EXCLUDING FOUNDATIONS	2
ALL OTHER CONCRETE	NONE

CONCRETE CURING NOTES:

1. WHEN THE ESTIMATED EVAPORATION RATE IS GREATER THAN 0.2 PSF/HOUR, PROVIDE A SPRAY APPLIED EVAPORATION RETARDER IMMEDIATELY AFTER CONCRETE PLACEMENT. THE EVAPORATION RATE MAY BE CALCULATED PER ACI 305 FIGURE 2.1.5.
2. APPLY A LIQUID MEMBRANE FORMING CURING COMPOUND, CONFORMING TO ASTM C309 TYPE 1 CLASS B SPECIFICATIONS, PER MANUFACTURERS RECOMMENDATIONS TO ALL FORMED SURFACES IMMEDIATELY AFTER FORM REMOVAL. NOT REQUIRED IF FORMWORK REMAINS IN PLACE FOR MORE THAN 7 DAYS.
3. PROVIDE PRE-APPROVED CONTINUOUS WET CURE METHOD FOR A MINIMUM OF 14 DAYS.
4. APPLY A LIQUID MEMBRANE FORMING CURING COMPOUND, CONFORMING TO ASTM C309 TYPE 1 CLASS B SPECIFICATIONS OR ASTM C1315 TYPE 1 CLASS A SPECIFICATIONS, PER MANUFACTURERS RECOMMENDATIONS IMMEDIATELY AFTER FINAL FINISHING. CURING COMPOUND SHALL BE COMPATIBLE WITH ARCHITECTURAL FLOOR COVERINGS AND SEALERS.
5. PROVIDE 'ULTRACURE MAX' MOISTURE RETAINING COVER BY MCTECH GROUP, OR APPROVED EQUAL, FOR A MINIMUM OF 14 DAYS.
6. APPLY A SILANE SEALER WITH MINIMUM SOLIDS CONTENT OF 40% PER MANUFACTURERS RECOMMENDATIONS.

GROUT

NON-SHRINK GROUT: MASTER BUILDERS "MASTERFLOW 928" OR PRE-APPROVED EQUAL. GROUT SHALL CONFORM TO CRD-C621 AND ASTM C1107 WHEN TESTED AT A FLUID CONSISTENCY PER CRD- C611-85 FOR 30 MINUTES. GROUT MAY BE PLACED FROM A 25 SECOND FLOW TO A STIFF PACKING CONSISTENCY. FILL OR PACK ENTIRE SPACE UNDER PLATES OR SHAPES. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR PREPARATION, INSTALLATION, AND CURING.

REINFORCING STEEL

REINFORCING STEEL SHALL CONFORM TO:

ASTM A615, GRADE 60 TYPICAL UNLESS NOTED OTHERWISE.

DETAIL FABRICATE AND PLACE PER ACI 315 AND ACI 318.

WELDED WIRE REINFORCEMENT SHALL CONFORM TO ASTM A185. LAP ONE FULL MESH ON SIDES AND ENDS, BUT NOT LESS THAN 8 INCHES. WELDED WIRE REINFORCING SHALL BE SUPPORTED TO WITHSTAND CONCRETE PLACEMENT. PULLING OF MESH INTO PLACE AFTER PLACEMENT IS NOT ALLOWED.

REINFORCING SPLICE AND DEVELOPMENT LENGTH SCHEDULE, Fy=60 KSI (UNLESS NOTED OTHERWISE)

BAR SIZE	MINIMUM LAP SPLICE LENGTHS ("Ls")		MINIMUM DEVELOPMENT LENGTHS ("Ld")		MINIMUM EMBEDMENT LENGTH FOR STANDARD END HOOKS ("Ldh")
	TOP BARS (1)	OTHER BARS	TOP BARS (1)	OTHER BARS	
#3	2'-0"	1'-6"	1'-6"	1'-3"	0'-7"
#4	2'-8"	2'-0"	2'-0"	1'-7"	0'-9"
#5	3'-4"	2'-7"	2'-7"	2'-0"	1'-0"
#6	4'-0"	3'-1"	3'-1"	2'-4"	1'-2"
#7	5'-10"	4'-6"	4'-6"	3'-6"	1'-5"
#8	6'-8"	5'-2"	5'-2"	3'-11"	1'-7"

SPLICE TABLE NOTE:

1. "TOP BARS" ARE HORIZONTAL BARS WITH MORE THAN 12" DEPTH OF CONCRETE CAST BELOW THEM.

REINFORCING STEEL COVER

PROVIDE CONCRETE COVER OVER REINFORCEMENT AS FOLLOWS, UNLESS NOTED OTHERWISE.

CONCRETE CAST AGAINST EARTH ---------- 3"
EXPOSED TO WEATHER OR EARTH ---------- 2"
WALLS AND SLABS NOT EXPOSED TO WEATHER---- 3/4"

POST-INSTALLED ANCHORS

POST-INSTALLED ANCHORS: SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE STRUCTURAL ENGINEER PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS. CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH REBAR. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS. INSTALLER SHALL BE QUALIFIED AND TRAINED BY THE MANUFACTURER. HOLES SHALL BE HAMMER DRILLED ONLY (ROTARY DRILLED ONLY AT UNREINFORCED MASONRY - NO HAMMER TOOLS).

SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE SPECIFIED BELOW, SHALL BE SUBMITTED FOR APPROVAL A MINIMUM OF 2 WEEKS PRIOR TO BID, ALONG WITH CALCULATIONS THAT ARE PREPARED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER (LICENSED IN THE STATE IN WHICH THE PROJECT OCCURS) DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARD(S) AS REQUIRED BY THE BUILDING CODE.

CONCRETE ANCHORS:

- ADHESIVE ANCHORS: HILTI HIT-HY 200 (ICC-ESR-3187), HILTI HIT-RE 500 V3 (ICC-ESR-3814), DEWALT PURE 110+ (ICC-ESR-3298) OR SIMPSON SET-3G (ICC-ESR-4057) OR PRE-APPROVED EQUAL.
  - *CONCRETE SHALL BE A MINIMUM OF 21 DAYS OLD AT TIME OF INSTALLATION.
  - *CONCRETE SHALL BE IN THE TEMPERATURE RANGE AS REQUIRED BY THE CONCRETE MANUFACTURER.
  - *HOLE SHALL BY HAMMER-DRILLED ONLY. *DO NOT INSTALL IN WATER-FILLED HOLES.
  - *INSTALLER OF HORIZONTAL OR UPWARDLY INCLINED (ANY POSITION EXCEPT DIRECTLY DOWNWARD) ANCHORS SHALL ALSO BE CERTIFIED BY THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM.
- EXPANSION ANCHORS: KWIKBOLT TZ (ICC ESR-1917) BY HILTI, INC., OR PRE-APPROVED EQUAL.
- SCREW ANCHORS: KWIK HUS-EZ (ICC ESR-3027) BY HILTI, INC., OR PRE-APPROVED EQUAL.

STRUCTURAL STEEL

DETAILING, FABRICATION AND ERECTION

ALL WORKMANSHIP SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION, 15TH EDITION, THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS JULY 7, 2016, THE AISC CODE OF STANDARD PRACTICE, JUNE 15, 2016 AND THE AISC SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS, JULY 12, 2016.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ERECTION AIDES AND JOINT PREPARATIONS THAT INCLUDE BUT ARE NOT LIMITED TO, ERECTION ANGLES, LIFT HOLES, AND OTHER AIDES, WELDING PROCEDURES, REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, WELD EXTENSION TABS, COPES, SURFACE ROUGHNESS VALUES AND TAPERS OF UNEQUAL PARTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLIANCE WITH ALL CURRENT OSHA REQUIREMENTS.

HOLES, COPES OR OTHER CUTS OR MODIFICATIONS OF THE STRUCTURAL STEEL MEMBERS SHALL NOT BE MADE IN THE FIELD WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.

MATERIAL PROPERTIES

SHAPES AND PLATES: ASTM A36 (Fy = 36 KSI) TYP. U.N.O.; ASTM A572 (Fy = 50 KSI) WHERE INDICATED

HOLLOW STRUCTURAL SECTIONS: RECTANGULAR & SQUARE - ASTM A500 GRADE C (Fy = 50 KSI) ROUND - ASTM A500 GRADE C (Fy = 46 KSI)

STRUCTURAL STEEL PIPES : ASTM A53, GRADE B, TYPE E OR S (Fy = 35 KSI)

MACHINE BOLTS (M.B.): ASTM A307, GRADE A

ANCHOR BOLTS (A.B.): ASTM F1554, GRADE 55, UNLESS NOTED OTHERWISE, ASTM F1554, GRADE 105 WHERE INDICATED.

WELDING

STRUCTURAL STEEL: WELD IN ACCORDANCE WITH "STRUCTURAL WELDING CODE" AWS D1.1.

CERTIFICATION: ALL WELDING SHALL BE PERFORMED BY WABO/AWS CERTIFIED WELDERS. WELDERS SHALL BE PREQUALIFIED FOR EACH POSITION AND WELD TYPE WHICH THE WELDER WILL BE PERFORMING.

WELD TABS (ALSO KNOWN AS WELD "EXTENSION" TABS OR "RUN OFF" TABS) SHALL BE USED. AFTER THE WELD HAS BEEN COMPLETED THE WELD TABS SHALL BE REMOVED AND THE WELD END GROUND TO A SMOOTH CONTOUR. WELD "DAMS" OR "END DAMS" SHALL NOT BE USED.

THE PROCESS CONSUMABLES FOR ALL WELD FILLER METAL INCLUDING TACK WELDS, ROOT PASS AND SUBSEQUENT PASSES DEPOSITED IN A JOINT SHALL BE COMPATIBLE.

ALL WELD FILLER METAL AND WELD PROCESS SHALL PROVIDE THE TENSILE STRENGTH AND CHARPY V-NOTCH RATINGS AS FOLLOWS:

GRAVITY FRAME

WELD TYPE	FILLER METAL TENSILE STRENGTH	CHARPY V-NOTCH (CVN) RATING
FILLET	70 KSI	-----
PARTIAL PENETRATION	70 KSI	-----
COMPLETE PENETRATION	70 KSI	20 FT-LBS @ 40 DEG F

WELDED CONNECTIONS INSPECTION:

1. ALL WELDING SHALL BE CHECKED BY VISUAL MEANS AND BY OTHER METHODS DEEMED NECESSARY BY THE WELDING INSPECTOR.

THE STANDARDS OF ACCEPTANCE FOR WELDS TESTED BY ULTRASONIC METHODS SHALL CONFORM TO AWS D1.1.

ALL WELDS FOUND TO BE DEFECTIVE SHALL BE REPAIRED AND REINSPECTED BY THE SAME METHODS ORIGINALLY USED, AND THIS REPAIR AND REINSPECTION SHALL BE PAID FOR BY THE CONTRACTOR.

GENERAL REQUIREMENTS

BOLTED CONNECTIONS INSPECTION: CONNECTIONS MADE WITH BEARING TYPE BOLTS SHALL BE INSPECTED PER SECTION 9.1.

ADHESIVE ANCHOR RODS: ASTM F1554, GRADE 36 UNLESS NOTED OTHERWISE.

HEADED STUDS: SHALL BE "H4L HEADED CONCRETE ANCHORS" FOR STUDS 5/8" DIAMETER AND SMALLER AND "S3L SHEAR CONNECTORS" FOR STUDS 3/4" DIAMETER AND LARGER AS MANUFACTURED BY NELSON STUD WELDING, INC. OR PRE-APPROVED EQUAL AND SHALL CONFORM TO AWS D1.1. ALL HEADED STUDS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS USING A NELSON WELD GUN, UNLESS NOTED OTHERWISE ON DETAILS. ALL WELDS SHALL BE MADE AND INSPECTED IN ACCORDANCE WITH AWS D1.1.

FINISH: STRUCTURAL STEEL SHALL BE PRIMER PAINTED, UNLESS NOTED OTHERWISE, AND SHALL BE CLEAN OF LOOSE RUST, LOOSE MILL SCALE, OIL, GREASE AND OTHER FOREIGN SUBSTANCES AND SHALL MEET THE REQUIREMENTS OF SSPC-SP1. WHERE STRUCTURAL STEEL IS NOTED TO BE PAINTED, ALL AREAS COMPRISING THE FAYING SURFACES OF BOLTED CONNECTIONS MADE WITH SLIP-CRITICAL TYPE BOLTS (A325SC OR A490SC) SHALL COMPLY WITH THE REQUIREMENTS OF THE RCSC SPECIFICATION. WHERE STRUCTURAL STEEL IS NOTED TO BE GALVANIZED, IT SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123, A384, AND A385. ALL SURFACES WITHIN TWO INCHES OF ANY FIELD WELD LOCATION SHALL BE FREE OF MATERIALS THAT WOULD PREVENT PROPER WELDING OR PRODUCE OBJECTIONABLE FUMES. FIELD TOUCH-UP OF PRIMED, PAINTED, AND GALVANIZED SURFACES SHALL BE PERFORMED TO REPAIR COATING ABRASIONS, AS WELL AS TO PROTECT ALL AREAS AT CONNECTIONS.

CARPENTRY :

NAILS: CONNECTION DESIGNS ARE BASED ON NAILS WITH THE FOLLOWING PROPERTIES:

PENNYWEIGHT	DIAMETER (INCHES)	LENGTH (INCHES)
8d	0.131	2-1/2
10d	0.148	3
16d	0.148	3-1/2
20d	0.192	4

ALL NAILS AND STAPLES SHALL CONFORM TO ASTM F1667 INCLUDING SUPPLEMENT 1. FOR DIAPHRAGM OR SHEAR WALL NAILING THE FOLLOWING FASTENER TYPES MAY BE USED AT EQUIVALENT SPACING TO THAT SPECIFIED ON PLANS.

FASTENER TYPE	DIAMETER (INCHES)	LENGTH (INCHES)	EQUIVALENT SPACING (INCHES)		
8d COMMON WIRE	0.131	2-1/2	6	4	3
8d "DIPPED GALV. BOX"	0.131	2-1/2	6	4	3
8d "SHINY BOX"	0.113	2-1/2	4-1/2	3	2-1/2
14 GA. STAPLES	0.080	1-1/2*	6	4	3
16 GA STAPLES	0.072	1-1/2*	5	3	-
10d COMMON WIRE	0.148	3	6	4	3
10d "HOT DIPPED GALV. BOX"	0.148	3	6	4	3
10d "SHINY BOX"	0.131	3	4-1/2	3	2-1/4
16d COMMON WIRE	0.162	3-1/2	6	4	3
16d SINKER NAIL	0.148	3-1/4	5	3-1/4	2-1/2

* BASED ON 15/32" PLYWOOD OR OSB.

WOOD SHEATHING (STRUCTURAL): SHEATHING ON ROOF SURFACES SHALL BE PLYWOOD ONLY. SHEATHING ON FLOOR AND WALLS SHALL BE PLYWOOD OR ORIENTED STRAND BOARD (OSB). PLYWOOD SHEATHING SHALL BE 5-PLY MINIMUM WHERE INDICATED AS PERFORMANCE CATAGORY 3/4" OR THICKER. WOOD SHEATHING SHALL BE "STRUCTURAL I" CONFORMING TO PS1-09 AND/OR PS2-10. ALL PANELS SHALL BEAR THE STAMP OF AN APPROVED GRADING AGENCY. SPAN RATING SHALL BE PROVIDED AS FOLLOWS: ROOF FRAMING AT 48" O.C. (48/24); ROOF FRAMING AT 24"O.C. (32/16); WALLS (32/16); ALL WOOD SHEATHED WALLS SHALL BE BLOCKED AT ALL PANEL EDGES UNLESS NOTED OTHERWISE.

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen
Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
-	10/17/23	BID SET
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SEAL:

STEVEN JOSEPH WILLIAMS
STATE OF WASHINGTON
55281
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	SJW	ALLIANCE Z&DM:	
CHECKED BY:	SJW	BP REPM:	
DRAWN BY:	SAA	ALLIANCE PM:	
VERSION:	- -	PROJECT NO:	21730

DRAWING TITLE:

GENERAL NOTES

SHEET NO:

S3.2

GLUE–LAMINATED MEMBERS: CONFORM TO ANSI/AITC A190.1. MEMBERS SHALL BE COMBINATION 24F–V4 DOUGLAS FIR (DF) FOR SIMPLE SPANS; AND 24F–V8 DF FOR CANTILEVERED AND/OR CONTINUOUS SPANS (Fb=2400 PSI, Fv=265 PSI, E=1.8X10^6 PSI); AND DF COMBINATION 2 FOR COLUMNS.

ARCHITECTURAL APPEARANCE GRADE WHERE EXPOSED TO VIEW; INDUSTRIAL APPEARANCE WHERE NOT EXPOSED TO VIEW. ALL MEMBERS TO HAVE EXTERIOR GLUE AND HAVE AN APPROVED GRADE STAMP. CAMBER AS SHOWN ON STRUCTURAL DRAWINGS.

FRAMING LUMBER: STANDARDS. EACH PIECE SHALL BEAR THE GRADE TRADEMARK OF THE WEST COAST LUMBER INSPECTION BUREAU (WCLIB), WESTERN WOOD PRODUCTS ASSOCIATION (WWPA), OR OTHER AGENCY ACCREDITED BY THE AMERICAN LUMBER STANDARD COMMITTEE (ALSC) TO GRADE UNDER ALSC CERTIFIED GRADING RULES.

SPECIES AND GRADE (BASE DESIGN VALUE)
1. 6x BEAMS AND HEADERS. "DOUG FIR–LARCH" NO. 1 (Fb=1350 PSI, Fv=170 PSI)
2. 2x TO 4x JOISTS, PURLINS AND HEADERS. "DOUG FIR–LARCH" NO. 2 (Fb=900 PSI, Fv=180 PSI) OR "HEM–FIR" NO. 1 (Fb=975 PSI, Fv=150 PSI)
3. 6x POSTS AND COLUMNS. "DOUG FIR–LARCH" NO. 1 (Fc=1000 PSI)
4. EXTERIOR STUDS, INTERIOR BEARING WALLS AND 4x COLUMNS. "DOUG FIR–LARCH" NO. 2 (Fb= 900 PSI, Fc=1350 PSI) OR "HEM–FIR" NO. 1 (Fb=975 PSI, Fc=1350 PSI).
5. INTERIOR NON–BEARING STUD WALLS. "DOUG FIR–LARCH" NO. 2 (Fb=900 PSI. Fc=1350 PSI) OR "HEM–FIR" NO. 1 (Fb=975 PSI, Fc=1350 PSI)
6. 2x & 3x T&G DECKING: "DOUG FIR–LARCH" COMMERCIAL (Fb=1450 PSI, E=1700 KSI)
7. THE MINIMUM GRADE OF ALL OTHER STRUCTURAL FRAMING. "DOUG FIR–LARCH" NO. 2 (Fb= 900 PSI, Fc=1350 PSI), OR "HEM–FIR" NO. 1 (Fb=975 PSI, Fc=1350 PSI).
8. UTILITY & STANDARD GRADES NOT PERMITTED.

STRUCTURAL COMPOSITE LUMBER (SCL): SHALL BE MANUFACTURED BY REDBUILT LLC., OR PRE–APPROVED EQUAL IN ACCORDANCE WITH APPROVED SHOP AND INSTALLATION DRAWINGS CONFORMING TO A CURRENT EVALUATION REPORT.

MIINIMUM DESIGN VALUES:
1. 2x SCL: Fb = 1700 PSI, Fv = 285 PSI, E = 1300 KSI
2. 1–3/4" SCL: Fb = 2600 PSI, Fv = 285 PSI, E = 1800 KSI
3. 3–1/2" SCL: Fb = 2900 PSI, Fv = 285 PSI, E = 2000 KSI
4. 5–1/4" SCL: Fb = 2900 PSI, Fv = 285 PSI, E = 2000 KSI
5. RIMBOARD: APA/EWS PERFORMANCE RATED RIM (PRR–401)

MEMBERS HAVE BEEN DESIGNED TO SERVICEABILITY AND OTHER PERFORMANCE BASED REQUIREMENTS, WHICH MAY EXCEED MINIMUM DESIGN LOADS AND CODE REQUIREMENTS. SUBSTITUTIONS MUST MEET OR EXCEED MOMENT, SHEAR, AND STIFFNESS OF THOSE MEMBERS SPECIFIED AT THE SAME DEPTH AND SPACING.

PRESERVATIVE TREATED WOOD REQUIREMENTS:

TREATMENTS OTHER THAN THOSE LISTED BELOW ARE NOT PERMITTED.

EXPOSURE		APPLICATION	SPECIFIED MATERIAL	PRESERVATIVE TREATMENT (1)	CONNECTORS & FASTENERS (2)(3)
DRY		FOUNDATION SILL PLATES, TOP PLATES & LEDGERS ON CONCRETE OR MASONRY WALLS (4)	2x, 4x, 6x (FIR), OR GLULAM (SP)	SBX	GALV (G60)
				ACQ, CBA, CA	GALV (G185)
WET		FRAMING, DECKING, POSTS & LEDGERS	2x, & 4x (FIR)	ACQ, CBA, CA	GALV (G185)
			2x, & 4x (CEDAR)	NONE	GALV (G90)
		BEAMS & COLUMNS	6x (FIR), OR GLULAM (SP)	ACQ, CBA, CA	GALV (G185)
			6x OR GLULAM (CEDAR)	NONE	GALV (G90)

1. CCA: CHROMATED COPPER ARSENATE NOT PERMITTED
   SBX: DOT SODIUM BORATE
   ACQ: ALKALINE COPPER QUAT
   CBA & CA: COPPER AZOLE
   FIR: DOUG–FIR OR HEM–FIR
   SP: SOUTHERN PINE

2. CONNECTORS: JOIST HANGERS, STRAPS, FRAMING CONNECTORS, COLUMN CAPS AND BASES, ETC. FASTENERS: MACHINE BOLTS, ANCHOR BOLTS AND LAG SCREWS WITH ASSOCIATED PLATE WASHERS AND NUTS. NAILS, SPIKES, WOOD SCREWS, ETC.

3. G60, G90 & G185 PER ASTM A653 FOR COLD–FORMED STEEL CONNECTORS. BATCH/POST HOT–DIP GALVANIZED PER ASTM A123 FOR CONNECTORS AND ASTM A153 STRUCTURAL STEEL CONNECTORS. HOT–DIP GALVANIZED PER ASTM A153 FOR FASTENERS OR MECHANICALLY GALVANIZED FASTENERS PER ASTM B695, CLASS 55 OR GREATER.

4. AT CONTRACTORS OPTION, LEDGERS AND TOP PLATES A MINIMUM OF 8 FEET ABOVE GRADE ON CONCRETE OR MASONRY WALLS MAY BE UN–TREATED IF COMPLETELY SEPARATED FROM THE WALL BY A SELF ADHERING ICE & WATER SHIELD BARRIER (40 MIL MINIMUM).

GENERAL REQUIREMENTS: PROVIDE MINIMUM NAILING PER IBC TABLE 2304.10.1 OR MORE, AS OTHERWISE SHOWN. STAGGER ALL NAILING TO PREVENT SPLITTING OF WOOD MEMBERS. ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESERVATIVE TREATED WITH THE EXCEPTION OF INTERIOR CONCRETE TOPPINGS ON WOOD FLOOR SYSTEMS. HOLES AND CUTS IN 3x OR 4x PLATES SHOULD BE TREATED WITH A 9% SOLUTION OF COPPER NAPHTHENATE. BOLT HOLES IN WOOD MEMBERS SHALL BE A MINIMUM OF 1/32" TO A MAXIMUM OF 1/16" LARGER THAN THE BOLT DIAMETER. PROVIDE CUT WASHERS WHERE BOLT HEADS, NUTS AND LAG SCREW HEADS BEAR ON WOOD. PROVIDE A MINIMUM 3"x3"x0.229" PLATE WASHER ON ALL ANCHOR BOLTS WHICH CONNECT MUD SILLS TO FOUNDATION. DO NOT NOTCH OR DRILL STRUCTURAL MEMBERS, EXCEPT AS ALLOWED BY IBC SECTIONS 2308.4.2.4, 2308.5.9, 2308.5.10 AND 2308.7.4 OR AS RESTRICTED BY PLANS OR DETAILS, OR AS APPROVED PRIOR TO INSTALLATION. REFER TO PRESERVATIVE TREATED WOOD REQUIREMENTS IN THESE GENERAL NOTES FOR GALVANIZING REQUIREMENTS FOR CONNECTORS AND FASTENERS.

WOOD SHRINKAGE AND CONSOLIDATION: SHRINKAGE OF WOOD MEMBERS AND CONSOLIDATION OF BEARING WALLS IS EXPECTED FROM TIME OF FRAMING UNTIL AFTER BUILDING IS PUT IN SERVICE. MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS SHALL BE CONSTRUCTED TO ACCOMODATE 1/4" OF TOTAL SETTLEMENT PER STORY.

FRAMING CONNECTORS: SHALL CONFORM TO CURRENT EVALUATION REPORT AND BE MANUFACTURED BY SIMPSON STRONG–TIE COMPANY, SAN LEANDRO, CA., OR PRE–APPROVED EQUAL. PROVIDE MAXIMUM SIZE AND QUANTITY OF NAILS OR BOLTS PER MANUFACTURER, EXCEPT AS NOTED OTHERWISE. PROVIDE LEAD HOLES AS REQUIRED TO PREVENT SPLITTING OF WOOD MEMBERS. REFER TO PRESERVATIVE TREATED WOOD REQUIREMENTS IN THESE GENERAL NOTES FOR GALVANIZING REQUIREMENTS FOR CONNECTORS AND FASTENERS.

LAG SCREWS: SHALL CONFORM TO ANSI/ASME STANDARD B18.2.1. LAG SCREWS SHALL BE OF A DIAMETER INDICATED ON DRAWINGS WITH A MINIMUM OF 8x DIA. EMBEDMENT IN SUPPORTING MEMBER UNLESS NOTED OTHERWISE. CLEARANCE HOLE FOR THE SHANK SHALL BE THE SAME DIAMETER AS THE SHANK AND THE SAME DEPTH OF PENETRATION AS THE UNTHREADED PORTION OF THE SHANK. THE LEAD HOLE FOR THE THREADED PORTION SHALL HAVE A DIAMETER EQUAL TO 60 TO 75 PERCENT OF THE SHANK DIAMETER AND A LENGTH EQUAL TO AT LEAST THE LENGTH OF THE THREADED PORTION. THE THREADED PORTION OF THE SCREW SHALL BE INSERTED IN ITS LEAD HOLE BY TURNING WITH A WRENCH. SOAP OR OTHER LUBRICANT SHALL BE USED ON THE SCREWS OR IN THE LEAD HOLE TO FACILITATE INSERTION AND PREVENT DAMAGE TO THE SCREW. LAG SCREWS SHALL NOT BE DRIVEN WITH A HAMMER. REFER TO PRESERVATIVE TREATED WOOD REQUIREMENTS IN THESE GENERAL NOTES FOR GALVANIZING REQUIREMENTS FOR CONNECTORS AND FASTENERS.

OPEN–WEB TRUSSES: SHALL BE MANUFACTURED BY REDBUILT LLC, OR PRE–APPROVED EQUAL IN ACCORDANCE WITH APPROVED SHOP AND INSTALLATION DRAWINGS. MEMBERS SHALL BE DESIGNED UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF PROJECT. THE ENTIRE OPEN–WEB TRUSS ASSEMBLY SHALL BE AS APPROVED BY CURRENT EVALUATION REPORT. MEMBERS SHALL BE DESIGNED TO CARRY THE LOADS LISTED IN THE DESIGN CRITERION AND ANY ADDITIONAL LOADS INDICATED ON THE FRAMING PLANS AND DETAILS. THE TRUSS ENGINEER SHALL ASSUME ALL RESPONSIBILITY FOR THE WORK OF ALL SUBORDINATES INVOLVED IN THE PREPARATION OF THE TRUSS PLACEMENT PLANS AND TRUSS DESIGN DRAWINGS. TRUSSES SHALL BE PROVIDED TO COMPLETE THE ROOF AND/OR FLOOR FRAMING FROM THE SHEATHING TO THE SUPPORTING MEMBERS BELOW. MEMBER DESIGNATIONS ON PLANS ARE FOR TYPICAL UNIFORMLY LOADED CONDITIONS. MANUFACTURER SHALL PROVIDE ADDITIONAL MEMBERS AS REQUIRED TO SUPPORT SPECIAL LOADING CONDITIONS INDICATED ON DRAWINGS.

PROVIDE INSTALLATION DRAWINGS AND CALCULATIONS PRODUCED UNDER THE SUPERVISION OF AND BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF PROJECT. DETAIL DRAWINGS TO INDICATE MEMBER TYPES, SIZE, SPACING, BRIDGING, BLOCKING, CONNECTIONS, ANCHORING, BEARING PLATE AND OTHER PERTINENT DETAILS.

MEMBER DESIGN CALCULATIONS SHALL BE PROVIDED FOR STANDARD LOADING ALONG WITH DESIGN CHECKS FOR SPECIAL LOADING CONDITIONS WHICH INCLUDE FREE BODY DIAGRAMS, LOADING BREAK DOWN, DESCRIPTION OF LOADS (I.E. MECH UNIT, SUSPENDED WALL, ETC.) AND THE RATIONALE FOR LOADING DISTRIBUTION ON MULTIPLE MEMBERS. SUBMITTAL SHALL ALSO PROVIDE ANY DOCUMENTATION NECESSARY TO INTERPRET DATA INDICATED ON CALCULATIONS.

MEMBERS HAVE BEEN DESIGNED TO MEET SERVICEABILITY AND OTHER PERFORMANCE BASED REQUIREMENTS, WHICH MAY EXCEED MINIMUM DESIGN LOADS AND CODE REQUIREMENTS. SUBSTITUTIONS MUST MEET OR EXCEED MOMENT, SHEAR, AND STIFFNESS OF THOSE MEMBERS SPECIFIED AT THE SAME DEPTH AND SPACING.

REFER TO THE FRAMING CONNECTORS SECTION OF THESE GENERAL NOTES FOR REQUIREMENTS PLACED UPON CONNECTOR HARDWARE SPECIFIED BY TRUSS ENGINEER AND/OR PROVIDED BY TRUSS MANUFACTURER.

SPRINKLER LINE ATTACHMENTS SHALL CONFORM TO NFPA 13 AND COMMERCIAL PUBLICATION "SPRINKLER SYSTEM INSTALLATION WITH GUIDELINES FOR REDBUILT OPEN–WEB TRUSSES AND I–JOISTS". LOADS HUNG FROM JOIST NOT SPECIFICALLY IDENTIFIED ON STRUCTURAL DRAWINGS SHALL NOT EXCEED 30 POUNDS AT ANY ONE POINT, NOR SHALL TOTAL LOADS IN POUNDS ON ANY ONE JOIST EXCEED 8 TIMES THE JOIST SPAN IN FEET, UNLESS DETAILED OTHERWISE ON THE DRAWINGS. ATTACHMENT OF LOADS EXCEEDING 90 POUNDS SHALL BE APPROVED PRIOR TO INSTALLATION. DO NOT NOTCH OR DRILL THRU TRUSS MEMBERS.

MISCELLANEOUS:

PRE–APPROVED SUBSTITUTIONS: SUBSTITUTIONS MAY BE ALLOWED ONLY IF THEY MEET THE REQUIREMENTS OF THESE GENERAL NOTES AND THE SPECIFICATIONS, AND IF COMPLETE WRITTEN ENGINEERING DATA FOR EACH CONDITION REQUIRED FOR THIS PROJECT IS PROVIDED TO THE STRUCTURAL ENGINEER TWO WEEKS PRIOR TO BID DATE AND APPROVED IN WRITTEN ADDENDA BY THE ARCHITECT. DATA IS TO INDICATE CODE BASIS BY YEAR, AUTHORITY FOR STRESSES AND STRESS INCREASES, IF ANY, AND AMOUNT OF EXPECTED DEFLECTION FOR FLEXURAL MEMBERS UNDER (1) TOTAL LOAD AND (2) LIVE LOAD ONLY. ALL INCREASED COSTS IN MECHANICAL, SPRINKLER, ELECTRICAL OR GENERAL INSTALLATION AND ANY ARCHITECTURAL OR STRUCTURAL REDESIGN RESULTING FROM SUBSTITUTION SHALL BE BORNE BY THE GENERAL CONTRACTOR.

SHOP DRAWINGS/SUBMITTALS

THE FOLLOWING SHOP DRAWINGS/SUBMITTALS SHALL BE PROVIDED FOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO FABRICATION OR DELIVERY.

		STRUCTURAL ENGR.	BLDG. DEPT.
1.	CONCRETE MIX DESIGNS	X	X
2.	REINFORCING STEEL SHOP DRAWINGS	X	
3.	STRUCTURAL STEEL	X	X
4.	GLU–LAMINATED MEMBERS	X	X
5.	WOOD OPEN WEB TRUSSES	X	X
6.	CONTRACTOR'S STATEMENT OF RESPONSIBILITY	X	X

DEFERRED SUBMITTALS

THE FOLLOWING ARE NOT INCLUDED WITH THE BUILDING PERMIT DRAWINGS AND SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL AS A DEFERRED SUBMITTAL. SUBMITTALS SHALL BE STAMPED BY AN ENGINEER LICENSED IN THE STATE OF THE PROJECT AS NOTED.

		ENGINEER STAMP REQUIRED
1.	WOOD OPEN–WEB TRUSSES AND I–JOISTS	PE

SPECIAL INSPECTION: SPECIAL INSPECTION SHALL BE PROVIDED BY AN INDEPENDENT TESTING LABORATORY PER THE REQUIREMENTS OF IBC CHAPTER 17 AND THE LOCAL BUILDING OFFICIAL OR APPLICABLE JURISDICTION AND THE CONTRACT DOCUMENTS. THE SPECIAL INSPECTOR SHALL SUBMIT INSPECTION REPORTS AND A FINAL SIGNED REPORT TO THE BUILDING OFFICIAL FOR THE ITEMS LISTED IN THE QUALITY ASSURANCE/SPECIAL INSPECTION SECTION:

CLIENT:
bp
ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen
Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
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SEAL:
STEPHEN JOSEPH WILLIAMS
STATE OF WASHINGTON
55281
REGISTERED PROFESSIONAL ENGINEER
STRUCTURAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	SJW	ALLIANCE Z&DM:	
CHECKED BY:	SJW	BP REPM:	
DRAWN BY:	SAA	ALLIANCE PM:	
VERSION:	- -	PROJECT NO:	21730

DRAWING TITLE:
GENERAL NOTES

SHEET NO:
S3.3

STATEMENT OF SPECIAL INSPECTIONS:

SPECIAL INSPECTION: SPECIAL INSPECTION SHALL BE PROVIDED PER THE REQUIREMENTS OF IBC SECTION 1704 AND 1705 AND AS NOTED HEREIN.

STRUCTURAL SYSTEM	VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	COMMENTS	REFERENCES
SOILS	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY		X		IBC 1705.6
	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL		X		
	PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS		X		
	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X			
	PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY		X		
STRUCTURAL STEEL	MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS		X		AISC 360 CHAPTER N5
	HIGH-STRENGTH BOLTING A. SNUG-TIGHT JOINTS		X		AISC 360 CHAPTER N5
	MATERIAL VERIFICATION OF STRUCTURAL STEEL A. FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360 B. MANUFACTURER'S CERTIFIED MILL TEST REPORTS		X X	MANUFACTURER TO PROVIDE CERTIFIED MILL TEST REPORTS	AISC 360 CHAPTER N5 AISC 341 CHAPTER J6
	MATERIAL VERIFICATION OF WELD FILLER MATERIALS A. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATIONS LISTED IN GENERAL NOTES B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE		X X	MANUFACTURER TO PROVIDE CERTIFICATE OF COMPLIANCE	AISC 360 CHAPTER N5
	INSPECTION OF WELDING A. COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS B. MULTI-PASS FILLET WELDS C. SINGLE-PASS FILLET WELDS > 5/16" D. PLUG AND SLOT WELDS E. SINGLE-PASS FILLET WELDS ≤ 5/16" F. FIELD-INSTALLED WELDED STUDS G. WELDING OF STAIRS AND RAILING SYSTEMS	X X X X	 X X X	SPECIAL INSPECTIONS IN THIS SECTION ARE WAIVED WHERE FABRICATION IS PERFORMED ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED IN ACCORDANCE WITH IBC SECTION 1704.2.5	AISC 360 CHAPTER N5 AISC 341 CHAPTER J6 AWS D1.1
	INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS		X		
STEEL PIPE PILES	GEOTECHNICAL ENGINEER TO MONITOR INSTALLATION AND LOAD TESTING	X			
CONCRETE	INSPECT REINFORCEMENT, INCLUDING PRE-STRESSING TENDONS, AND VERIFY PLACEMENT		X		ACI 318: CH 20, 25.2, 25.3, 26.6-1 TO 26.6-3, IBC 1908.4
	ANCHORS CAST IN CONCRETE-PRIOR TO AND DURING PLACEMENT OF CONCRETE		X		ACI 318: 17.8.2 AISC 360 SECTION N7
	VERIFY USE OF REQUIRED DESIGN MIX		X		ACI 318, CH 19
	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X			ASTM C172, C31 ACI 318: 26.4, 26.12 IBC 1908.10
	MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X		ACI 318: 26.5.3 TO 26.5.5 IBC 1908.9
	MATERIAL VERIFICATION OF REINFORCEMENT STEEL FOR ASTM A615 REINFORCING		X	MANUFACTURER SHALL PROVIDE MILL TEST REPORTS. CONTINUOUS INSPECTION FOR ALL WELDS GREATER THAN 5/16" FILLET. PERIODIC INSPECTION FOR FILLET WELD 5/16" AND SMALLER	ACI 318: 26.6.4 AWS D1.4 IBC 1705.3.1
	ANCHORS POST-INSTALLED IN HARDENED CONCRETE (MECHANICAL ANCHORS INSTALLED IN ANY DIRECTION AND ADHESIVE ANCHORS INSTALLED DOWNWARD)		X	PERIODIC INSPECTION TO INCLUDE A QUANTITY OF 10% WITH A MINIMUM OF (5) ANCHORS INSPECTED PER INSTALLER ON A DAILY BASIS	ACI 318: 17.8.2 MFR EVAL REPORT MFR PUBLISHED INSTALLATION INSTRUCTIONS
	ANCHORS POST-INSTALLED IN HARDENED CONCRETE (ADHESIVE ANCHORS INSTALLED HORIZONTAL OR UPWARDLY INCLINED)	X			ACI 318: 17.8.2 MFR EVAL REPORT MFR PUBLISHED INSTALLATION INSTRUCTIONS
	TESTING OF MATERIALS		X		IBC 1705.3.2

TESTING AND SPECIAL INSPECTION REPORTS SHALL BE PREPARED FOR EACH INSPECTION ITEM ON A DAILY BASIS WHENEVER WORK IS PERFORMED ON THAT ITEM. REPORTS SHALL BE DISTRIBUTED TO OWNER, CONTRACTOR, BUILDING OFFICIAL, ARCHITECT AND STRUCTURAL ENGINEER.

STRUCTURAL OBSERVATIONS SHALL BE PERFORMED BY THE STRUCTURAL ENGINEER OF RECORD OR DESIGNATED REPRESENTATIVE IN ACCORDANCE WITH IBC 1704.6. STRUCTURAL OBSERVATION SHALL BE PERFORMED AS FOLLOWS:

- PERIODIC VISUAL OBSERVATION OF STRUCTURAL SYSTEMS FOR GENERAL CONFORMANCE TO CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTION STAGES.
- REVIEW OF TESTING AND INSPECTION REPORTS.
- REPORTS SHALL BE PREPARED FOR EACH SITE VISIT AND SHALL BE DISTRIBUTED TO ARCHITECT.

GENERAL CONTRACTOR SHALL SUBMIT A WRITTEN CONTRACTOR'S STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND OWNER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL INCLUDE ACKNOWLEDGMENT OF AWARENESS OF THE SPECIAL INSPECTION REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTION.

ABBREVIATION LIST

@	AT	ELEV.	ELEVATOR	MTL	METAL
A.B.	ANCHOR BOLT	ENGR.	ENGINEER	N.F.	NEAR FACE
ADD'L	ADDITIONAL	EQ.	EQUAL	N.S.	NEAR SIDE
A.F.F.	ABOVE FINISH FLOOR	E.W.	EACH WAY	NTS	NOT TO SCALE
ALT.	ALTERNATE	EXP.	EXPANSION	O.C.	ON CENTER
ARCH.	ARCHITECTURAL	EXT.	EXTERIOR	OPN'G	OPENING
BLD'G	BUILDING	FDN	FOUNDATION	OPP.	OPPOSITE
BLK'G	BLOCKING	F.F.	FAR FACE	P.A.F.	POWDER ACTUATED FASTENER
BM	BEAM	FLR	FLOOR	PERP.	PERPENDICULAR
B.O.F.	BOTTOM OF FOOTING	F.O.M.	FACE OF MASONRY	℄	PLATE
B.O.T.	BOTTOM	F.O.S.	FACE OF STUD	P.P.	PARTIAL PENETRATION
BRG	BEARING	FRM'G	FRAMING	P.P.T.	PRESERVATIVE PRESSURE TREATED
BTWN	BETWEEN	F.R.T.	FIRE RETARDANT TREATED	P.S.F.	POUNDS PER SQUARE FOOT
B.U.	BUILT UP	F.S.	FAR SIDE	PSL	PARALLAM
(C=)	CAMBER	FTG	FOOTING	P.T.	POST TENSION
CANT.	CANTILEVER	GA.	GAGE/GAUGE	PW.	PLYWOOD
C.F.S.	COLD-FORMED STEEL	GALV.	GALVANIZED	REINF.	REINFORCING
C.J.	CONTROL/CONSTRUCTION JOINT	GL.	GLULAM	REQ'D	REQUIRED
℄	CENTERLINE	GR.	GRADE	SCHED.	SCHEDULE
CLR.	CLEARANCE	GWB	GYPSUM WALL BOARD	S.C.L.	STRUCTURAL COMPOSITE LUMBER
CMU	CONCRETE MASONRY UNIT	HDR	HEADER	SHT'G	SHEATHING
COL.	COLUMN	HGR	HANGER	SIM.	SIMILAR
CONC.	CONCRETE	HORIZ.	HORIZONTAL	S.O.G.	SLAB ON GRADE
CONN.	CONNECTION	HSS	HOLLOW STRUCTURAL SECTION	SQ.	SQUARE
CONST.	CONSTRUCTION	HT	HEIGHT	STD	STANDARD
CONT.	CONTINUOUS	INT.	INTERIOR	STIFF.	STIFFENER
CONTR.	CONTRACTOR	JST	JOIST	STL	STEEL
COORD.	COORDINATE	JT	JOINT	STRUCT.	STRUCTURAL
C.P.	COMPLETE PENETRATION	L	ANGLE	T&B	TOP & BOTTOM
CTR'D	CENTERED	L.L.	LIVE LOAD	T&G	TONGUE AND GROOVE
C.Y.	CUBIC YARD	LLH	LONG LEG HORIZONTAL	THR'D	THREADED
DBL.	DOUBLE	LLV	LONG LEG VERTICAL	T.O.F.	TOP OF FOOTING
D.F.	DOUGLAS FIR	LOC.	LOCATION	T.O.S.	TOP OF STEEL
DIA. OR Ø	DIAMETER	LSL	LAMINATED STRAND LUMBER	TRT'D	TREATED
DIAG.	DIAGONAL	LVL	LAMINATED VENEER LUMBER	TYP.	TYPICAL
DIM.	DIMENSION	MAX.	MAXIMUM	U.N.O.	UNLESS NOTED OTHERWISE
D.L.	DEAD LOAD	M.B.	MACHINE BOLT	U.T.	ULTRASONIC TESTED
DWG	DRAWING	MECH.	MECHANICAL	VERT.	VERTICAL
DWL	DOWEL	MEZZ.	MEZZANINE	W/	WITH
(E)	EXISTING	MFR	MANUFACTURER	W.P.	WORK POINT
EA.	EACH	MIN.	MINIMUM	WT	WEIGHT
E.F.	EACH FACE	MISC.	MISCELLANEOUS	W.W.R.	WELDED WIRE REINFORCING
EL.	ELEVATION				

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
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SEAL:

STEVEN JOSEPH WILLIAMS
STATE OF WASHINGTON
55281
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI

3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	SJW	ALLIANCE Z&DM:	
CHECKED BY:	SJW	BP REPM:	
DRAWN BY:	SAA	ALLIANCE PM:	
VERSION:	-	PROJECT NO:	21730

DRAWING TITLE:

GENERAL NOTES

SHEET NO:

S3.4

HEAT PUMP PACKAGE ROOFTOP UNIT SCHEDULE

MARK	MANUFACTURER/MODEL #	SERVICE	COOLING							CONDENSING TEMP., °F	HEATING			INDOOR FAN			HEATER	ELECTRICAL DATA							WEIGHT (LBS.)	MIN. OUTSIDE AIR CFM	LOCATION	REMARKS
			NOMINAL TONS	TOTAL MBH	SENSIBLE MBH	ENT. AIR DB, °F	ENT. AIR WB, °F	EER	SEER		47°F MBH	17°F MBH	HSPF (COP)	CFM	ESP IN.WG.	HP	KW	VOLTS	PHASE	FREQ. (Hz)	COMPR. RLA	COMPR. LRA	MCA	MOCP				
RTU 1	"TRANE" WHC060	STORE	5.0	61.0	50.9	75.0	61.0	--	16.4	95	57.8	34.4	9.0	2,000	0.6	1.0	9	208	3	60	25.0	164	63	70	900	300	ROOF	1 2 3 4 5 6 7 8 9 10 11 12 13
RTU 2	"TRANE" WS090	STORE	7.5	84.5	78.1	75.0	61.0	11.8	--	95	86.0	30	12.0	3,100	0.6	1.0	13.5	208	3	60	17.5	110	85	100	820	300	ROOF	1 2 3 4 5 6 7 8 9 10 11 12 13

1. ELECTRIC HEATING/ELECTRIC COOLING PACKAGED HEAT PUMP ROOFTOP UNIT.
2. HIGH EFFICIENCY, STANDARD INDOOR FAN. BELT DRIVE
3. SET MINIMUM OSA DAMPER FOR 300 CFM
4. DUCT SMOKE DETECTOR IN RETURN AIR PLENUM.
5. PROVIDE WSEC PROGRAMMABLE THERMOSTAT & SENSORS.
6. R-410 REFRIGERANT.
7. MERV 13 FILTERS
8. PROVIDE THE FOLLOWING FACTORY INSTALLED OPTIONS:
   A. 14" HIGH ROOF CURB.
   B. COMPRESSOR HARD START KIT.
   C. CRANKCASE HEATER.
   D. FILTER RACK KIT.
9. FULLY MODULATING LOW LEAK ECONOMIZER
10. FACTORY INSTALLED POWER EXHAUST.
11. DISCONNECT SWITCH.
12. SINGLE POINT ELECTRICAL CONNECTION, UNIT WITH DEFROST CYCLE.
13. PROVIDE FAULT DETECTION & DIAGNOSTICS.

ENERGY RECOVERY VENTILATOR (DOAS)

MARK	MANUFACTURER & MODEL	FAN				ELECTRICAL									SERVICE	WEIGHT (LBS)	REMARKS
		SUPPLY CFM	EXHAUST CFM	MOTORS HP	ESP W.G.	FLA	VOLTAGE	PHASE	Hz	MCA	MOCP	SENSIBLE RECOVERY	HEATER KW	SUPPLY TEMP			
ERV 1	SOLER & PALAU TRC 500	400	400	--	.50"	--	120	1ø	60	8.8	15	77%	--	57°F	STORE	141	1

1. WITH MOUNTING HARDWARE (ALL THREAD ROD, UNI STRUT, SPRING ISOLATORS), FILTER RACK AND FILTER.

EXHAUST FAN SCHEDULE

MARK	SERVICE	LOCATION	EXHAUST AIR CFM	EXT. STATIC PRESSURE IN. W.G.	RPM	ELECTRICAL DATA				WEIGHT LBS.	MANUFACTURER & MODEL #	REMARKS
						MOTOR WATTS (HP)	VOLTS	PHASE	Hz			
EF 1	RESTROOMS	CEILING	220	0.250	–	48	115	1	60	24	"GREENHECK" SP-A200	1 2 3 4
EF 2	SLUSH MACHINE	ROOF	500	0.375	936	(1/4)	115	1	60	11	"CAPTIVEAIRE" DR30HFA	3 4 5 6 7 8 THERMOSTAT CONTROLLED

1. CEILING MOUNTED EXHAUST FAN.
2. INTERLOCK WITH LIGHT FIXTURE.
3. WITH BACKDRAFT DAMPER.
4. WITH FLEXIBLE DUCT CONNECTION.
5. MUSHROOM TYPE FAN.
6. SPEED CONTROLLER.
7. PROVIDE WITH 12" ROOF CURB.
8. DISCONNECT SWITCH.

AIR DEVICE SCHEDULE

MARK	NECK SIZE	DIFFUSER FACE OR CEILING GRID SIZE (INCHES)	CFM RANGE	TYPE				MOUNTING		DUTY				MFR.	MODEL NO.	REMARKS
				DIFFUSER	REGISTER	GRILLE	LOUVER	LAY-IN	SURFACE	SUPPLY	RETURN	EXHAUST	TRANSFER			
SD-1	8"ø	12"x12"	0-190	X	–	–	–	X	–	X	–	–	–	TITUS	PAS	1 2 3
SD-2	12"ø	24"x24"	200-470	X	–	–	–	X	–	X	–	–	–	TITUS	PAS	1 2 3
SD-3	18x12	19.75x13.75	325-550	–	X	–	–	–	X	X	–	–	–	TITUS	301 FL	1 2
RG-1	–	PER DWGS	PER DWGS	–	–	X	–	X	–	–	X	–	–	TITUS	50-F	2 3
TG-1	–	PER DWGS	PER DWGS	–	–	X	–	X	–	–	X	–	–	TITUS	50-F	3

1. PROVIDE OPPOSED BLADE DAMPER.
2. TYPE AND CFM SHALL BE AS INDICATED ON DRAWING M1.0 AT EACH AIR DEVICE. NC SHALL BE 35 OR LESS.
3. SELECTION OF THE FINISHES OF AIR DISTRIBUTION DEVICES BY INTERIOR DESIGNER/ARCHITECT.

AIR CURTAIN SCHEDULE

MARK	MANUFACTURER & MODEL	FAN			ELECTRICAL				SERVICE	ACOUSTICS	DIMENSIONS (in)		WEIGHT (LBS)	REMARKS
		MAX. FPM	MAX. CFM	MOTORS HP	FLA	VOLTAGE	PHASE	Hz		MEASURE 10' FROM NOZZLE dBA	LENGTH	DEPTH		
ACN 1	MARS LPN2-72-1UA-OB	1,800	1,800	1/6	2.6	115	1	60	MAIN DOOR	53	72	9	58	1

1. MICROSWITCH CONTROL. MOUNT SWITCH SUCH THAT AIR CURTAIN STARTS WHEN DOOR OPENS. PROVIDE (2) MAGNETIC SWITCHES (ONE PER EACH DOOR), MODEL #99018.

Minimum Outside Air Ventilation Schedule

Ventilation Rate per 2018 IMC 403 (based on ASHRAE Std. 62.1)

Equip. Tag	Zone	Occupancy Category	Area (sf)	People Outdoor Air Rate (cfm/person) Table 403.3	Zone Population. Number of people in space.*	Area Outdoor Air Rate (cfm/sf) (Table 403.3)	Occupant Density (#/1000 sf)	Breathing Zone Outdoor Air Flow Vbz/(CFM)	Zone Air Distribution Effectiveness Ez (Table 403.3.1.2)	Zone Outdoor Air Flow (Voz/(CFM)	System Ventilation Efficiency Ev (Table 403.3.2.3.2	Minimum Outdoor Air Intake Flow Vot/(CFM)	Proposesd Design Outdoor Air Intake Flow Vot/(CFM)
ERV-1	Sales	Retail	1344	7.5	20	0.12	15	311.28	1.00	311.28	0.90	280	300
	Prep/Utility Rm	Storage Rms	444	0.0	0	0.12	0	53.28	1.00	53.28	0.90	48	50
	Office	Office spaces	64	5.0	1	0.06	7	8.84	1.00	8.84	0.90	8	10
	Hall	Corridors	93	NA	NA	0.06	NA	NA	NA	NA	NA	6	10
											Total	342	370

* In some cases occupancy is less than maximums as allowed per 403.3 exception, in no case shall the occupancy be less than one half per Table 403.3.

GENERAL NOTES

1. CONSTRUCTION TO CONFORM WITH:
   - 2018 WASHINGTON STATE BUILDING CODE, WITH LOCAL AMENDMENTS
   - 2018 WASHINGTON STATE MECHANICAL CODE, WITH LOCAL AMENDMENTS
   - 2018 WASHINGTON STATE PLUMBING CODE. WITH LOCAL AMENDMENTS
   - 2018 WASHINGTON STATE ELECTRICAL CODE, WITH LOCAL AMENDMENTS
   - 2018 WASHINGTON STATE FIRE CODE, WITH LOCAL AMENDMENTS
   - 2018 WASHINGTON STATE ENERGY CODE, WITH LOCAL AMENDMENTS

   THE CONTRACTOR IS RESPONSIBLE FOR PERMIT FEES.
2. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, EQUIPMENT, TRANSPORTATION AND SERVICES NECESSARY FOR COMPLETION OF THE WORK. ALL MATERIALS AND WORK SHALL COMPLY WITH APPLICABLE CODES AND GOVERNING REGULATIONS AND MEET THE APPROVAL OF THE LOCAL JURISDICTION.
3. ANY MATERIAL, ARTICLE OR PIECE OF EQUIPMENT OTHER THAN THAT INDICATED SHALL NOT BE USED UNLESS APPROVED IN WRITING BY THE ENGINEER AND ANY CHANGES IN MECHANICAL, ELECTRICAL AND/OR OTHER SYSTEMS REQUIRED DUE TO SUCH SUBSTITUTION SHALL BE THE RESPONSIBILITY OF THE HVAC CONTRACTOR; AND AT NO ADDITIONAL COST TO THE OWNER.
4. TAKE ALL PRECAUTIONS NECESSARY TO PROTECT THE MATERIALS BEFORE, DURING AND AFTER INSTALLATION. IN THE EVENT OF DAMAGE, IMMEDIATELY REPAIR ALL DAMAGED AND DEFECTIVE WORK TO THE APPROVAL OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
5. THREE SETS OF OPERATING AND MAINTENANCE MANUALS SHALL BE SUBMITTED UPON COMPLETION OF PROJECT.
6. IN ADDITION TO EQUIPMENT WARRANTIES, FURNISH A WRITTEN GUARANTEE AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR ONE YEAR. GUARANTEE SHALL INCLUDE REPAIR OF DAMAGE TO, OR REPLACEMENT OF, ANY PART OF EQUIPMENT OR PREMISES CAUSED BY EQUIPMENT PROVIDED.
7.

LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	SA/SUP	SUPPLY AIR (RISE/DROP)
	RA/RET	RETURN AIR DUCT (RISE/DROP)
	EA/EXH	EXHAUST AIR DUCT (RISE/DROP)
	CD/SR	CEILING DIFFUSER/SUPPLY REGISTER (ARROWHEAD REPRESENTS NUMBER OF THROW) (4-WAY TYPICAL IF NO ARROWS)
	RR/RG	RETURN REGISTER/GRILLE
	ER/EG	EXHAUST REGISTER/GRILLE
		RECTANGULAR DUCT ELBOW WITH TURNING VANES
	FC	FLEXIBLE CONNECTION
	(L)	DUCT LINING (1" THICK UNLESS OTHERWISE NOTED)
		SINGLE LINE DUCT BRANCH TAKE-OFF
		DUCT TRANSITION (RECTANGULAR TO ROUND)
	FLEX	FLEXIBLE DUCT (4'-0 MAXIMUM)
T	T-STAT	PROGRAMMABLE THERMOSTAT
S		TEMPERATURE SENSOR
C		CO_2 SENSOR
SD	SD	DUCT SMOKE DETECTOR
M	MD	MECHANICAL DAMPER
	DIA.	DIAMETER
M		FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR.
E		FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
ME		FURNISHED BY MECHANICAL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR.
	P.O.C.	POINT OF CONNECTION
		FLEXIBLE DUCT

SD-1 — (SD-SUPPLY DIFFUSER, RD-RETURN DIFFUSER, E-EXHAUST)
100 — AIR QUANTITY IN CFM

AC 1 — MECHANICAL EQUIPMENT DESIGNATION / DESIGNATED NUMBER

A/C , AC	AIR CONDITIONING
BDD	BACK DRAFT DAMPER
CB	CIRCUIT BREAKER
CLG.	CEILING
CONN.	CONNECT/CONNECTION
CONT.	CONTINUATION
CONT'R	CONTRACTOR
CFM	CUBIC FEET PER MINUTE
CU	CONDENSING UNIT
DET.	DETAIL
DISC.	DISCONNECT
DTR	DOWN THRU ROOF
EF	EXHAUST FAN
(E)	EXISTING
E.A.T.	ENTERING AIR TEMPERATURE
GA.	GAGE/GAUGE
GC	GENERAL CONTRACTOR
GF	GAS FURNACE
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
MCA	MINIMUM CIRCUIT AMPACITY
MFR.	MANUFACTURER
MECH.	MECHANICAL
MOCP	MAXIMUM OVERCURRENT PROTECTION
(N)	NEW
OA/OSA	OUTSIDE AIR
PH	PHASE
RAD	RETURN AIR DUCT
SAD	SUPPLY AIR DUCT
S/S	STAINLESS STEEL
TYP.	TYPICAL
UON	UNLESS OTHERWISE NOTED
UTR	UP THRU ROOF
V	VOLTS

DRAWING SCHEDULE

SHEET NUMBER	DESCRIPTION
M0.1	EQUIP.SCHED.LEGEND,NOTES
M0.2	MECHANCIAL SPECIFICATIONS
M1.0	MECHANCIAL FLOOR PLAN
M1.1	MECHANICAL ROOF PLAN
M2.0	MECHANICAL DETAILS
M2.1	MECHANICAL CONTROLS
M3.0	ENERGY FORMS

ABOSSEIN #223054

Abossein Engineering, L.L.C.
MECHANICAL - ELECTRICAL
CIVIL - LEED
FIRE PROTECTION
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CLIENT: bp / ARCO
BP WEST COAST PRODUCTS, LLC

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18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION

SEAL: ALEXANDER ABOSSEIN, STATE OF WASHINGTON, 21648, REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: -	PROJECT NO: 21730

DRAWING TITLE: **EQUIP. SCHED. LEGEND, NOTES**

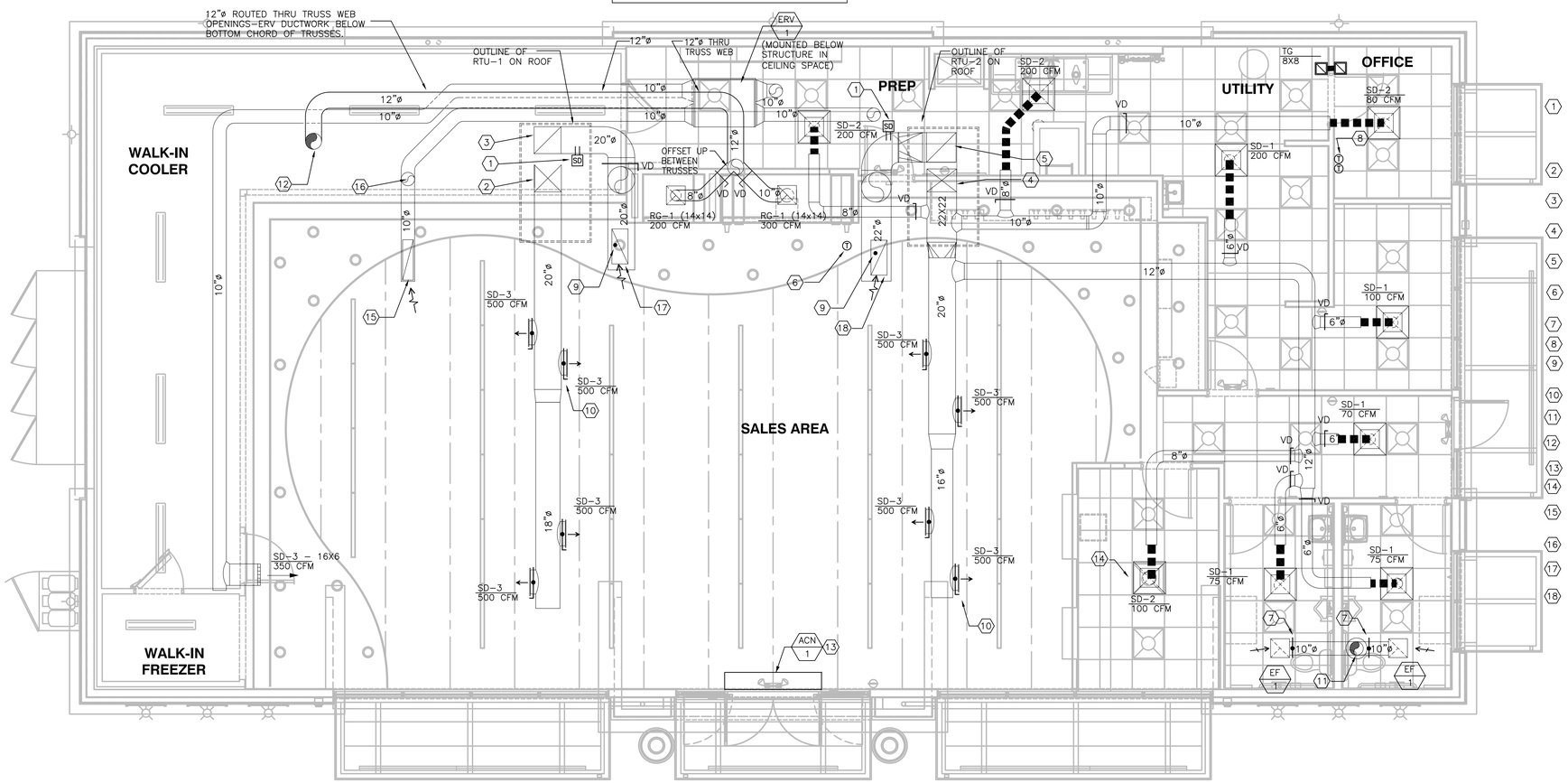
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NOTE:
CONTRACTOR SHALL PROVIDE PERFORMANCE TEST CERTIFICATE TO OWNER BEFORE FINAL APPROVAL. TEST SHALL VERIFY PROPER OPERATION, RATE OF EXHAUST FAN AND MAKEUP AIR AT NORMAL OPERATING CONDITIONS. MECHANICAL CONTRACTOR SHALL PERFORM AND COMPLETE TEST.

NOTE:
EXPOSED DUCTWORK BETWEEN OR THRU WEB TRUSS OPENINGS. COORDINATE PAINTING AND COLOR OF DUCTWORK WITH ARCHITECT. DUCTWORK SHALL BE CLEANED, DEGREASED AND PAINTED PRIMER GRAY PRIOR TO PAINTING. EXPOSED DUCTWORK SHALL BE PAINT GRIP SPIRAL LOCK – NO GALVANIZING DUCTWORK WITHIN EXPOSED AREA. COORDINATE COLOR WITH ARCHITECT (TYPICAL).

NOTE:
ALL DUCT OPENINGS AND AIR DISTRIBUTION COMPONENTS SHALL BE PROTECTED DURING CONSTRUCTION PER JURISDICTIONAL REQUIREMENTS.

NOTE:
FLEXIBLE DUCTWORK SHALL BE A MAXIMUM OF 5 FT .



PLAN KEYNOTES:

1. SMOKE DETECTOR IN THE RETURN AIR PLENUM TO SHUT DOWN PACKAGED ROOFTOP UNIT UPON SMOKE DETECTION. COORDINATE WITH FIRE ALARM CONTRACTOR. COORDINATE FIRE ALARM OPERATION AND TESTING WITH FIRE DEPT. VERIFY LOCATION PER LOCAL CODES.
2. 20x20 SUPPLY AIR DUCT WITH 1" SOUND LINING FROM RTU–1 ON ROOF.
3. 20x20 RETURN AIR DUCT WITH 1" SOUND LINING FROM RTU–1 ON ROOF.
4. 20x20 SUPPLY AIR DUCT WITH 1" SOUND LINING FROM RTU–2 ON ROOF.
5. 20x20 RETURN AIR DUCT WITH 1" SOUND LINING FROM RTU–2 ON ROOF.
6. THERMOSTAT TO ENERGIZE EF–2. SET FAN TO ENERGIZE AT 77°F.
7. BACKDRAFT DAMPER.
8. PROGRAMMABLE MASTER THERMOSTAT, 48" AFF.
9. THERMOSTAT REMOTE SENSOR SENSOR INSIDE RETURN DUCT.
10. MANUAL VOLUME DAMPER.
11. 10"ø EXHAUST RISER AIR DUCT UP TO ROOF JACK & CAP W/BIRDSCREEN
12. 12"ø EXHAUST AIR DUCT UP TO EF–2 ON ROOF.
13. AIR CURTAIN, SEE M0.1 FOR SPEC.
14. EDGE OF DIFFUSER GRILLES SHALL BE NO LESS THAN 8" FROM ANY FASCIA.
15. 8X30 GALVANIZED SCREENED OPENING FACING TOWARD ROOF.
16. 10"ø OFFSET UP BETWEEN TRUSS SPACE
17. 12X26 GALVANIZED SCREENED OPENING FACING TOWARD ROOF.AIR BALANCE FOR 2000CFM
18. 14X26 GALVANIZED SCREENED OPENING FACING TOWARD ROOF.AIR BALANCE FOR 3000CFM

01 – **FLOOR PLAN - HVAC**
SCALE: 1/4"=1'–0"

NORTH

JN #223025

Abossein Engineering
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Website: www.abossein.com

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ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
–	09/15/23	BID SET
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

SEAL:
ALEXANDER ABOSSEIN – STATE OF WASHINGTON – 19861 – REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

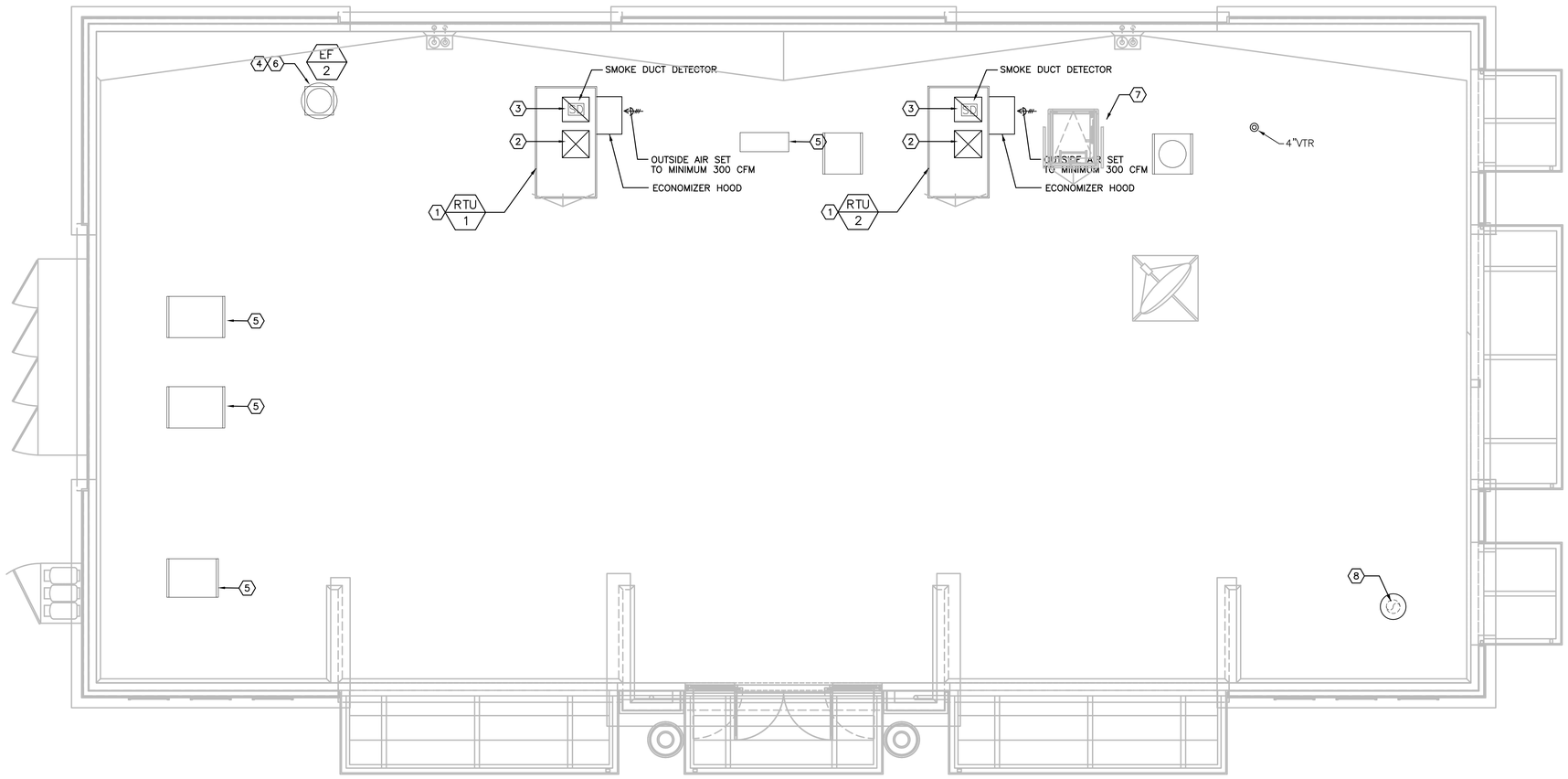
SITE ADDRESS:
1105 MARVIN ROAD NE
@ MARTIN WAY E
LACEY, WASHINGTON

FACILITY #7190

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: – –	PROJECT NO: 22349

DRAWING TITLE:
MECHANICAL FLOOR PLAN

SHEET NO:
M1.0



PLAN KEYNOTES:

1. HEAT PUMP ROOF TOP UNIT W/CURB ATTACHMENT TO ROOF, SEE DETAIL 1/M2.0.
2. FULL SIZE SUPPLY AIR OPENING WITH TRANSITION PER DWGS. ACOUSTICAL LINED SA DUCT DOWN.
3. FULL SIZE RETURN AIR OPENING ACOUSTICAL LINED RA DUCT DOWN, TERMINATE 12" BELOW ROOF.
4. CURB MOUNTED MUSHROOM TYPE (DOWN BLAST) EXHAUST FAN. SEE DETAIL 6/M2.0 INSTALL 10 FEET MINIMUM AWAY FROM ANY FRESH AIR INTAKE OPENINGS.
5. REFRIGERATION EQUIPMENT REMOTE CONDENSER (BY OTHERS). SHOWN FOR REFERENCE ONLY.
6. EXHAUST FAN W/ROOF CURB, INSTALL 10 FEET MINIMUM AWAY FROM ANY FRESH AIR INTAKE OPENINGS.
7. ROOF HATCH, FOR DETAIL SEE ARCHITECTURAL PLANS.
8. 10"ø TOILET EXHAUST WITH ROOF CAP.

01 — **ROOF PLAN - HVAC**
SCALE: 1/4"=1'-0"

NORTH

ABOSSEIN #223054

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NO.	DATE	REVISION DESCRIPTION

SEAL:

ALEXANDER ABOSSEIN
STATE OF WASHINGTON
21984
PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

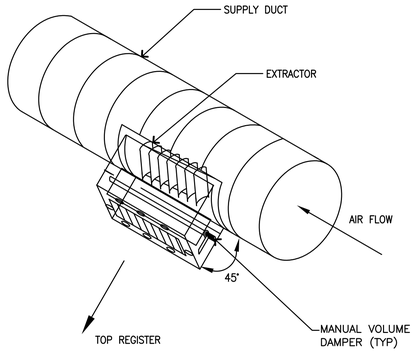
SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

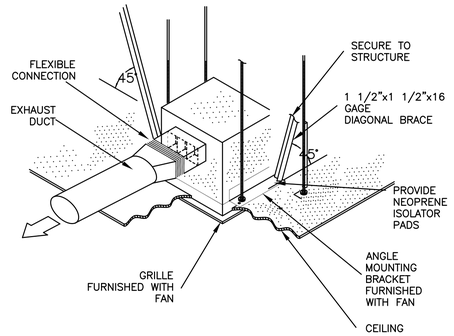
DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: -	PROJECT NO: 21730

DRAWING TITLE:
MECHANICAL ROOF PLAN

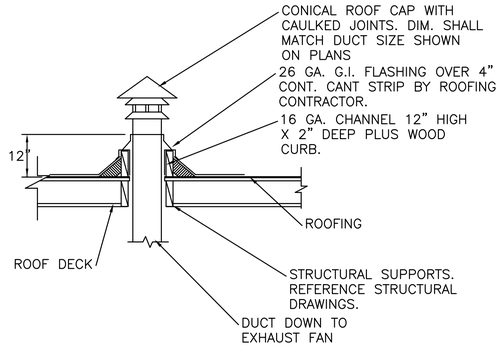
SHEET NO:
M1.1



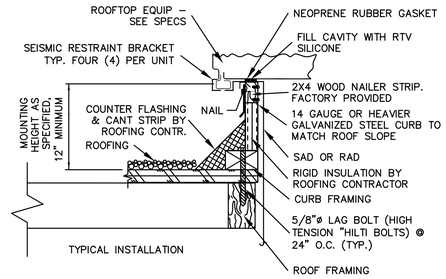
SIDE REGISTER DETAIL — N.T.S. — 4



CEILING EXHAUST FAN DETAIL — N.T.S. — 3

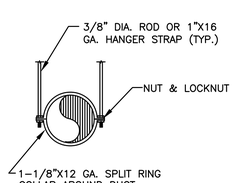


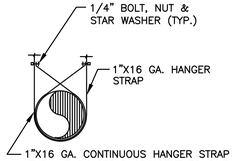
ROOF JACK DETAIL — N.T.S. — 2



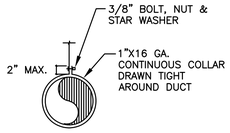
CURB ATTACHMENT TO ROOF — N.T.S. — 1

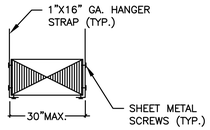
THESE TWO HANGERS ARE FOR DUCTS 25" & LARGER (MAY BE USED ON SMALLER DUCTS)



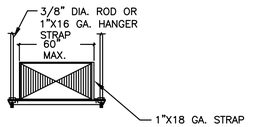


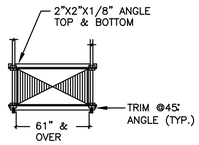
THIS HANGER IS FOR DUCTS 24" DIA. & SMALLER





ROUND DUCT HANGER



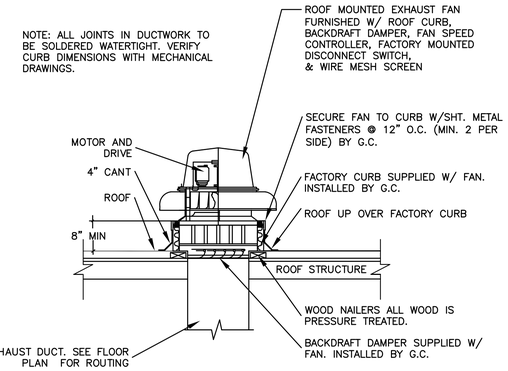


OVAL/RECTANGULAR DUCT HANGER

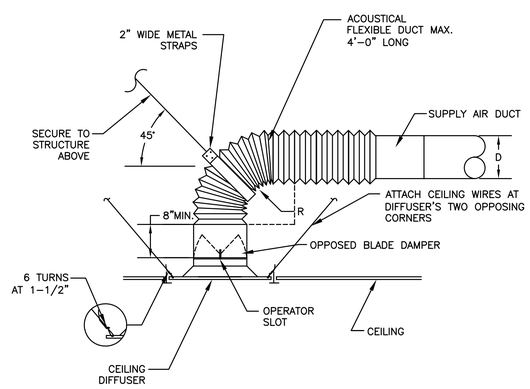
NOTES:

1. REFER TO SPECIFICATIONS FOR HANGER SPACINGS.
2. ATTACHMENTS TO OVERHEAD STRUCTURE SHALL BE MADE IN ACCORDANCE WITH STRUCTURAL ENGINEER'S REQUIREMENTS AND WEIGHT LIMITATIONS. ALL ATTACHMENT METHODS TO STRUCTURE SHALL BE SUBMITTED TO STRUCTURAL ENGINEER FOR REVIEW.

DUCT SUPPORT DETAIL — N.T.S. — 7



MUSHROOM TYPE EXHAUST FAN — N.T.S. — 6



NOTE:

1) IN LIEU OF ABOVE DETAIL METAL PLENUM MAY BE USED TO CONNECT THE BRANCH DUCT TO THE DIFFUSERS. ELBOW R/D=1.5

CEILING DIFFUSER DETAIL — N.T.S. — 5

DUCT CONSTRUCTION MINIMUM SHEET METAL THICKNESSES

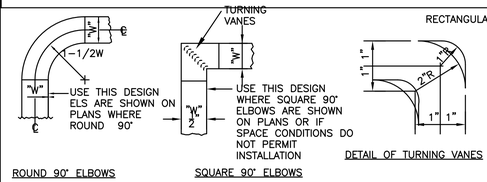
RECTANGULAR DUCTS

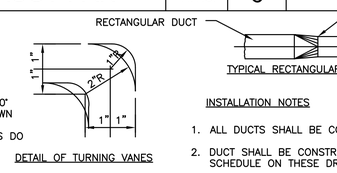
MAXIMUM SIZE (INCHES)	STEEL (MINIMUM THICKNESS, NOMINAL)	ALUMINUM (MINIMUM THICKNESS, NOMINAL)
THROUGH 12	0.022 INCH (26 GAGE, GALV.)	0.020 INCH (NO. 24 B&S GAGE)
13 THROUGH 30	0.028 INCH (24 GAGE, GALV.)	0.025 INCH (NO. 22 B&S GAGE)
31 THROUGH 54	0.034 INCH (22 GAGE, GALV.)	0.032 INCH (NO. 20 B&S GAGE)
55 THROUGH 84	0.040 INCH (20 GAGE, GALV.)	0.040 INCH (NO. 18 B&S GAGE)
OVER 84	0.052 INCH (18 GAGE, GALV.)	0.051 INCH (NO. 16 B&S GAGE)

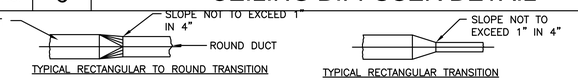
ROUND DUCTS

MAXIMUM SIZE (INCHES)	SPIRAL SEAM DUCT STEEL (MINIMUM THICKNESS, NOMINAL)	LONGITUDINAL SEAM DUCT STEEL (MINIMUM THICKNESS, NOMINAL)	FITTINGS STEEL (MINIMUM THICKNESS, NOMINAL)
THROUGH 12	0.019 INCH (26 GAGE, GALV.)	0.022 INCH (26 GAGE, GALV.)	0.022 INCH (26 GAGE, GALV.)
13 THROUGH 18	0.022 INCH (26 GAGE, GALV.)	0.028 INCH (24 GAGE, GALV.)	0.028 INCH (24 GAGE, GALV.)
19 THROUGH 28	0.028 INCH (24 GAGE, GALV.)	0.034 INCH (22 GAGE, GALV.)	0.034 INCH (22 GAGE, GALV.)
29 THROUGH 36	0.034 INCH (22 GAGE, GALV.)	0.040 INCH (20 GAGE, GALV.)	0.040 INCH (20 GAGE, GALV.)
37 THROUGH 52	0.040 INCH (20 GAGE, GALV.)	0.052 INCH (18 GAGE, GALV.)	0.052 INCH (18 GAGE, GALV.)

SHEET METAL GAGES — N.T.S. — 9







INSTALLATION NOTES

1. ALL DUCTS SHALL BE CONSTRUCTED AND ERECTED IN A NEAT AND WORKMANLIKE MANNER.
2. DUCT SHALL BE CONSTRUCTED OF THE WEIGHTS, GAGES AND MATERIAL SHOWN IN THE SCHEDULE ON THESE DRAWINGS.
3. THE DIMENSIONS SHOWN FOR ALL DUCTS SHOWN IN PLAN GIVE THE WIDTH FIRST AND THEN THE HEIGHT.
4. DUCT RISERS SHOULD BE SUPPORTED BY ANGLES AT EVERY FLOOR.
5. AIR TURN SHALL BE INSTALLED IN ALL ABRUBT ELBOWS TO PREVENT TURBULENCE.
6. DUCTS SHALL BE SECURELY ATTACHED TO THE BUILDING CONSTRUCTION IN AN APPROVED MANNER.
7. DIVERGING TRANSITION PIECES SHALL BE MADE AS GRADUAL AS POSSIBLE.
8. INSTALL FIRE DAMPERS IN ACCORDANCE WITH UL 555.
9. ACCESS PANELS SHOULD BE PLACED BEFORE AND/OR AFTER EQUIPMENT INSTALLED IN THE DUCT.
10. DUCT AREA SHOULD NOT BE DECREASED MORE THAN 10% WHEN OBSTRUCTIONS CANNOT BE AVOIDED, AND THEN A STREAMLINED FITTING SHOULD BE USED.
11. FLEXIBLE FABRIC CONNECTIONS (OR EQUAL) SHOULD BE USED ON BOTH INLETS AND OUTLETS OF ALL FANS AND AIR HANDLING UNITS.
12. JOINTS AND SEAMS OF SUPPLY DUCTS SHALL BE FASTENED SECURELY AND MADE AIR TIGHT.

DUCT CONSTRUCTION DETAILS — N.T.S. — 8

NOT USED — N.T.S. — 10

ABOSSEIN #223054

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CLIENT: bp / ARCO — BP WEST COAST PRODUCTS, LLC

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barghausen.com

NO.	DATE	REVISION DESCRIPTION

SEAL: ALEXANDER ABOSSEIN — WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

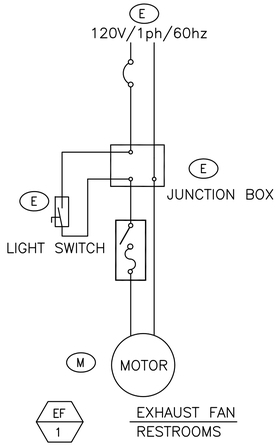
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SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: -	PROJECT NO: 21730

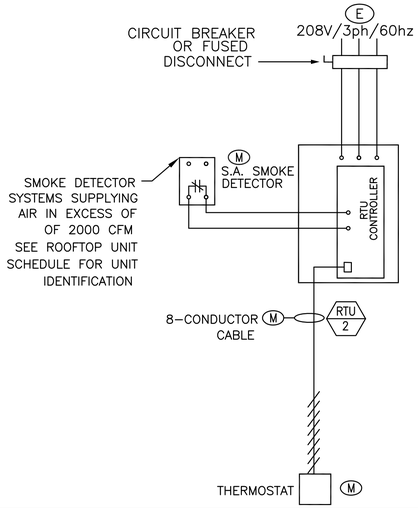
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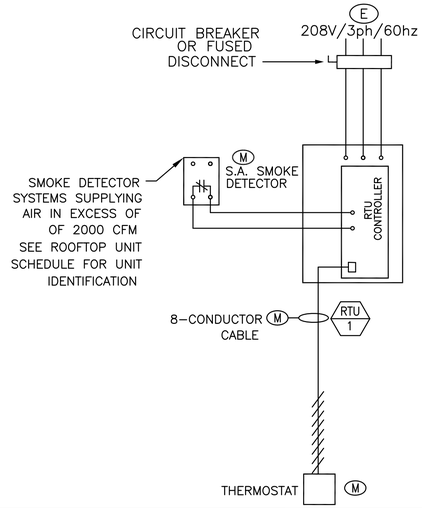
SHEET NO: **M2.0**



NTS

EF-1 CONTROL DIAGRAM | 1



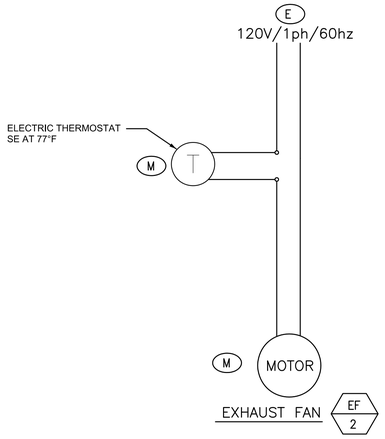


NTS

RTU-1 & RTU-2 CONTROL DIAGRAM | 2

SYMBOL	DESCRIPTION
———	POWER WIRING BY ELECTRICAL CONTRACTOR
- - -	LOW VOLTAGE BY TEMPERATURE MECHANICAL CONTRACTOR
(E)	FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR
(M)	FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR

1. THIS DRAWING IS FOR COORDINATION ONLY.
2. MECHANICAL CONTRACTOR TO PROVIDE DETAILED WIRING DIAGRAMS OF ALL HVAC EQUIPMENT FOR REVIEW AND COORDINATION WITH ELECTRICAL CONTRACTOR.
3. THE FINAL CONNECTION AND SUPERVISION OF ALL CONTROL WIRING AND INTERLOCK WIRING SHALL BE THE RESPONSIBILITY MECHANICAL CONTRACTOR.
4. MECHANICAL CONTRACTOR SHALL INCLUDE IN HIS BID ALL THE WORK PRESENTED ON THIS DRAWING.



NTS

EF-2 CONTROL DIAGRAM | 3

NTS

4

NTS

5

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen
Consulting Engineers, Inc.

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NO.	DATE	REVISION DESCRIPTION

SEAL:

ALEXANDER J. ABOSSEIN
STATE OF WASHINGTON
21808
REGISTERED
PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:

MECHANICAL CONTROLS

SHEET NO:

M2.1

ABOSSEIN #223054

Abossein
Engineering,
L.L.C.

MECHANICAL - ELECTRICAL
CIVIL - LEED
FIRE PROTECTION
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Chvac - Full Commercial HVAC Loads Calculation Program
Abossein Engineering LLC
Redmond, WA 98052

Elite Software Development, Inc.
Page 1

Building Summary Loads

Building peaks in July at 2pm.

Bldg Load Descriptions	Area Quan	Sen Loss	%Tot Loss	Lat Gain	Sen Gain	Net Gain	%Net Gain
Roof	3,771	7,184	7.50	0	2,105	2,103	1.69
Wall	3,877	15,564	16.24	0	6,492	6,492	5.23
Glass	482	11,806	12.32	0	19,221	19,221	15.49
Floor Slab	0	0	0.00	0	0	0	0.00
Skin Loads		34,554	36.06	0	27,816	27,816	22.42
Lighting	3,771	0	0.00	0	16,084	16,084	12.96
Equipment	9,600	0	0.00	200	40,946	41,146	33.16
Pool Latent	0	0	0.00	0	0	0	0.00
People	30	0	0.00	6,000	9,375	15,375	12.39
Partition	0	0	0.00	0	0	0	0.00
Cool. Pret.	0	0	0.00	0	0	0	0.00
Heat. Pret.	0	0	0.00	0	0	0	0.00
Cool. Vent.	650	0	0.00	5,804	8,457	14,261	11.49
Heat. Vent.	650	37,363	38.99	0	0	0	0.00
Cool. Infil.	330	0	0.00	2,866	5,465	8,330	6.71
Heat. Infil.	330	23,898	24.94	0	0	0	0.00
Draw-Thru Fan	0	0	0.00	0	1,072	1,072	0.86
Blow-Thru Fan	0	0	0.00	0	0	0	0.00
Reserve Cap.	0	0	0.00	0	0	0	0.00
Reheat Cap.	0	0	0.00	0	0	0	0.00
Supply Duct	0	0	0.00	0	0	0	0.00
Return Duct	0	0	0.00	0	0	0	0.00
Misc. Supply	0	0	0.00	0	0	0	0.00
Misc. Return	0	0	0.00	0	0	0	0.00
Building Totals		95,816	100.00	14,870	109,214	124,084	100.00

Building Summary	Sen Loss	%Tot Loss	Lat Gain	Sen Gain	Net Gain	%Net Gain
Ventilation	37,363	38.99	5,804	8,457	14,261	11.49
Infiltration	23,898	24.94	2,866	5,465	8,330	6.71
Pretreated Air	0	0.00	0	0	0	0.00
Room Loads	34,554	36.06	6,200	94,220	100,420	80.93
Plenum Loads	0	0.00	0	0	0	0.00
Fan/Duct/Misc Loads	0	0.00	0	1,072	1,072	0.86
Building Totals	95,816	100.00	14,870	109,214	124,084	100.00

Check Figures

Total Building Supply Air (based on a 21° TD):	4,539	CFM
Total Building Vent. Air (14.32% of Supply):	650	CFM
Total Conditioned Air Space:	3,771	Sq.ft
Supply Air Per Unit Area:	1.2038	CFM/Sq.ft
Area Per Cooling Capacity:	364.7	Sq.ft/Ton
Cooling Capacity Per Area:	0.0027	Tons/Sq.ft
Heating Capacity Per Area:	25.41	Btuh/Sq.ft
Total Heating Required With Outside Air:	95,816	Btuh
Total Cooling Required With Outside Air:	10.34	Tons

C:\...\ARCO_PUYALLUP WA_MAIN STORE.CH6 — Monday, September 25, 2023, 04:17 PM

MECHANICAL COMPLIANCE SUMMARY

2018 WSEC Compliance Forms for Commercial Buildings including Group R3, R3 & R4 over 3 stories and all R1 — Administered by: ©2023 NBSA, All rights reserved.

Project & Applicant Information	Project Title	ARCO NTI - 2018 WSEC	For Building Department Use: Date: Sep 25, 2023
	Project Address	SWC S MERIDIAN @ HIGHWAY 512 PUYALLUP, WA 98371	
	Applicant Name	Gary Womack	
	Applicant Phone	425-462-9441	
	Applicant Email	gary_womack@abossein.com	

For questions about this report, contact WSEC Commercial Technical Support at 360-539-5300 or via email at com.techsupport@energycodes.com

General Occupancy	All Commercial		General Building Use Type		Retail, Convenience/Fuel Dispensing	Building Cond. Floor Area	3,771
General Project Types	New Building	New Building or Addition	Single Zone Systems & Equipment	Alteration		Project Cond. Floor Area	3,771
		Mechanical Scope		Mechanical Scope		Floors Above Grade	1
						Compliance Method	Compliance Method 1 - General
Mechanical Project Description	ROOFTOP PACKAGED HEAT PUMPS WITH DOAS						

Mechanical Compliance Scope and Method	Project Type	Mechanical Scope	Economizer Exception(s) Applied?	DOAS Ventilation Provided?	Higher Equipment Efficiency Option Applied?	Equipment Efficiency Compliance Verification
	New Building	Single Zone Systems & Equipment	Yes	Yes	NA	COMPLIES
Additional Efficiency Credits Included (AEC)						
Does building include occupancy classifications requiring DOAS?	Yes		Does project include DOAS equipment?			Yes
Based on project scope do TSPR requirements apply?	No		Do all systems comply with Appendix D standard reference design or qualify for an exception to TSPR?			No

Scope & Space Conditioning	NEW BUILDING - SINGLE ZONE SYSTEMS & EQUIPMENT	Compliance Verification	COMPLIES

Single Zone Air Systems Category - Heat pump, unitary, thru-wall, SHHV

Air Systems Summary Information

System/Equip ID	Quantity of Items	Supply Air/Zone Control	Ventilation Standard	Ventilation CFM (Total If Multiple Items)	Ventilation Air Source	Paired with DOAS	Ventilation energy recovery	Energy Recovery Efficiency (%)
RTU-2		Constant volume	IMC Ventilation	400	Separate DOAS	EHV-1	Yes per C403.7.6 Energy Recovery	77
RTU-3		Variable air volume	IMC Ventilation	400	Separate DOAS	EHV-1	Yes per C403.7.6 Energy Recovery	77

Air Systems & Equipment - Cooling

System/ Equip ID	Cooling System/Equip Type	Specific Type	Cooling Capacity per Item (Btu/h)	AEC Efficiency Multiplier	Econs Exception Multiplier (If 6, 8 #'s)	Consistent Efficiency Multiplier (AEC & Econs)	Proposed Cooling Efficiency	Cit Units	Proposed Part Load Efficiency	PL Units	Efficiency Compliance Verification
RTU-2	Heat pump, air cooled	Single package	84,500	1	0	1	11.9	EER	12.0	IEER	COMPLIES
RTU-3	Heat pump, air cooled	Single package	54,500	1	0	1	14.3	SEER		IEER	COMPLIES

Air Systems & Equipment - Heating

System (Equip ID)	Heating System/Equip Type	Specific Type	Heat Pump Heating Capacity (Btu/h)	Cooling Capacity (Btu/h)	AEC Efficiency Multiplier	Proposed Heat Pump Heating Efficiency	HPH Units	Proposed Low OSA Temp Efficiency	LTH Units	Efficiency Compliance Verification
RTU-2	Heat pump, air cooled, heating	Single package	86,000	84,500	1	13.0	COP	2.3	COP	COMPLIES
RTU-3	Heat pump, air cooled, heating	Single package	57,600	54,500	1	8.2	HSPF		COP	COMPLIES

Air Systems & Equipment Details

System/Equip ID	Area(s) Served	Location In Project Documents - Plan/Detail #	
RTU-2 (Ideal-32891)	ALL SPACES (Ideal-32551)	M1.01(Ideal-32771)	
	System/Equip ID for a single or multiple Items?: Single Item		
	Heating Section/Auxiliary Heating Type: Other source		Economizer Compliance Method: Air-side economizer provided
	WSEC Equip Efficiency Reference Table - Cooling: Table C403.3.2(7) - Unitary and Applied Heat Pumps		
	Proposed Low OSA Temp Efficiency: 3.3		LTH Units: COP
	WSEC Equip Efficiency Reference Table - Heating: Table C403.3.2(7) - Unitary and Applied Heat Pumps		
RTU-3 (Ideal-32891)	ALL SPACES (Ideal-32551)	M1.01(Ideal-32771)	
	System/Equip ID for a single or multiple Items?: Single Item		
	Heating Section/Auxiliary Heating Type: Other source		Economizer Compliance Method: Air-side economizer provided
	WSEC Equip Efficiency Reference Table - Cooling: Table C403.3.2(7) - Unitary and Applied Heat Pumps		
	Proposed Low OSA Temp Efficiency:		LTH Units: COP
	WSEC Equip Efficiency Reference Table - Heating: Table C403.3.2(7) - Unitary and Applied Heat Pumps		

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bp

ARCO

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NO.	DATE	REVISION DESCRIPTION

SEAL:

ALEXANDER ABOSSEIN — WA — OREGON — PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY:	ALLIANCE ZAOM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:

MECHANICAL ENERGY FORMS

SHEET NO:

M3.0

GENERAL NOTES

1. GENERAL CONTRACTOR SHALL VERIFY FIELD CONDITIONS BEFORE SUBMITTING BID.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH NEC, AND ANY ADDITIONAL STATE OR LOCAL CODES WHICH MAY APPLY.
3. GENERAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, CERTIFICATES, ETC. REQUIRED.
4. GENERAL CONTRACTOR SHALL OBTAIN AND PAY FOR BOTH ROUGH AND FINAL UNDER-WRITERS OR OTHER APPROVED INSPECTION AGENCY CERTIFICATES "ELECTRICAL INSPECTION". THESE CERTIFICATES SHALL BE PRESENTED WITH REQUEST FOR FINAL PAYMENT.
5. IT IS THE INTENT OF THESE PLANS TO PROVIDE A COMPLETE OPERATING ELECTRICAL SYSTEM. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL WIRING, EQUIPMENT, MATERIAL. ETC. REQUIRED, EXCEPT WHERE SPECIFICALLY NOTED AS BEING FURNISHED BY OTHERS. SHOULD THERE BE ANY QUESTIONS CONCERNING RESPONSIBILITY, THEY SHALL BE ADDRESSED TO ARCHITECT PRIOR TO BID. NO EXTRA CHARGES WILL BE ALLOWED.
6. ELECTRICAL SERVICE SHALL BE COORDINATED WITH THE EXISTING FIELD CONDITIONS.
7. CONSULT WITH CONTRACTORS FURNISHING HVAC EQUIPMENT AND REFRIGERATION TO VERIFY LOADS AND SECURE EXACT LOCATIONS (REFER TO HVAC DRAWINGS). WIRE AND CONNECT TO ALL HVAC EQUIPMENT. INCLUDING CONTROLS AND THERMOSTATS.
8. CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS TO ALL CONTROLS, OWNER-SUPPLIED EQUIPMENT, MECHANICAL AND PLUMBING EQUIPMENT AS REQUIRED.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATION DETAILS. ALL EXTERIOR WALL MOUNTED LIGHT FIXTURE AND SIGN LOCATIONS SHOWN ON ARCHITECTURAL DRAWINGS SUPERSEDE THOSE SHOWN ON ELECTRICAL PLANS.
10. CIRCUIT NUMBER ON THE DRAWINGS ARE FOR IDENTIFICATION ONLY AND DO NOT INDICATE THE POSITION ON THE PANEL BOARD. CONNECT THE CIRCUITS WITH THE LIGHTEST LOADS AND THE RECEPTACLE CIRCUITS NEAR THE TOP OF THE PANEL, AND THE MORE HEAVILY LOADED CIRCUITS NEAR THE BOTTOM. BALANCE ALL CIRCUITS EVENLY BETWEEN PHASE SO THAT FEEDER WIRES CARRY APPROXIMATELY EQUAL CURRENT. ALL PHASES MUST BE BALANCED WITHIN 10% OR LESS. G.C. SHALL REBALANCE IF NECESSARY.
11. BRANCH CIRCUIT CONDUCTORS SHALL NOT BE LESS THAN #12AWG. THE INSULATION SHALL BE COLOR CODED. AND SHALL BE 600 VOLT. TYPE THHN/THWN COPPER.
12. CABLES IN HIGH TEMPERATURE AREAS SHALL HAVE INSULATION TYPE SUITABLE FOR THE TEMPERATURE. CABLES USED IN SPACES FOR ENVIRONMENTAL AIR SHALL CONFORM WITH APPLICABLE N.E.C REQUIREMENTS.
13. ALL WIRING USED IN RETURN OR DISCHARGE AIR PLENUMS SHALL BE PLENUM RATED OR INSTALLED PER METHODS APPROVED BY THE LATEST EDITION OF THE N.E.C. FOR SUCH APPLICATION.
14. ALL WIRE AND CABLE CONDUCTORS SHALL BE COPPER WITH INSULATION RATED 600V. CONDUCTORS SIZED #10 AWG AND SMALLER SHALL BE SOLID, AND CONDUCTORS SIZED LARGER THAN #10 AWG SHALL BE STANDARD WIRE.
15. BRANCH CIRCUITS FOR POWER AND LIGHTING SHALL NOT BE LESS THAN #12 AWG. OR AS NOTED. WIRES ARE TO BE SIZED FOR THE APPROPRIATE VOLTAGE DROPS.
16. ALL EQUIPMENT AND LIGHT FIXTURES WIRING SHALL NOT BE LESS THAN #12 AWG TYPE SFF-2. AND FLEXIBLE CORDS SHALL NOT BE LESS THAN #12 AWG TYPE S.
17. CONTROL WIRING SHALL NOT BE LESS THAN #14 AWG UNLESS OTHERWISE NOTED.
18. HOMERUNS SHOWN ARE SCHEMATIC. CONTRACTOR MAY ORIGINATE HOMERUNS FROM DIFFERENT LOCATIONS. ALL WIRE INCLUDING HOMERUNS SHALL BE DELINEATED ON AS-BUILT DRAWINGS.
19. ALL WIRING INSTALLED UNDER THIS CONTRACT SHALL BE TESTED FOR PROPER CONNECTIONS AND SHORT CIRCUITS PRIOR TO THE TURNING OVER OF WORK AS A COMPLETE UNIT.
20. PROVIDE ALL ELECTRICAL SYSTEM GROUNDING IN ACCORDANCE WITH N.E.C. REQUIREMENTS EVEN IF IT IS NOT SHOWN ON THE DRAWINGS. INCLUDE ADDITIONAL GROUNDING CONDUCTORS IN NONMETALLIC RACEWAYS EVEN THOUGH THE DRAWINGS SHOW ONLY CIRCUIT AND/OR NEUTRALS CONDUCTORS. THE PLUMBING AND PIPING SYSTEM SHALL NOT BE USED AS A GROUND. ALL TRANSFORMER NEUTRALS SHALL BE GROUNDED TO BUILDING STEEL IN ACCORDANCE WITH NEC 250-70.
21. ALL CONDUITS PASSING THROUGH PARTITIONS ARE TO BE APPROPRIATELY SLEEVED AND SEALED.
22. FURNISH AND INSTALL ALL CONDUIT WITH PULL WIRES AS REQUIRED. ALL OUTLET BOXES SHALL BE STEEL, EXTRA DEEP WITH GROUNDING PIGTAILS. GROUNDING PUSH-CLIPS ARE NOT ACCEPTABLE.
23. ALL SLAB PENETRATIONS SHALL BE INSTALLED AND FIRE RATED PER NATIONAL STATE AND LOCAL CODES
24. DO NOT MAKE ANY CHANGES OR SUBSTITUTIONS WITHOUT SPECIFIC WRITTEN APPROVAL FROM THE ARCHITECT OR ENGINEER.
25. GUARANTEE ALL WORK, MATERIAL AND EQUIPMENT FOR A PERIOD OF ONE YEAR FROM THE DATED OF APPROVAL AND FINAL ACCEPTANCE.
26. THIS DESIGN IS BASED ON INITIAL DESIGN DATA. GENERAL CONTRACTOR TO SUPPLY AND INSTALL FEEDERS, FUSES AND CIRCUIT BREAKERS TO MATCH THE NAMEPLATE RATING OF ALL EQUIPMENT. THIS SHALL BE INCLUDED IN THE INITIAL BID PROPOSAL AND NO EXTRAS SHALL BE ENTERTAINED.
27. THE G.C. SHALL PROVIDE ALL EQUIPMENT. MATERIALS AND LABOR TO COMPLETE ALL ELECTRICAL WORK IN A NEAT AND WORKMANLIKE MANNER AND IN ACCORDANCE WITH GOOD COMMERCIAL PRACTICE INCLUDING THE INSTALLATION OF ALL THE EQUIPMENT MATERIALS AND SYSTEMS AND THE FINAL CONNECTIONS TO THE OWNER'S EQUIPMENT AND FIXTURES AS REQUIRED BY THE OWNER. THE G.C. SHALL ALSO FURNISH TEMPORARY WIRING AND LIGHTING TO PROVIDE A MINIMUM OF 25 FC IN WORK AREAS FOR USE OF ALL THE TRADES DURING CONSTRUCTION AND THE INSTALLATION OF THE OWNERS FIXTURES. THE G.C. IS RESPONSIBLE TO REMOVE ALL TEMPORARY WIRING UPON COMPLETION OF CONSTRUCTION OF ALL TRADES.
28. G.C. SHALL LABEL ALL JUNCTION BOX, OUTLETS, LIGHT SWITCH, ETC. WITH CIRCUIT NUMBER ON INTERIOR OF COVER PLATE.
29. GENERAL CONTRACTOR SHALL PROVIDE SEISMIC RESTRAINTS AND SUPPORTS FOR ALL FLOOR AND CEILING MOUNTED ELECTRICAL EQUIPMENT TO RESIST EARTHQUAKE EFFECTS DETERMINED IN ACCORDANCE WITH THE BUILDING CODE.
30. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND INSTALL ALL SUPPLEMENTARY SUPPORT, INCLUDING SUPPORT STEEL AS REQUIRED TO HANG ALL EQUIPMENT AND LIGHTING FROM THE STRUCTURE IN ACCORDANCE WITH THE ARCHITECTURAL/STRUCTURAL SUPPORT AND APPLICABLE CODE CRITERIA.
31. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO PROVIDE FULLY DIMENSIONED COORDINATION DRAWINGS FOR ALL OF HIS RESPECTIVE WORK. THESE DRAWINGS MUST BE FULL COORDINATED WITH ALL CONDITIONS. ALL HVAC, PLUMBING, FIRE PROTECTION, ELECTRICAL, LIGHTING, STRUCTURAL AND ARCHITECTURAL SYSTEMS PRIOR TO PREPARING COMPOSITE MULTI DISCIPLINE COORDINATION DRAWINGS.
32. ALL DISCONNECTING MEANS AND EQUIPMENT INDICATED ON THE DRAWING SHALL BE IDENTIFIED BY NAMEPLATE IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE 110-22.
33. ALL WIRING FOR THE EMERGENCY LIGHTING AND EMERGENCY SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE ARTICLE 700.
34. THE WIRING METHODS AND MATERIALS INDICATED IN THE SPECIFICATIONS AND ON THE DRAWINGS SHALL BE INSTALLED AND CONNECTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE ARTICLE 300.
35. THE ELECTRICAL SERVICE AND DISTRIBUTION SYSTEM AS INDICATED ON THE RISER DIAGRAM AND MATERIALS INDICATED IN THE SPECIFICATIONS SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE ARTICLE 230.
36. ALL GROUNDING REQUIREMENTS OF THE COMPLETE ELECTRICAL DISTRIBUTION SYSTEM AND AS INDICATED IN THE SPECIFICATIONS SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE ARTICLE 250.
37. ALL OVER CURRENT PROTECTION SHALL BE IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE SECTION 240.
38. PRIOR TO ANY REQUIRED CUTTING AND PATCHING OF CONCRETE FLOOR AND/OR CUTTING OF ROOF CONTRACTOR SHALL COORDINATE WITH BUILDING ENGINEER. SEAL ALL EXTERIOR AND FIREWALL PENETRATIONS.
39. FOR ALL LIGHTING FIXTURES MOUNTED IN SUSPENDED CEILING THE GENERAL CONTRACTOR SHALL PROVIDE AND INSTALL INDIVIDUAL SUPPORT AT EACH CORNER OF RECESSED LIGHTING TROFFER CONNECTED TO BUILDING STRUCTURE ABOVE ALL CONDUIT AND MC CABLE MOUNTED ABOVE SUSPENDED CEILING SHALL BE INDIVIDUALLY SUPPORTED IN THE SAME FASHION AS PER NEC REQUIREMENTS.
40. NO "DOUBLING UP" ON CIRCUIT BREAKERS OR CONDUCTOR SPLICES WITH IN PANEL BOARDS SHALL BE PERMITTED. THE CONTRACTOR SHALL PROVIDE JUNCTION BOXES ADJACENT TO PANELBOARDS AS REQUIRED TO SPLICE COMMON CIRCUITS CONNECTORS.
41. DO NOT SCALE FROM THESE DRAWINGS.
42. PLANS ARE PREPARED WITH REQUIRED BRANCH CIRCUITS INDICATED BY CIRCUITS NUMBERS. PROVIDE AND INSTALL ALL CONDUITS. CONDUCTORS, BOXES, MISCELLANEOUS FITTINGS, ETC. FOR A COMPLETE AND OPERABLE SYSTEM (HOME RUN SHOWN). BRANCH CIRCUIT INSTALLATION SHALL COMPLY WITH SPECIFICATIONS AND N.E.C.
43. IN COMPLIANCE WITH 2018 WASHINGTON STATE ACCESSIBILITY REQUIREMENTS, THE BOTTOM OF RECEPTACLE OUTLETS SHALL NOT BE LESS THAN 15"AFF. THE TOP OF SWITCHES AND OTHER DEVICES SHALL BE NOT MORE THAN 48"AFF OR 44"AFF IF REACHING OVER OBJECT EXCEEDING 20" DEEP. FOR SITES IN OTHER STATES, ACCESSIBILITY REQUIREMENTS ARE TO BE MODIFIED AND FOLLOWED ACCORDINGLY.
44. NATIONALLY RECOGNIZED TESTING LABORATORY SHALL LIST ALL EQUIPMENT IN COMPLIANCE WITH NEC ART. 110.3.
45. ALL EQUIPMENT LISTED IN SCHEDULES SHALL BE PROVIDED WITH REQUIRED POWER CONNECTION, U.O.N.
46. ELECTRICAL CONTRACTOR SHALL FOLLOW LOCK OUT/TAG OUT PROCEDURE PER CAL-OSHA STANDARDS DURING CONSTRUCTION.
47. DUCT DETECTORS SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM TO INITIATE SUPERVISION. THE DUCT DETECTORS SHALL REQUIRE AN ACCEPTANCE FUNCTION TEST AND TEST SHALL BE WITNESSED BY THE FIRE INSPECTOR FOR AUTOMATIC SHUTDOWN. TESTING SHALL BE IN ACCORDANCE WITH 2018 WASHINGTON STATE FIRE CODE AND MANUFACTURER'S INSTRUCTIONS. ALL SUBCONTRACTORS SHALL BE PRESENT HVAC, FIRE ALARM AND ELECTRICAL.
48. GENERAL CONTRACTOR IS TO PROVIDE THE CAROLINA PRODUCTS, INC. UNITIZED PANEL SYSTEM.

DESIGN CODES:

ALL CODES WITH WASHINGTON STATE AMENDMENTS

2018 WASHINGTON STATE BUILDING CODE

2020 NATIONAL ELECTRICAL CODE

2018 WASHINGTON STATE FIRE CODE

2018 WASHINGTON STATE ENERGY CODE - COMMERCIAL PROVISIONS

ABBREVIATIONS AND TAGS 3

ABB.	DESCRIPTION	ABB.	DESCRIPTION
AE	APPROVED EQUIVALENT	WP	WEATHERPROOF
AFF	ABOVE FINISHED FLOOR	EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN	MC	MECHANICAL CONTRACTOR
NTS	NOT TO SCALE	GC	GENERAL CONTRACTOR
PROVIDE	FURNISH, INSTALL AND CONNECT.	AC 1	MECHANICAL UNIT TAG. SEE MECHANICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
GFCI	GROUND FAULT CKT. INTERRUPTER	E-4 4	DETAIL TAG. REFER TO DETAIL 4 ON SHEET NUMBER E-4.
SMD	SEE MECHANICAL DRAWINGS	000	EQUIPMENT UNIT TAG, SEE EQUIPMENT SCHEDULE.
UAC	UNDER ANOTHER CONTRACT	A	ELECTRICAL LIGHTING EQUIPMENT UNIT TAG/TYPE SEE LIGHT FIXTURE SCHEDULE.
UON	UNLESS OTHERWISE NOTED		
LCP	LIGHTING CONTROL PANEL		

WIRE SIZING SCHEDULE 4

20 AMPS, 120V LTG & RECEPTACLE CIRCUITS	
DISTANCE	WIRE SIZE
1' TO 100'	#12 AWG
101' - 150'	#10 AWG
151' - 200'	#10 AWG
201' - 250'	#8 AWG
251' - 300'	#8 AWG
301' & UP	#6 AWG

NOTE:
LINE CONDUCTOR SIZE IS INCREASED TO COMPENSATE FOR VOLTAGE DROP. GROUND CONDUCTOR SIZE SHALL BE INCREASED PROPORTIONATELY WITH THE LINE CONDUCTOR PER NEC 250.122(B)

SWITCH & LOW VOLTAGE SCHEDULES 4

SWITCH SCHEDULE

CALLOUT	SYMBOL	NOTES
CEILING OCCUPANCY SENSOR	(OS)	LOW VOLT
PHOTOSENSOR	(PS)	ILC OR EQUAL, LOW VOLTAGE
SINGLE POLE SWITCH	$	1- POLE, LEVITON OR EQUAL, 120V
THREE WAY SWITCH	$3	3-WAY CAPABLE, 120V
WALL SWITCH WITH OCCUPANCY SENSOR	$OS	1-POLE WITH OCCUPANCY SENSOR, LEVITON OR EQUAL, 120V

TELEPHONE AND DATA SCHEDULE

CALLOUT	SYMBOL	NOTES
COMPUTER OUTLET	◁	(1) CAT 6 CABLE, (1) CAT 6 DATA PORT
DUPLEX TELEPHONE / COMPUTER	◀◁	(2) CAT 6 CABLE, (1) CAT 6 DATA PORT, (1) CAT 6 TELEPHONE PORT

ELECTRICAL LEGEND 1

SYMBOL	DESCRIPTION
$x	SINGLE POLE SINGLE THROW SWITCH, +44" AFF U.O.N. X MEANS: a - CONTROLLING FIXTURE OR OUTLET "a" 2 - DOUBLE POLE 3 - THREE WAY D - DIMMER (RATING AS REQUIRED)
$	LOW VOLTAGE SWITCH FOR LIGHTING CONTROL PANEL
$T	DOUBLE OR THREE POLE HP RATED TOGGLE SWITCH
$OS	SWITCH OCCUPANCY SENSOR WITH MANUAL ON/OFF OVERRIDE BUTTON
PC	PHOTOCELL FOR DAYLIGHT ZONING
S	SMOKE DETECTOR
DH	DIMMER, ACCESSIBLE TYPE CONTROL COMPATIBLE WITH FIXTURE BALLAST IN USE
	DUPLEX RECEPTACLE 20A, 125V, NEMA 5-20R WALL MOUNTED. (WP= WEATHERPROOF, D= DEDICATED, GFI=GROUND FAULT INTERRUPTER)
	DUPLEX RECEPTACLES 20A, 125V, NEMA 5-20R HALF SWITCHED.
	DOUBLE DUPLEX RECEPTACLES, NEMA 5-20R.
	CEILING DUPLEX RECEPTACLE 20A, 125V, NEMA 5-20R (WP= WEATHERPROOF, D= DEDICATED, GFI=GROUND FAULT INTERRUPTER)
	DOUBLE DUPLEX RECEPTACLES, NEMA 5-20R. (FLOOR MOUNTED)
	SPECIAL RECEPTACLE, RATING AS SHOWN.
	JUNCTION OR OUTLET BOX
H	WALL MOUNTED JUNCTION BOX
	(3) CAT-5 DATA OUTLETS. PROVIDE OUTLET BOX AND COVERPLATE WITH CABLING TO TERMINATION POINT.
	FUSED DISCONNECT SWITCH, RATING AS SHOWN
	NON FUSED DISCONNECT SWITCH, RATING AS SHOWN
M	MOTOR OUTLET AND FLEX CONNECTION TO MOTOR.
T	LV INGROUND TRANSFORMER
	FLEXIBLE CONDUIT WITH CONNECTION TO EQUIPMENT
	PANELBOARD/LOAD CENTER, SURFACE, FLUSH.
	BRANCH CIRCUIT WIRING IN CONDUIT CONCEALED IN CEILING OR WALL.
	BRANCH CIRCUIT WIRING IN CONDUIT CONCEALED UNDER FLOOR OR UNDERGROUND.
	BRANCH CIRCUIT HOMERUN TO PANEL.
	CONDUIT UP.
	CONDUIT DOWN.
	FLEXIBLE CONDUIT
	CONDUIT STUBBED OUT IN ACCESSIBLE LOCATION, CAP AND MARK LOCATION.

DRAWING INDEX 2

SHEET NUMBER	DESCRIPTION
E0.1	LEGEND, NOTES & SCHEDULES
E0.2	SPECIFICATIONS
E1.0	LIGHTING PLAN
E1.1	LUMINAIRE SCHEDULE
E1.2	POWER PLAN
E1.3	EQUIPMENT & RECEPTACLE SCHEDULES
E1.4	ELECTRICAL ROUGH-IN PLAN
E1.5	ELECTRICAL ROOF PLAN
E1.6	COMMUNICATION PLAN
E2.0	SINGLE LINE DIAGRAM
E2.1	ELECTRICAL PANEL SCHEDULES
E2.2	ELECTRICAL PANEL SCHEDULES
E3.0	DIAGRAM & DETAILS - PART 1
E3.1	DIAGRAM & DETAILS - PART 2
E4.0	FAULT CURRENT & ARC FLASH SCHEDULES
E5.0	ENERGY CODE FORMS
E5.1	ENERGY CODE FORMS
ES1.0	ELECTRICAL SITE PLAN
ES1.1	ELECTRICAL SITE DETAILS
CWE1.0	CARWASH LIGHTING PLAN
CWE2.0	CARWASH POWER PLAN
CWE2.1	CARWASH PANEL SCHEDULE

ABOSSEIN #223054

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BP WEST COAST PRODUCTS, LLC

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NO.	DATE	REVISION DESCRIPTION
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SEAL:
ALEXANDER J. ABOSSEIN, STATE OF WASHINGTON, 21991, REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #7184

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: -	PROJECT NO: 21730

DRAWING TITLE:
LEGEND, NOTES & SCHEDULES

SHEET NO:
E0.1

SPECIFICATIONS

PART 1 GENERAL

1.01 SCOPE OF WORK

A. FURNISH AND INSTALL ALL MATERIALS AND EQUIPMENT AND PROVIDE ALL LABOR, TOOLS, TRANSPORTATION, SUPERINTENDENCE AND SERVICES REQUIRED AND NECESSARY TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND/OR SPECIFIED HEREIN. ALSO INCLUDE ALL OTHER WORK AND MISCELLANEOUS ITEMS, NOT SPECIFICALLY MENTIONED, BUT REASONABLY INFERRED FOR A COMPLETE INSTALLATION INCLUDING ALL ACCESSORIES AND APPURTENANCES REQUIRED FOR TESTING THE SYSTEM. IT IS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS THAT ALL SYSTEMS BE COMPLETE, AND READY FOR OPERATION.

1.02 REGULATORY REQUIREMENT

A. CODE COMPLIANCE IS MANDATORY. NOTHING IN THESE DRAWINGS AND SPECIFICATIONS PERMITS WORK NOT CONFORMING TO THESE CODES. WHERE WORK IS SHOWN TO EXCEED MINIMUM CODE REQUIREMENTS, COMPLY WITH DRAWINGS AND SPECIFICATIONS. ALL WORK AND MATERIALS SHALL COMPLY WITH THE LATEST RULES, CODES AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

1. OCCUPATIONAL SAFETY AND HEALTH ACT STANDARDS (OSHA).
2. NFPA #70: NATIONAL ELECTRIC CODE (NEC)
3. OSRC
4. STATE BUILDING CODE
5. NFPA #101: LIFE SAFETY CODE.
6. STATE FIRE MARSHAL.
7. LOCAL UTILITY COMPANIES

1.03 LICENSE, FEES, AND PERMITS

A. ELECTRICAL CONTRACTOR SHALL PAY FOR ALL LICENSES, PERMITS AND INSPECTION FEES REQUIRED BY THE AUTHORITY HAVING JURISDICTION AND SHALL ARRANGE FOR ALL REQUIRED INSPECTIONS.

1.04 SAFETY AND INDEMNITY

A. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. NO ACT, SERVICE, DRAWING REVIEW OR CONSTRUCTION REVIEW BY THE OWNER, THE ENGINEERS OR THEIR CONSULTANTS, IS INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON, OR NEAR THE CONSTRUCTION SITE.

1.05 DRAWINGS AND SPECIFICATIONS

A. ALL DRAWINGS AND ALL DIVISIONS OF THESE SPECIFICATIONS SHALL BE CONSIDERED AS A WHOLE AND WORK OF THIS DIVISION SHOWN ANYWHERE THEREIN SHALL BE FURNISHED UNDER THIS DIVISION. DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF EQUIPMENT AND WIRING. MOST DIRECT ROUTING OF CONDUITS AND WIRING IS NOT ASSURED. EXACT REQUIREMENTS SHALL BE GOVERNED BY CONDITIONS OF THE JOB. CONSULT ALL OTHER DRAWINGS IN PREPARATION OF THE BID. EXTRA LENGTHS OF WIRING OR ADDITION OF PULL OR JUNCTION BOXES, ETC., NECESSITATE BY SUCH CONDITIONS SHALL BE INCLUDED IN THE BID.

1.06 CONDITIONS AT SITE

A. VISIT SITE OF THE WORK, COMPARE IT WITH THE DRAWINGS AND SPECIFICATIONS AS TO THE CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED, ASCERTAIN AND CHECK ALL CONDITIONS AND ELEVATIONS AND TAKE ALL MEASUREMENTS WHICH MAY AFFECT THE WORK. NO ALLOWANCE SHALL SUBSEQUENTLY BE MADE FOR ANY EXTRA EXPENSE OR CLAIMS DUE TO FAILURE OR NEGLECT UNDER THIS REQUIREMENT TO MAKE SUCH EXAMINATION, INCLUDING EXAMINATION OF RESTRICTED WORKING CONDITIONS OR SUCH OTHER DIFFICULTIES VISUALLY OBSERVED DURING SITE VISIT. CONTRACTOR IS RESPONSIBLE FOR BECOMING COMPLETELY FAMILIAR WITH THE ARCHITECTURAL AND STRUCTURAL CONDITIONS AND LIMITATIONS WHICH WILL EXIST IN THE BUILDING AND TO PROVIDE ALL LABOR, TOOLS AND MATERIALS REQUIRED TO PRODUCE A COMPLETELY CONCEALED INSTALLATION AS INDICATED ON THE PLANS, SPECIFICATIONS, AND REQUIRED BY THE CODE.

1.07 WORKMANSHIP AND CONTRACTOR'S QUALIFICATIONS

A. ONLY QUALITY WORKMANSHIP WILL BE ACCEPTED. HAPHAZARD OR POOR INSTALLATION WILL BE CAUSE FOR REJECTION OF WORK.

1.08 REQUIRED SUBMITTALS

A. SUBMITTALS, UNLESS OTHERWISE NOTED, SHALL BE A SINGLE PACKAGE OF SIX (6) COPIES SUBMITTED TO OWNER FOR REVIEW. WORK SHALL NOT COMMENCE UNLESS SUBMITTALS HAVE BEEN APPROVED.

B. SUBMIT CUTSHEETS, MATERIAL DATA, AND SHOP DRAWINGS, AS NOTED BELOW. FOR REVIEW WITHIN FIFTEEN (15) DAYS AFTER AWARD OF CONTRACT. SUBMITTALS REQUIRED AS FOLLOWS:

1. BASIC ELECTRICAL MATERIALS INCLUDING BUT IS NOT LIMITED TO:
   A.) WIRING DEVICES – RECEPTACLES, SWITCHES, FACEPLATES
   B.) WIRES, CONNECTORS, TAPES, SPLICES, TERMINATIONS, AND ACCESSORIES
   C.) RACEWAYS AND ACCESSORIES
   D.) DEVICE IDENTIFICATION
2. ELECTRICAL EQUIPMENT
   A.) POWER DISTRIBUTION EQUIPMENT – PANELBOARDS, SWITCHBOARDS, DISCONNECT SWITCHES, CIRCUIT BREAKERS, POWER DISTRIBUTION UNITS, ETC.
   B.) SERVICE ENTRANCE EQUIPMENT – TERMINATION CANS, METERED SWITCHBOARDS, ETC.
3. LIGHTING
   A.) LIGHT FIXTURES AND SUPPORT DEVICES
   B.) LAMPS AND BALLASTS – INCLUDE BALLASTS CERTIFICATION. BALLAST SHALL HAVE LOCAL DISCONNECTS.
   C.) CONTROLS – OCCUPANCY SENSORS, PHOTOCELL, LIGHTING CONTACTORS, LIGHTING CONTROL PANELS, DIMMERS, ETC.
   D.) FIXTURE AND ASSEMBLY WATTAGES
   E.) FOR PROJECTS THAT ARE SUBJECT TO STATE ENERGY CODES, PROVIDE SUBMITTALS CONFIRMING THAT PRODUCTS SUBMITTED MEET THE REQUIRED MANDATORY MEASURES AS WELL AS MEETS MAXIMUM STATED ENERGY CONSUMPTIONS SHOWN IN TITLE 24 LIGHTING COMPLIANCE CALCULATIONS.

C. SUBMIT COMPLETE TEST REPORTS AND ANALYSIS FOR REVIEW WITHIN FIFTEEN (15) DAYS AFTER TESTING.

D. SUBMIT TITLE 24 LIGHTING COMPLIANCE FORMS AT VARIOUS STAGES OF THE PROJECTS, OR AS REQUESTED.

E. SUBMIT VERIFIED PUNCHLIST TWO (2) WEEKS AFTER ISSUANCE DATE. INDICATE PUNCHLIST ITEMS THAT HAVE BEEN COMPLETED BY CONTRACTOR. INCLUDE DATE FOR REPUNCH.

1.09 SUBSTITUTIONS

A. ONE OR MORE MAKES OF MATERIALS OR METHODS MAY HAVE BEEN SPECIFIED TO ESTABLISH THE STANDARD OF QUALITY, WORKMANSHIP, FINISH, AND DESIGN REQUIRED, BUT OTHER MATERIALS OR METHODS EQUAL OR BETTER IN QUALITY, WORKMANSHIP, FINISH, DESIGN, AND GUARANTEED PERFORMANCE, MAY BE SUBMITTED FOR REVIEW AND APPROVAL AS SUBSTITUTION. ALL SUBSTITUTIONS ARE SUBJECT TO REVIEW AND APPROVAL BY ARCHITECT, ENGINEER, AND OWNER.

B. SUBSTITUTIONS SHALL BE REQUESTED IN A WRITTEN FORM AND SHALL BE ACCOMPANIED WITH A SIGNED STATEMENT THAT PROPOSED SUBSTITUTION IS EQUAL, OR BETTER THAN SPECIFIED. ADDITIONAL DOCUMENTATION TO SUBSTANTIATED PROPOSED SUBSTITUTION MAY BE REQUIRED BY OWNER, ARCHITECT, AND ENGINEER. CONTRACTOR SHALL SUBMIT AS DIRECTED.

C. CONTRACTOR SHALL ACCOMPANY REQUEST FOR SUBSTITUTION LETTER WITH A COMPLETED CSI SUBSTITUTION FORM INCLUDE THE COMPARISON FOR FOLLOWING:

1. ELECTRICAL RATING
2. FINISHES
3. SPARE PARTS
4. PERFORMANCE DATA
5. COSTS AND SCHEDULE

D. A WRITTEN SIGNED STATEMENT FROM THE GENERAL CONTRACTOR SHALL ACCOMPANY SUBSTITUTION REQUEST FORM ASSURING THAT:

1. HE HAS VERIFIED DIMENSIONS WITH PROJECT CONDITIONS AND HAS COORDINATED WITH OTHER TRADES. SUBSTITUTION DOES NOT AFFECT DIMENSIONS SHOWN ON DRAWINGS.
2. HE SHALL PAY AND BURDEN THE COSTS FOR CHANGES TO THE PROJECT INCLUDING RE-DESIGN, RE-ENGINEERING AND REVIEW OF SUBSTITUTION. ONLY ONE (1) ENGINEERING REVIEW TIME IS ALLOWED FOR EACH PRODUCT SUBSTITUTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL REVIEW TIME AND SHALL PAY ARCHITECT AND ENGINEER'S TIME AT THEIR PROFESSIONAL RATE SCHEDULE.
3. HE HAS CONFIRMED THAT THE PROPOSED SUBSTITUTION WILL HAVE NO ADVERSE AFFECT ON OTHER TRADES, THE CONSTRUCTION SCHEDULE, OR SPECIFIED WARRANTY REQUIREMENTS.
4. HE HAS CONFIRMED THAT MAINTENANCE AND SERVICE PARTS WILL BE LOCALLY AVAILABLE FOR THE PROPOSED SUBSTITUTION.

E. COST SAVINGS RESULTING FROM SUBSTITUTION SHALL BE RETURNED TO THE CONTRACT OR THE OWNER IF THE SUBSTITUTION IS PERMITTED.

F. NO WORK INVOLVING MATERIALS SUBMITTED FOR SUBSTITUTION SHALL PROCEED UNTIL WRITTEN ACCEPTANCE IS RECEIVED FROM THE OWNER. THE OWNER IS THE FINAL JUDGE OF ACCEPTABILITY OF PREFERRED SUBSTITUTIONS.

1.10 COORDINATION

A. COORDINATE WORK WITH OTHER TRADES TO AVOID CONFLICT AND TO PROVIDE CORRECT ROUGH-IN AND CONNECTION FOR EQUIPMENT FURNISHED UNDER OTHER TRADES THAT REQUIRE ELECTRICAL CONNECTIONS. INFORM CONTRACTORS OF OTHER TRADES OF THE REQUIRED ACCESS TO AND CLEARANCES AROUND ELECTRICAL EQUIPMENT TO MAINTAIN SERVICE ABILITY AND CODE COMPLIANCE.

B. VERIFY EQUIPMENT DIMENSIONS AND REQUIREMENTS WITH PROVISIONS SPECIFIED UNDER THIS SECTION. CHECK ACTUAL JOB CONDITIONS BEFORE FABRICATING WORK. REPORT NECESSARY CHANGES IN TIME TO PREVENT NEEDLESS WORK. CHANGES OR ADDITIONS, SUBJECT TO ADDITIONAL COMPENSATION, WHICH ARE MADE WITHOUT WRITTEN AUTHORIZATION AND AN AGREED PRICE, SHALL BE AT THE CONTRACTOR'S RISK AND EXPENSE.

1.11 CUTTING AND PATCHING

A. ALL CUTTING AND PATCHING REQUIRED FOR WORK OF THIS DIVISION IS INCLUDED HEREIN. COORDINATION WITH GENERAL CONTRACTOR AND OTHER TRADES IS IMPERATIVE. CONTRACTOR SHALL BEAR THE RESPONSIBILITY FOR AND THE ADDED EXPENSE OF ADJUSTING FOR IMPROPER HOLES, SUPPORTS, ETC.

1.12 ACCEPTANCE AND DEMONSTRATION

A. UPON COMPLETION OF THE WORK, AT A TIME TO BE DESIGNATED BY THE OWNER, THE CONTRACTOR SHALL DEMONSTRATE FOR THE OWNER THE OPERATION OF THE ELECTRICAL INSTALLATION, INCLUDING ANY AND ALL SPECIAL ITEMS INSTALLED BY HIM OR INSTALLED UNDER HIS SUPERVISION.

B. PROPERLY SET LIGHTING CONTROL PANELS, AUTOMATIC TIME SWITCHES, ETC. TO PERFORM SWITCHING OPERATIONS IN ACCORDANCE WITH SCHEDULES PROVIDED BY THE OWNER'S REPRESENTATIVE, AND DEMONSTRATE (USING THE MANUFACTURER'S OPERATING INSTRUCTIONS) HOW TO OVERRIDE CONTROLS AND/OR TEST TIME SWITCHES PROGRAMMING.

1.13 RECORD DRAWINGS AND EQUIPMENT DATA

A. MAINTAIN ONE SET OF CLEAN WORKING DRAWINGS AT THE JOB SITE AND ENTER DAILY SUCH "AS-BUILT" INFORMATION AS FEEDER AND SERVICE ROUTES, PULL BOX LOCATIONS AND CHANGES IN LAYOUT OR ARRANGEMENT WHICH OCCUR DURING CONSTRUCTION. DELIVER COMPLETED "RED LINE AS-BUILTS" DRAWINGS TO THE OWNER.

B. SUBMIT TO THE OWNER'S REPRESENTATIVE A SET OF "AS BUILT" DRAWINGS IN VELLUM AND CAD FILE. AS BUILT COMMENTS SHALL BE WRITTEN IN A LEGIBLE MANNER IN THE SAME STYLE AS THE CONTRACT DOCUMENTS. ALSO SUBMIT THREE COPIES OF DATA SHEETS OR OTHER CURRENT MANUFACTURERS' PUBLICATIONS FOR EACH ITEM OF ELECTRICAL EQUIPMENT FURNISHED FOR THE PROJECT INCLUDING AT LEAST THESE DATA:

1. TECHNICAL DESCRIPTION AND REPLACEABLE PARTS LIST.
2. PHYSICAL DESCRIPTION AND INSTALLATION INSTRUCTIONS.
3. USER'S MANUAL AND OPERATING INSTRUCTIONS.
4. MANUFACTURER'S WARRANTY.

1.14 CLEAN-UP

A. RID THE PREMISES OF SCRAP MATERIALS, TRASH AND DEBRIS BOTH DURING CONSTRUCTION AND AT COMPLETION OF THE PROJECT. LEAVE THE BUILDING AND SURROUNDING AREA IN A CLEAN AND ORDERLY CONDITION.

1.15 GUARANTEE

A. GUARANTEE THE INSTALLATION FREE FROM DEFECTS OF WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER DATE OF CERTIFICATION OF FINAL PAYMENT AND PROMPTLY REMEDY ANY DEFECTS DEVELOPING DURING THIS PERIOD, WITHOUT CHARGE.

1.16 TEMPORARY SERVICES

A. PROVIDE ADEQUATE AND SAFE TEMPORARY ELECTRICAL POWER AND LIGHTING THROUGHOUT THE CONSTRUCTION AND FINISHING OF THE PREMISES. IN ADDITION TO SPECIAL OR UNUSUAL REQUIREMENTS, PROVIDE AT LEAST THESE ITEMS:

1. THREE (3) 20-AMP CIRCUITS FOR CONSTRUCTION POWER TOOLS. PROVIDE GFI TEMPORARY CIRCUITS WITH COVERPLATES TO MEET OSHA REQUIREMENTS.
2. THREE OR MORE LIGHT STRINGS SUSPENDED APPROXIMATELY ONE FOOT BELOW THE HEIGHT OF FINISH CEILING WITH LAMPS SPACED NOT MORE THAN TWELVE FEET ON CENTERS. STRINGS SHALL BE RUN THE LENGTH OF THE STORE SPACE PARALLEL TO THE DEMISING WALLS, WITH ONE STRING WITHIN EIGHT FEET OF EACH WALL AND ONE (OR MORE) INTERMEDIATE STRING(S) ARRANGED TO LIMIT THE SPACING BETWEEN ROWS TO SIXTEEN FEET OR LESS.

PART 2 PRODUCTS

2.01 MATERIAL APPROVAL

A. ALL MATERIALS MUST BE NEW AND BEAR UNDERWRITER'S LABORATORIES LABEL. MATERIALS THAT ARE NOT COVERED BY UL TESTING STANDARDS SHALL BE TESTED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY OR A GOVERNMENTAL AGENCY. MATERIAL NOT IN ACCORDANCE WITH THESE SPECIFICATIONS MAY BE REJECTED EITHER BEFORE OR AFTER INSTALLATION.

2.02 BASIC ELECTRICAL MATERIALS

A. CONDUITS AND RACEWAYS

1. RIGID STEEL: HOT-DIPPED GALVANIZED.
2. INTERMEDIATE METAL CONDUIT (IMC): HOT-DIPPED GALVANIZED.
3. ELECTRICAL METALLIC TUBING (EMT): ELECTRO-GALVANIZED.
4. RIGID NON METALLIC CONDUIT (PVC SCHEDULE 40)
5. WIREWAY: CODE GAUGE STEEL, WITH KNOCKOUTS AND HINGED COVER, CORROSION RESISTANT GRAY BAKED ENAMEL FINISH.
6. PROVIDE FITTINGS AND ACCESSORIES APPROVED FOR THE PURPOSE EQUAL IN ALL RESPECTS TO THE CONDUIT OR RACEWAY. EMT CONNECTORS AND COUPLINGS SHALL BE STEEL SET SCREW OR STEEL COMPRESSION TYPE INDOORS AND STEEL COMPRESSION TYPE IN WET LOCATIONS AND OUTDOORS.

B. WIRES AND CABLES:

1. FOR POWER AND LIGHTING SYSTEM 600V OR LESS:
   A.) CONDUCTOR: MINIMUM SIZE #12 AWG.
      i. #12 AND #10 AWG SOLID COPPER
      ii. #8 AWG AND LARGER SHALL BE STRANDED COPPER OR ALUMINUM.
   B.) INSULATION TYPE:
      i. #12 TO #1 AWG: THWN FOR WET OR UNDERGROUND AND THHN FOR DRY LOCATIONS.
      ii. #1/0 THROUGH #4/0 AWG: XHHW (55 MILS).
      iii. #250 MCM AND LARGER: XHHW (65 MILS).
      iv. GROUNDING WIRE: TW.
      v.) METAL CLAD (MC) CABLES
2. FOR SIGNAL AND COMMUNICATIONS CIRCUIT:
   A.) SPECIAL CABLES SHALL BE AS SPECIFIED ON DRAWINGS.
   B.) CONDUCTORS FOR GENERAL USE SHALL BE STRANDED COPPER CONDUCTOR, #16 AWG MINIMUM, WITH THWN INSULATION FOR UNDERGROUND OR WET LOCATIONS AND THHN INSULATION FOR DRY LOCATIONS.
3. ACCEPTABLE PRODUCTS: GENERAL ELECTRIC, ANACONDA, OKONITE, PARANITE OR TRIANGLE PRODUCTS CONFORMING OR EXCEEDING APPLICABLE IPCEA STANDARDS.
   C.) OUTLET BOXES, JUNCTION AND PULLBOXES
1. OUTLET BOXES: 4" SQUARE X 1-1/2" DEEP (OR LARGER) GALVANIZED SHEET STEEL KO-TYPE WITH PLASTER RING AND COVER FOR GENERAL INTERIOR USE AND CAST METAL TYPE FS OR FD WITH MATCHING SCREW COVERS FOR EXTERIOR AND EXPOSED INTERIOR LOCATIONS (GASKETED IN DAMP OR WET LOCATIONS).
2. JUNCTION BOXES (FLOOR BOX NOT INCLUDED) SHALL BE SAME AS OUTLET BOXES UP TO 42 CU. IN. AND CODE-GAUGE STEEL IN LARGER SIZES WITH SURFACE OR FLUSH-TYPE SCREW-MOUNTED TRIMCOVERS, BOTH BOXES AND COVERS INHIBITOR-PRIMED AND PAINTED INSIDE OUT.
3. PULL BOXES SHALL BE SAME AS JUNCTION BOXES UNLESS INDICATED OTHERWISE ON THE DRAWINGS, WITH COVERS.
4. TELEPHONE OUTLET BOXES SHALL BE THE TYPE AND SIZE REQUIRED BY THE SERVING TELEPHONE COMPANY BUT NOT SMALLER THAN 4-11/16" SQUARE X 2-1/8" DEEP WITH SINGLE-GANG RING AND SIERRA #S-754N SPLIT PLATE BUSHING.
5. UNDERGROUND AND SITE JUNCTION BOXES, HANDHOLES, AND MANHOLES
   A.) SHALL BE MADE UP OF PRECAST CONCRETE WITH TRAFFIC RATED STEEL COVERS. EXTENSIONS SHALL BE PROVIDED AS NECESSARY TO MAIN REQUIRED COVERAGE FOR DUCT BANKS.
   B.) PROVIDE 10" X 17' (MIN) FOR PULLBOXES, 36" X 60" (MIN) FOR HANDHOLES, AND 6'X8'X6' (MIN) MANHOLES.

D. WIRING DEVICES AND PLATES

1. WIRING DEVICES AND PLATES SHALL BE LISTED FOR SPECIFIC USE.
2. ALL POWER RECEPTACLES AND SWITCHES FOR GENERAL PURPOSE CIRCUITS SHALL BE NEMA SPECIFICATION GRADE, RATED AS FOLLOWS:
   A.) GENERAL PURPOSE RECEPTACLES: NEMA 5-15R OR 5-20R
   B.) DEDICATED RECEPTACLES: NEMA 5-20R
3. SWITCHES: TWENTY (20) AMPERE.
   A.) IN MECHANICAL AND ELECTRICAL EQUIPMENT ROOMS, ILLUMINATED LIGHT SWITCHES SHALL BE PROVIDED.
4. ALL GENERAL PURPOSE TWENTY (20) A, 125/250 V RECEPTACLES AND 120/277V SWITCHES SHALL CONFORM TO NEMA WD-1 SPECIFICATIONS.
5. UNLESS OTHERWISE INDICATED, WIRING DEVICES AND COVER PLATES SHALL BE FURNISHED AND INSTALLED IN COLOR TO MATCH FINISH SURFACE WHERE IT IS LOCATED ON, I.E., DARK BROWN, BEIGE, WHITE OR STAINLESS STEEL.

E. CONDUIT HANGERS

1. FOR INDIVIDUAL CONDUIT RUNS NOT DIRECTLY FASTENED TO THE STRUCTURE, USE ROD HANGERS MANUFACTURED BY CADDY, UNISTRUT OR POWERSTRUT. FOR MULTIPLE CONDUIT RUNS, USE UNISTRUT OR POWERSTRUT TRAPEZE TYPE CONDUIT SUPPORT DESIGNED FOR MAXIMUM DEFLECTION NOT GREATER THAN 1/8".

2.03 LIGHTING:

A. FURNISH AS DESCRIBED IN THE LIGHTING FIXTURE SCHEDULE.

B. SUPPORTS: PROPER SUPPORTS AND MOUNTING ACCESSORIES, SUCH AS HANGERS, STEMS, YOKES, PLASTER FRAMES, ETC. SHALL BE PROVIDED AS REQUIRED BY THE TYPE OF CEILING INSTALLED. WHERE SWIVEL CANOPIES OR BALL ALIGNERS ARE SPECIFIED, THEY SHALL CAUSE FIXTURE TO HANG PLUMB REGARDLESS OF CEILING SLOPE.

C. FIXTURE DESIGNATION: FIXTURE TYPES ARE DESIGNATED ON DRAWINGS. WHERE ONLY ONE FIXTURE DESIGNATION IS SHOWN, IT APPLIES TO ALL FIXTURES IN THAT ROOM OR AREA. FOR EXACT FIXTURE COUNT AND LOCATION REFER TO REFLECTED CEILING PLAN.

D. WIRE 1-LAMP AND 3-LAMP FLUORESCENT FIXTURES IN TANDEM WHERE REQUIRED BY CODE.

E. BALLASTS: ADVANCE, GE, OR APPROVED HIGH FREQUENCY ELECTRONIC, FULL LIGHT OUTPUT, ENERGY SAVING, CLASS "P", HIGH POWER FACTOR, ETL CERTIFIED, SOUND RATING "A" OR AS INDICATED ON DRAWINGS. F. G. G.

F. EMERGENCY LIGHTING SHALL PROVIDE INITIAL ILLUMINATION OF AT LEAST AN AVERAGE OF 1 FOOT-CANDLE AND A MINIMUM AT ANY POINT OF 0.1 FOOT-CANDLE MEASURED ALONG THE PATH OF EGRESS AT FLOOR LEVEL. ILLUMINATION LEVELS MAY DECLINE TO 0.6 FOOT-CANDLE AVERAGE AND A MINIMUM OF 0.06 FOOT-CANDLE AT THE END OF 90 MINUTES. THIS COMMENT ALSO APPLIES TO SHEET A6.0. THIS SHALL BE VERIFIED DURING ONSITE INSPECTIONS.

G. ELECTRICAL CONTRACTOR SHALL PROVIDE, TO THE LOCAL CITY FIRE MARSHAL'S OFFICE, DOCUMENTATION OF EMERGENCY LIGHTING LEVEL COMPLIANCE BY WAY OF AFTER-HOURS LIGHT METER TEST OR PHOTOMETRIC DOCUMENTATION IN ACCORDANCE WITH CBC § 1008.3.2. PRIOR TO SCHEDULING THE FINAL LIFE SAFETY INSPECTION. PLEASE ADD THIS REQUIREMENT TO THE GENERAL NOTES. AWAITING DOCUMENTATION FROM ELECTRICAL CONTRACTOR UPON INSTALLATION, BALANCING, AND COMMISSIONING. THIS SHALL BE VERIFIED DURING ONSITE INSPECTIONS.

H. EXIT SIGNS SHALL BE PROVIDED WHERE THE EXITS AND/OR EXIT PATHS OF EGRESS TRAVEL THAT ARE NOT IMMEDIATELY VISIBLE TO THE OCCUPANTS SO THAT ALL ACCESS TO EXITS ARE READILY VISIBLE IN ACCORDANCE WITH IBC 1013. THIS SHALL BE VERIFIED DURING ONSITE INSPECTIONS.

2.04 FIRE ALARM SYSTEM: (WHEN REQUIRED)

DESIGN/BUILT BY LICENSED FIRE ALARM CONTRACTOR AS REQUIRED BY THE CITY.

A. IT SHALL BE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND HIS FIRE ALARM CONTRACTOR TO OBTAIN THE REQUIREMENTS AND APPROVAL FROM THE LOCAL FIRE MARSHAL ON ALL FIRE ALARM DEVICES AND WIRING REQUIRED.

B. THE CONTRACTOR SHALL SUBMIT DRAWINGS TO THE CITY FOR DEFERRED APPROVAL OF THE COMPLETE FIRE ALARM SYSTEM DESIGN.

PART 3 EXECUTION

3.01 GENERAL

A. ELECTRIC SYSTEM LAYOUTS INDICATED ON THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION AND WORK OF OTHER TRADES WILL PERMIT. GOVERN EXACT ROUTING OF CABLE AND WIRING AND THE LOCATIONS OF OUTLETS BY THE STRUCTURE AND EQUIPMENT SERVED. TAKE ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS.

B. CONSULT ALL OTHER DRAWINGS, VERIFY SCALES AND REPORT ANY DIMENSIONAL DISCREPANCIES OR OTHER CONFLICTS WITH OWNER BEFORE SUBMITTING BID.

C. ALL HOME RUNS TO PANELBOARDS ARE INDICATED AS STARTING FROM THE OUTLET NEAREST THE PANEL AND CONTINUING IN THE GENERAL DIRECTION OF THAT PANEL. CONTINUE SUCH CIRCUITS TO THE PANEL AS THOUGH THE ROUTES WERE COMPLETELY INDICATED. TERMINATE HOMERUNS OF SIGNAL, ALARM, AND COMMUNICATION SYSTEMS IN A SIMILAR MANNER.

D. AVOID CUTTING AND BORING HOLES THROUGH STRUCTURE OR STRUCTURAL MEMBERS WHEREVER POSSIBLE. OBTAIN PRIOR APPROVAL OF OWNER AND CONFORM TO ALL STRUCTURAL REQUIREMENTS WHEN CUTTING OR BORING THE STRUCTURE IS NECESSARY AND PERMITTED.

E. FURNISH AND INSTALL ALL NECESSARY HARDWARE, HANGERS, BLOCKING, BRACKETS, BRACING, RUNNERS, ETC. REQUIRED FOR EQUIPMENT SPECIFIED UNDER THIS SECTION. INSTALLATION SHALL MEET SEISMIC 4 REQUIREMENTS.

F. PROVIDE NECESSARY BACKING REQUIRED TO INSURE RIGID MOUNTING OF OUTLET BOXES.

G. ELECTRICAL INSTALLATION IN PUBLIC LOCATIONS SHALL BE ACCESSIBLE AND INSTALLATION SHALL COMPLY WITH AMERICAN DISABILITIES ACT (ADA) REQUIREMENTS. ELECTRICAL INSTALLATION SHALL COMPLY WITH APPLICABLE CODES AS LISTED IN CONSTRUCTION DOCUMENTS.

3.02 WIRING METHODS

A. WHEN CONDITIONS DETERMINED IN "A" ABOBE ARE NOT MET, INSTALL ALL WIRING IN RACEWAY, OR USE MC CABLE WHERE APPROVED BY ALL APPLICABLE CODES AND REGULATIONS. CONDUIT SHALL BE RIGID STEEL, IMC OR EMT AS FOLLOWS:

1. ABOVE GROUND: USE RIGID STEEL, IMC OR EMT.
2. WET LOCATIONS: RIGID STEEL OR IMC ONLY.
3. LOCATIONS SUBJECT TO MECHANICAL INJURY (0 TO 3 FT ABOVE FINISH FLOOR): RIGID STEEL OR IMC ONLY.
4. DRY LOCATIONS AND NOT SUBJECT TO MECHANICAL INJURY: EMT, IMC OR RIGID STEEL CONDUIT.
5. UNDERGROUND: USE PVC SCH. 40 WITH RIGID STEEL AT LAST TRANSITION TO ABOVE GROUND.
6. IN SLAB & INSIDE WALLS – PVC SCH. 40.

B. USE FLEXIBLE CONDUITS OR MC CABLE IN THE FOLLOWING APPLICATIONS:

1. FINAL CONNECTIONS TO MOTOR.
2. FINAL CONNECTIONS INTO AND OUT OF THE TRANSFORMER.
3. FINAL CONNECTIONS TO VIBRATING EQUIPMENT.
4. INTER-CONNECTIONS BETWEEN ALL LIGHT FIXTURES (NOT TO INCLUDE HOMERUN FROM FIXTURE OR DEVICE TO PANELBOARD, WHICH MUST BE RIGID).
5. FINAL CONNECTIONS WHERE RIGID CONDUIT IS NOT PRACTICAL.
6. IN WALLS (FOR LIGHT SWITCHES AND 120V POWER RECEPTACLES AND HVAC CONTROL EQUIPMENT).

3.03 INSTALLATION OF CONDUITS:

A. GENERAL:
   1. RUN ALL CONDUIT CONCEALED UNLESS OTHERWISE NOTED OR SHOWN.
   2. RUN ALL CONDUIT PARALLEL TO OR AT RIGHT ANGLES TO CENTER LINES OF COLUMNS AND BEAMS.
   3. CONDUITS ABOVE CEILINGS SHALL NOT OBSTRUCT REMOVAL OF CEILING TILES, LIGHTING FIXTURES, AIR DIFFUSERS, ETC.
   4. CONDUITS SHALL NOT CROSS ANY DUCT SHAFT OR AREA DESIGNATED AS FUTURE DUCT SHAFT HORIZONTALLY. CONDUIT RISERS WHEN ALLOWED IN DUCT SHAFT MUST BE COORDINATED WITH MECHANICAL WORK TO AVOID ANY CONFLICT.

B. CONDUIT SUPPORTS:
   1. SUPPORT CONDUITS WITH UNDERWRITER'S LABORATORIES LISTED STEEL CONDUIT SUPPORTS AT INTERVALS REQUIRED BY THE NATIONAL ELECTRIC CODE. WIRES OR SHEET METAL STRIPS ARE NOT ACCEPTABLE FOR CONDUIT SUPPORT. USE CONDUIT HANGERS FOR ALL CONDUITS NOT DIRECTLY FASTENED TO STRUCTURE AND FOR ALL MULTIPLE CONDUIT RUNS. DO NOT ATTACH ANY CONDUIT TO MECHANICAL DUCTS OR PIPES.
   2. INDIVIDUAL CONDUITS 1/2" AND 3/4" SIZE FOR LIGHTING MAY BE SUPPORTED FROM CEILING SUPPORT WIRES WITH CADDY CLIPS ONLY IF ACCEPTABLE TO LOCAL CODE. ONLY ONE CONDUIT IS PERMITTED TO BE ATTACHED TO ANY CEILING SUPPORT WIRE. HANG SUCH CONDUIT SO AS NOT TO AFFECT LEVEL OF CEILING.
   3. AVOID ATTACHING CONDUIT TO FAN PLENUMS. WHEN IT IS NECESSARY TO SUPPORT CONDUIT FROM FAN PLENUM, PROVIDE A LENGTH OF FLEXIBLE CONDUIT BETWEEN PORTION ATTACHED FAN PLENUM AND PORTION ATTACHED TO THE BUILDING TO MINIMIZE TRANSMISSION OF VIBRATION TO THE BUILDING STRUCTURE.

C. CONDUIT PENETRATION:
   1. PENETRATING FIRE RATED FLOOR OR WALL: INSTALL CONDUIT IN CONDUIT SLEEVE OR FRAMED OPENING. SEAL PENETRATION WITH FIRE RETARDANT SEALANT SPECIFIED HEREIN.
   2. PENETRATING ROOF OR EXTERIOR WALL: AVOID PENETRATING ROOF OR EXTERIOR WALL WHERE POSSIBLE. WHERE PENETRATIONS ARE NECESSARY, BUILDING WEATHERPROOF INTEGRITY MUST BE PRESERVED.
   3. PENETRATING SOUND INSULATED OR AIR PLENUM WALL: INSTALL CONDUIT IN CONDUIT SLEEVE AND SEAL PENETRATION AS DETAILED ON THE DRAWINGS.
   4. PENETRATING NON-FIRE RATED DRY WALL: CONDUIT SLEEVES ARE NOT REQUIRED. PENETRATIONS MUST BE SEALED WITH PLASTER PRIOR TO PAINTING. PENETRATIONS MADE AFTER WALL FINISH IS APPLIED MUST BE AS SMALL AS POSSIBLE AND PROVIDED WITH ESCUTCHEONS, ONE ON EACH SIDE OF WALL.
   5. PENETRATING SUSPENDED CEILING: CUT HOLE AS SMALL AS POSSIBLE TO PERMIT CONDUIT PENETRATION. PROVIDE ESCUTCHEON FOR EACH CONDUIT BELOW CEILING.

3.04 CONNECTIONS TO EQUIPMENT:

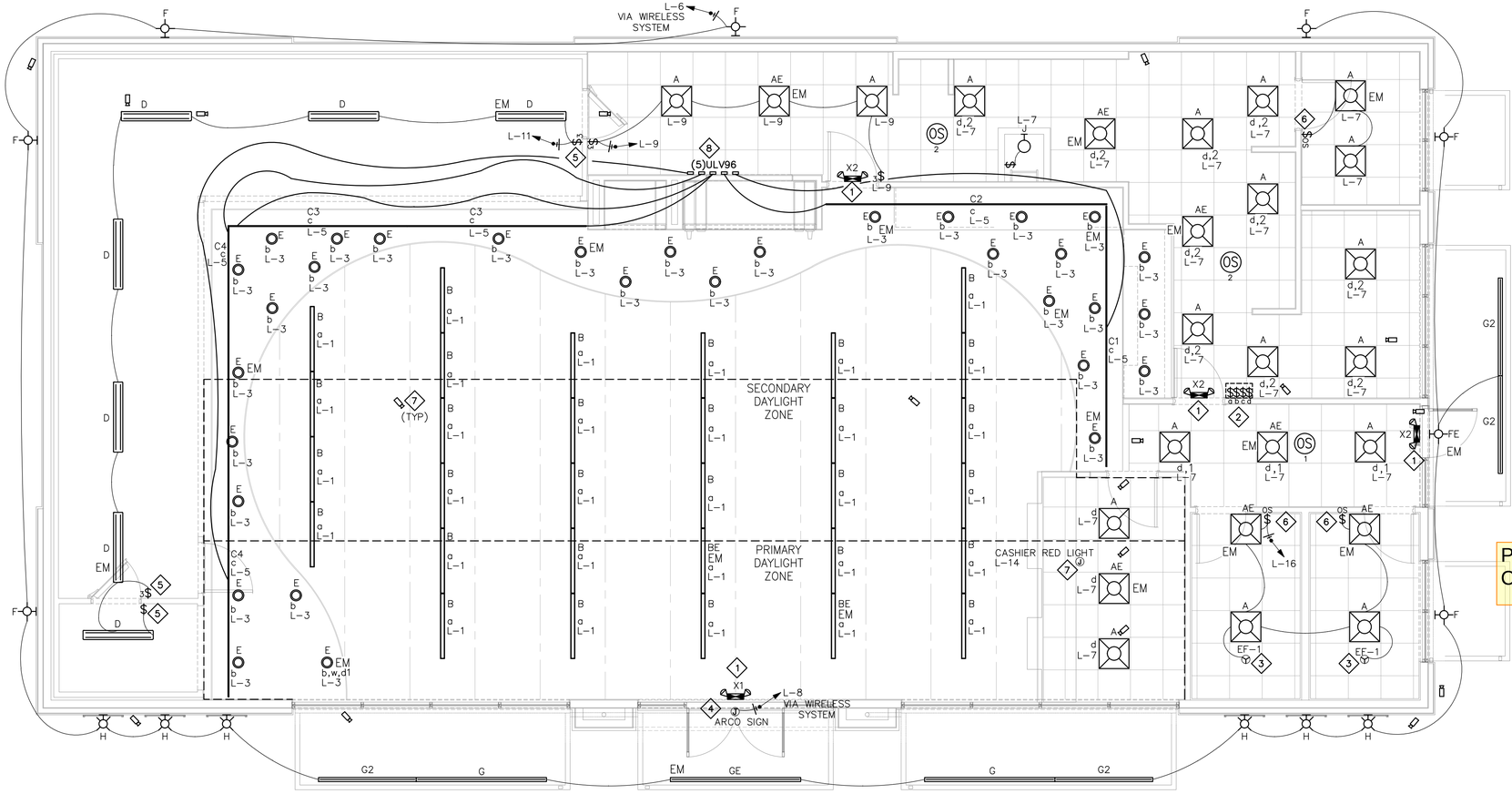
A. GENERAL:
   1. FURNISH AND INSTALL REQUIRED POWER SUPPLY CONDUIT AND WIRING TO ALL EQUIPMENT. SEE BELOW FOR OTHER WIRING REQUIRED.
   2. FURNISH AND INSTALL A DISCONNECT SWITCH IMMEDIATELY AHEAD OF AND ADJACENT TO EACH MAGNETIC MOTOR STARTER OR APPLIANCE UNLESS THE MOTOR APPLIANCE IS LOCATED ADJACENT AND WITHIN SIGHT OF THE SERVING PANELBOARD, CIRCUIT BREAKER OR SWITCH. VERIFY ALL EQUIPMENT NAMEPLATE CURRENT RATINGS PRIOR TO INSTALLATION.
   3. INSTALL ALL ROUGH-IN WORK FOR EQUIPMENT FROM APPROVED SHOP DRAWINGS TO SUIT THE SPECIFIC REQUIREMENTS OF THE EQUIPMENT.
   4. FURNISH AND INSTALL MANUAL THERMAL PROTECTION FOR ALL MO

SHEET NOTES

1. ALL EMERGENCY AND EXIT LIGHTING FIXTURES TO BE CONNECTED TO LOCAL LIGHTING CIRCUIT, AHEAD OF ANY AND ALL SWITCHING.
2. PROVIDE LOCKING LIGHT SWITCHES. FIELD VERIFY SWITCH BANK LOCATION WITH STORE MANAGER.
3. USE LOCAL LIGHTING CIRCUIT FOR EXHAUST FAN. FAN TO RUN WHILE LIGHTS ARE IN USE.
4. JUNCTION BOX PLACED FOR STORE SIGN. COORDINATE EXACT LOCATION WITH SIGN PROVIDER AND OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.
5. INSTALL TIMER SWITCH FOR FREEZER/COOLER LIGHTS PER MANUFACTURERS REQUIREMENTS. FIELD VERIFY EXACT LOCATIONS.
6. PROVIDE DUAL TECHNOLOGY MULTI-WAY WALL SWITCH SENSOR. WATTSTOPPER DW-103 OR EQUAL.
7. SECURITY CAMERA AND MONITOR WIRING SHALL BE PROVIDED BY OWNER'S SECURITY CONTRACTOR. PROVIDE 1/2" CONDUITS TO HEADEND RECORDER WITH PULL WIRE IF REQUIRED BY LOCAL CODE. SECURITY EQUIPMENT LOCATION SHOWN FOR REFERENCE ONLY. FINAL LOCATION TO BE DETERMINED BY SECURITY CONTRACTOR. COORDINATE LOCATION OF CAMERAS AND MONITORS WITH SECURITY CONTRACTOR.
8. KELVIX GRAPHIC SIGN LIGHTING TRANSFORMERS FOR FIXTURE "C".

GENERAL NOTES

1. SEE MECHANICAL EXHAUST FAN SCHEDULE ON SHEET M0.1.
2. ALL OCCUPANCY AND TIMER SWITCHES TO BE PROGRAMMED TO SHUT-OFF CONTROLLED FIXTURES WITHIN 15-MINUTES OF VACANCY.
3. 'EM' AT LIGHT FIXTURE INDICATES LIGHT FIXTURE WITH EMERGENCY BACK UP. ALL EMERGENCY LIGHT FIXTURES SHALL BE SERVED FROM BATTERY BACKUP. EMERGENCY AND EXIT LIGHTS SHALL BE INSTALLED AND CIRCUITED PER THE LATEST NATIONAL ELECTRICAL CODE AND ALL LOCAL CODES (INSTALL A CENTRAL BATTERY SYSTEM WHERE THE USE OF INDIVIDUAL BATTERY UNITS ARE PROHIBITED BY LOCAL CODES). ALL EMERGENCY FIXTURES AND EXIT SIGNS SHALL BE CONNECTED TO UN-SWITCHED HOT LEG OF THE LOCAL LIGHTING CIRCUIT.
4. GENERAL CONTRACTOR SHALL NOTIFY ARCHITECT IMMEDIATELY IF CONFLICT OCCURS BETWEEN LIGHTING AND ANY OTHER TRADE. DO NOT PROCEED WITH INSTALLATION IN THAT AREA UNTIL CONFLICT HAS BEEN RESOLVED TO THE SATISFACTION OF THE ARCHITECT AND ENGINEER.
5. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING INSTRUCTIONS FOR ALL LIGHT FIXTURES. ELECTRICAL CONTRACTOR'S BID SHALL INCLUDE THE INSTALLATION OF ALL LIGHT FIXTURES AND ASSOCIATED LAMPS INCLUDING ALL NECESSARY HARDWARE AND SUPPORT PER SEISMIC REQUIREMENTS.
6. ALL WIRES SHALL BE #12 AWG UNLESS NOTED OTHERWISE.
7. WHERE WIRE SIZES ARE NOTED ON DRAWINGS, THAT SIZE SHALL BE THROUGH THE ENTIRE RUN UNLESS NOTED OTHERWISE.
8. ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.
9. REFER TO BUILDING GUIDANCE STANDARDS FOR MATERIAL SELECTION CRITERIA, FINISHED AND GENERAL WORK RULES.
10. ELECTRICAL DESIGN BASED ON THE REQUIREMENTS OF 2018 WASHINGTON STATE ENERGY CODE. THE FOLLOWING STRATEGIES WERE USED:
    - COMPLETE DESIGN SHALL COMPLY WITH 2018 WASHINGTON STATE ENERGY CODE.
11. GENERAL CONTRACTOR TO PROVIDE PHOTOMETRIC SURVEY REPORT OF BUILDING INTERIOR AREAS TO CONFIRM THAT AT LEAST 50 FOOT-CANDLE LIGHT INTENSITY IS PROVIDED DURING HOURS OF OPERATION IN THE KITCHEN AND FOOD HANDLING AREAS. OTHER AREAS (INCLUDING WALK-IN REFRIGERATOR AND FREEZER UNITS) MAY OPERATE WITH A LIGHT INTENSITY OF AT LEAST 10 FOOT-CANDLES, EXCEPT DURING CLEANING ACTIVITIES WHEN AT LEAST 50 FOOT-CANDLE INTENSITY MUST BE PROVIDED.
12. ALL EMERGENCY LIGHTS SHALL BE PROVIDED WITH UN-SWITCHED CIRCUIT IN ADDITION TO THE SWITCH CIRCUIT SHOWN. SWITCHED AND UN-SWITCHED CIRCUIT SHALL BE SUPPLIED FROM THE SAME BREAKER.
13. EXPOSED CONDUIT TO LIGHT FIXTURES SHALL BE MINIMIZED BUT WHERE EXPOSED SHALL BE STRAIGHT RUNS JUNCTION TO JUNCTION, ORGANIZED AND CONSISTENT IN APPEARANCE.
14. ALL EXTERIOR LIGHT FIXTURES TO BE CONTROLLED THROUGH THE LSI AIRLINK BLUE COMPLETE OUTDOOR LIGHTING WIRELESS MESH SYSTEM. AIRLINK BLUE SYSTEM INCLUDES DAYLIGHT AND MOTION SENSORS WITH DIMMING CONTROL CAPABLE OF AUTOMATICALLY SHUTTING OFF OUTDOOR LIGHTING WHEN DAYLIGHT IS AVAILABLE, EMPLOY AUTO FUNCTIONALITY WHEN AREA BECOMES OCCUPIED, AND CAPABLE OF PROVIDING CONTINUOUS DIMMING THROUGH A 50%-90% RANGE PER 2018 WSEC C405.2.4.1.1. AIRLINK BLUE SYSTEM TO INCLUDE ASTRONOMICAL CLOCK AND TIME KEEPER AIRLINK BLUE COMPONENT FOR SCHEDULING CONTROLS SET PER 2018 WSEC C405.2.6.4. ALL EXTERIOR LUMINAIRES TO INCLUDE FACTORY INTEGRATED BLUETOOTH RADIO/SENSOR CONTROLLERS. AIRLINK BLUE SYSTEM TO BE INITIALIZED VIA WEB APP AND FIELD COMMISSIONED VIA MOBILE APP TO THE OWNER'S REQUIREMENTS. ANY CHANGES OR UPDATES TO BE ACCOMPLISHED ON SITE VIA MOBILE APP.
15. ALL SHOWN WALL LIGHTS SWITCHED TO BE MOUNTED AT +44" A.F.F. UNLESS OTHERWISE STATED.
16. LIGHTING WITHIN SALES AREA EXEMPT FROM 2018 WSEC C405.2.4 DAYLIGHT RESPONSIVE CONTROLS REQUIREMENT DUE TO BEING A GROUP M OCCUPANCY.



1 LIGHTING PLAN
1/4" = 1'-0"

ABOSSEIN #223054

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CIVIL - LEED
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SEAL:

ALEXANDER ABOSSEIN — STATE OF WASHINGTON — 21891 — REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
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DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #7184

DESIGNED BY:	ALLIANCE ZACH:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
LIGHTING PLAN

SHEET NO:
E1.0

LUMINAIRE SCHEDULE

CALLOUT	SYMBOL	LAMP	DESCRIPTION	BALLAST	MOUNTING	MODEL	INPUT WATTS	VOLTS	LOCATION	QUANTITY
A		(1) 30W LED	LED 2x2 RECESSED PANEL LIGHT	0–10V DIMMABLE	RECESSED	LSI SFP22 LED 30 UE DIM 40	30	120V 1P 2W	BACKROOM/UTILITY ELECTRICAL, OFFICE RESTROOMS, 4000K COLOR TEMP (NEUTRAL)	18
AE		(1) 30W LED	LED 2x2 RECESSED PANEL LIGHT WITH EMERGENCY BATTERY	0–10V DIMMABLE WITH EMERGENCY BATTERY	RECESSED	LSI SFP22 LED 30 UE DIM 40 EM	30	120V 1P 2W	BACKROOM/UTILITY ELECTRICAL, OFFICE RESTROOMS, W/EMERGENCY BATTERY PACK FOR 90 MINUTE ILLUMINATION, 4000K COLOR TEMP (NEUTRAL)	7
B		(1) 22.8W LED	4' LED SUSPENDED LINEAR FIXTURE	0–10V DIMMABLE	SUSPENDED	LSI 3RSS–4–LED–06L–LF–UE–30–BLK	22.8	120V 1P 2W	SALES AREA	29
BE		(1) 22.8W LED	4' LED SUSPENDED LINEAR FIXTURE WITH EMERGENCY BATTERY	0–10V DIMMABLE WITH EMERGENCY BATTERY	SUSPENDED	LSI 3RSS–4–LED–06L–LF–UE–30–BLK–EM	22.8	120V 1P 2W	SALES AREA W/EMERGENCY BATTERY PACK FOR 90 MINUTE ILLUMINATION	2
C1		(1) 96W LED	LED LINEAR GRAPHICS FIXTURE WITH POWER SUPPLY	ELECTRONIC	CEILING	KELVIX 502–I–163–DK–40K–WH–PV–SV–ULV (51.5W) WITH 96W–24V POWER SUPPLY ULV96	96	120V 1P 2W	SALES AREA, FIXTURE TO INCLUDE A PERMANENT FACTORY–INSTALLED ENERGY VERIFIED LABEL CERTIFIED BY UL OR COMPARIBLE.	1
C2		(1) 96W LED	LED LINEAR GRAPHICS FIXTURE WITH POWER SUPPLY	ELECTRONIC	CEILING	KELVIX 502–I–166–DK–40K–WH–PV–SV–ULV (51.5W) WITH 96W–24V POWER SUPPLY ULV96	96	120V 1P 2W	SALES AREA, FIXTURE TO INCLUDE A PERMANENT FACTORY–INSTALLED ENERGY VERIFIED LABEL CERTIFIED BY UL OR COMPARIBLE.	1
C3		(1) 96W LED	LED LINEAR GRAPHICS FIXTURE WITH POWER SUPPLY	ELECTRONIC	CEILING	KELVIX 502–I–132–DK–40K–WH–PV–SV–ULV (43.2W) WITH 96W–24V POWER SUPPLY ULV96 FOR (2) 132" RUNS	96	120V 1P 2W	SALES AREA, FIXTURE TO INCLUDE A PERMANENT FACTORY–INSTALLED ENERGY VERIFIED LABEL CERTIFIED BY UL OR COMPARIBLE.	2
C4		(1) 96W LED	LED LINEAR GRAPHICS FIXTURE WITH POWER SUPPLY	ELECTRONIC	CEILING	KELVIX 502–I–145–DK–40K–WH–PV–SV–ULV (48.9W) WITH 96W–24V POWER SUPPLY ULV96	96	120V 1P 2W	SALES AREA, FIXTURE TO INCLUDE A PERMANENT FACTORY–INSTALLED ENERGY VERIFIED LABEL CERTIFIED BY UL OR COMPARIBLE.	2
D		(1) 31.59W LED	REFRIGERATION LIGHT	0–10V DIMMABLE	CEILING	LSI EG3–4–LED–4L–DA–S–UNV–DIM–50–80	31.59	120V 1P 2W	WALK–IN COOLER, FREEZER W/ EMERGENCY BATTERY PACK FOR 90 MINUTE ILLUMINATION, 4508 LUMENS, 143.42 LUMENS/WATT	7
E		(1) 14W LED	LED RECESSED DOWNLIGHT FIXTURE	0–10V DIMMABLE	RECESSED	LSI LAD6–LED–14L–UNV–DIM1–40–WF–TR6R–HAZ	14	120V 1P 2W	SALES AREA, CASHIER, W/EMERGENCY BATTERY PACK FOR 90 MINUTE ILLUMINATION	32
F		(1) 47W LED	WALL MOUNTED LED LIGHT	0–10V DIMMABLE	WALL	LSI XWM–3–LED–06L–50	47	120V 1P 2W	EXTERIOR SIDE & REAR WALLS	7
FE		(1) 59W LED	WALL MOUNTED LED LIGHT WITH EMERGENCY BATTERY BACKUP	0–10V DIMMABLE WITH EM BACKUP	WALL	LSI XWM–3–LED–06L–50–UE–MSV–IMSBT1–BB	59	120V 1P 2W	EXTERIOR SIDE & REAR WALLS, INCLUDES INTEGRAL MOTION AND PHOTOCELL SENSOR AND BATTERY BACKUP CAPABLE OF 90 MINUTES OF EMERGENCY ILLUMINATION.	3
G		(1) 96W LED	AWNING FIXTURE LED	ELECTRONIC	AWNING	LSI 3RWM–8–LED–13L–LF–50	96	120V 1P 2W	FRONT ENTRANCE	2
G2		(1) 72W LED	AWNING FIXTURE LED	ELECTRONIC	AWNING	LSI 3RWM–6–LED–13L–LF–50	72	120V 1P 2W	FRONT ENTRANCE	4
GE		(1) 96W LED	AWNING FIXTURE LED WITH EMERGENCY BATTERY BACKUP	ELECTRONIC	AWNING	LSI 3RWM–8–LED–13L–LF–50–EM	96	120V 1P 2W	FRONT ENTRANCE, INCLUDES BATTERY BACKUP CAPABLE OF 90 MINUTES OF EMERGENCY ILLUMINATION.	1
H		(1) 23W LED	WALL MOUNTED LED GRAPHICS FIXTURE	ELECTRONIC	WALL	LSI XWM–2–LED–03L–50	23	120V 1P 2W	FRONT EXTERIOR	6
J		(1) 12W LED	WALL MOUNTED LED PERMANENT LIGHT FOR ROOF ACCESS	ELV DIMMING	WALL	WAC LIGHTING FM–05RN–930–FINISH BY OTHERS	12	120V 1P 2W	ROOF ACCESS HATCH	1
X1		(1) 1.1W LED	EXIT SIGN WITH BATTERY BACKUP	ELECTRONIC	UNIVERSAL	LSI LPRX–R–U–WH–LD11	1.1	120V 1P 2W	SALES AREA, W/EMERGENCY BATTERY PACK FOR 90 MINUTE ILLUMINATION	1
X2		(1) 0.7W LED	EXIT SIGN W/ BATTERY BACKUP W/O SIGN	ELECTRONIC	UNIVERSAL	LSI EX–R–U–WB–WH–SD2	0.7	120V 1P 2W	BACKROOM, SIDE EXIT, W/EMERGENCY BATTERY PACK FOR 90 MINUTE ILLUMINATION	3

NOTE: FOR KELVIX FIXTURES "C1", "C2", "C3", AND "C4", UTILIZE THE FOLLOWING CONTACT INFORMATION FOR ORDERING:

DJ DIAMOND–GONZALEZ
DDIAMOND–GONZALEZ@KELVIX.COM
800–789–3810 EXT 145
6285 LAKEVIEW BLVD
LAKE OSWEGO, OR 97035

CLIENT:
bp
ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen
Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

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SEAL:
ALEXANDER ABOSSEIN — STATE OF WASHINGTON — 21851 — REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #7184

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
LUMINAIRE SCHEDULE

SHEET NO:
E1.1

ABOSSEIN #223054

Abossein Engineering, L.L.C.
MECHANICAL – ELECTRICAL
CIVIL – LEED
FIRE PROTECTION
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SHEET NOTES

1. COORDINATE ALL STUB–UP LOCATIONS WITH REFRIGERATION CONTRACTOR AND REFRIGERATION EQUIPMENT INSTALLATION DRAWINGS.
2. STUB UP CONDUITS UNDER THE CHECK STAND AND TERMINATE IN SEPARATE 8"x8"x6" BOXES FOR POWER AND LOW VOLTAGE SYSTEMS, MOUNTED 4" ABOVE FINISHED FLOOR COIL 10' OF ALL POWER WIRING.
3. INSTALL (2) 1 1/2"C UNDER FLOOR CONDUITS FOR LOW VOLTAGE – ONE TO THE TELEPHONE BOARD AND ONE TO THE SECURITY PANEL INSIDE OFFICE.
4. RECEPTACLE FOR DVR LOCKING RACK ENCLOSURE MOUNTED AT +94" A.F.F. AT ENCLOSURE CENTER.
5. CARLTON FLOOR PVC FLOOR BOX OR STEEL FLOOR BOX, 4" DIAMETER WITH BRONZE ADJ. RING AND CONDUIT "STEEL CITY" CAT#88DA COVER 3P90 (TYP.). LOCATE 1'–0" IN FRONT OF GONDOLAS, TYP.
6. FOR SECURITY SYSTEM INSTALL CONDUIT WITH PULL BOX AS SHOWN. STANDARD OUTLET BOXES AND PULLBOX WIRING BY OTHER COORDINATE LOCATION WITH MECHANICAL CONTRACTOR.
7. SECURITY ALARM EQUIPMENT. COORDINATE FINAL LOCATION WITH SECURITY CONTRACTOR.
8. TELEPHONE BACKBOARD. INSTALL 2" CONDUIT BETWEEN TELEPHONE BOARD AND SECURITY PANEL.
9. COORDINATE THE SCOPE OF WORK, EQUIPMENT RATING, WIRING REQUIREMENT AND CONTROLS WITH REFRIGERATION EQUIPMENT CONTRACTOR/VENDOR PRIOR TO PROCEEDING WITH WORK. REFER TO KITCHEN/REFRIGERATION EQUIPMENT FOR ADDITIONAL INFORMATION. NOTIFY GENERAL CONTRACTOR IF ANY DISCREPANCY EXISTS BETWEEN EQUIPMENT RATING, WIRING REQUIREMENT ETC. AND THE CURRENT DESIGN.
10. SHOW WINDOW RECEPTACLE TO BE LOCATED WITHIN 18" ABOVE STORE WINDOW. FACE PLATES TO BE PAINTED TO MATCH ADJACENT WALLS.
11. CONNECT TO RESTROOM SWITCHED LIGHTING CIRCUIT, SEE E1.0, E5.0 AND MECHANICAL EQUIPMENT SCHEDULE FOR MORE INFORMATION.
12. PROVIDE J–BOX & ONE 4 PAIR CAT 5/6 TEL. FOR CONNECTION OF ATM MACHINE. COORDINATE EXACT LOCATION AND OTHER REQUIREMENTS WITH OWNER.
13. COORDINATE EXACT LOCATION AND REQUIREMENTS FOR ELECTRIC WATER HEATER WITH PLUMBING CONTRACTOR.
14. J–BOX FOR EVAPORATOR COILS. (PRE–FAB COOLER MANUFACTURER TO DETERMINE EXACT LOCATION.)
15. ELECTRICAL PROVISION FOR AIR CURTAIN CONNECTION. (EXACT LOCATION AND HEIGHT TO BE DETERMINED AT SITE)
16. HOT WATER CIRCULATION PUMP 120V 0.8A. FIELD COORDINATE EXACT LOCATION.
17. PROVIDE (2) 2" CONDUIT FROM ROOF FOR FUTURE SOLAR PANELS. ROUTE CONDUITS TO MAIN DISTRIBUTION SERVICE MSB.
18. PANEL G IS PROVIDED WITH CPI (CAROLINA PRODUCTS, INC.) UNITIZED PANEL SYSTEM. PROVIDE WIREWAYS AS NEEDED TO ENTER CPI PANEL WITH BRANCH CIRCUITING. REFER TO PANEL SCHEDULE ON SHEET E2.1.
19. PROVIDE OCCUPANCY CONTROLLED RECEPTACLE FOR HALF OF ALL DUPLEX RECEPTACLES IN THE OFFICE.
20. CPI UTILIZED ALL–IN–ONE PANEL SYSTEM COMBINING PANELS A, B, C, G, L AND CPI UNITIZED MAIN SWITCHBOARD MDP–1.
21. JBOX FOR HARD WIRED LOW VOLTAGE LAVATORY FAUCET SYSTEM WITH TRANSFORMER.

GENERAL NOTES

A. PROVIDE GFCI PROTECTION FOR ALL 120V 1PH RECEPTACLES AND ALL 208V 3PH RECEPTACLES IN KITCHEN AREA AND FOOD SERVICE AREA PER NEC 210.8(B).

B. ALL WIRES SHALL BE #12 AWG UNLESS NOTED OTHERWISE. PROVIDE SEPARATE NEUTRAL WIRE FOR ALL LIGHTING CIRCUITS BACK TO LIGHTING CONTROL PANEL.

C. ALL 120V. RUNS LONGER THAN 100' SHALL BE #10 WIRE SIZE UNLESS NOTED OTHERWISE ON PLANS.

D. WHERE WIRE SIZES ARE NOTED ON DRAWINGS, THAT SIZE SHALL BE THROUGH THE ENTIRE RUN UNLESS NOTED OTHERWISE.

E. ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS AS REQUIRED FOR A FULLY COMPLETE AND OPERABLE SYSTEM.

F. THE CONTRACTOR SHALL COORDINATE THE EXACT MOUNTING LOCATION OF ALL LIGHT FIXTURES, LIGHT SWITCHES, RECEPTACLES, TELEPHONE/DATA OUTLETS, AND ANY OTHER DEVICE LOCATIONS SHOWN ON THIS PLAN WITH THE ARCHITECTURAL FLOOR PLAN, ARCHITECTURAL REFLECTED CEILING PLAN, AND ARCHITECTURAL INTERIOR ELEVATIONS. DEVICES NOT LOCATED ON THE ARCHITECTURAL DRAWINGS SHALL BE COORDINATED WITH THE ARCHITECT IN THE FORM OF RFI (REQUEST FOR INFORMATION). CONTRACTOR SHALL ASSUME THAT DEVICES ARE TO BE MOUNTED CENTERED ON THE WALLS, SECTION OF WALLS, WINDOWS, ETC. AND THAT ADDITIONAL MOUNTING BRACKETS AND ACCESSORIES SHALL BE A PART OF THE BID PROPOSAL.

G. REFER TO MECHANICAL CONTROLS DIAGRAM FOR ADDITIONAL SCOPE OF WORK, SUCH AS POWER FOR THERMOSTATS, AND OTHER WORK REQUIRED BY ELECTRICAL CONTRACTOR AND NOT SPECIFICALLY MENTIONED IN ELECTRICAL DRAWINGS.

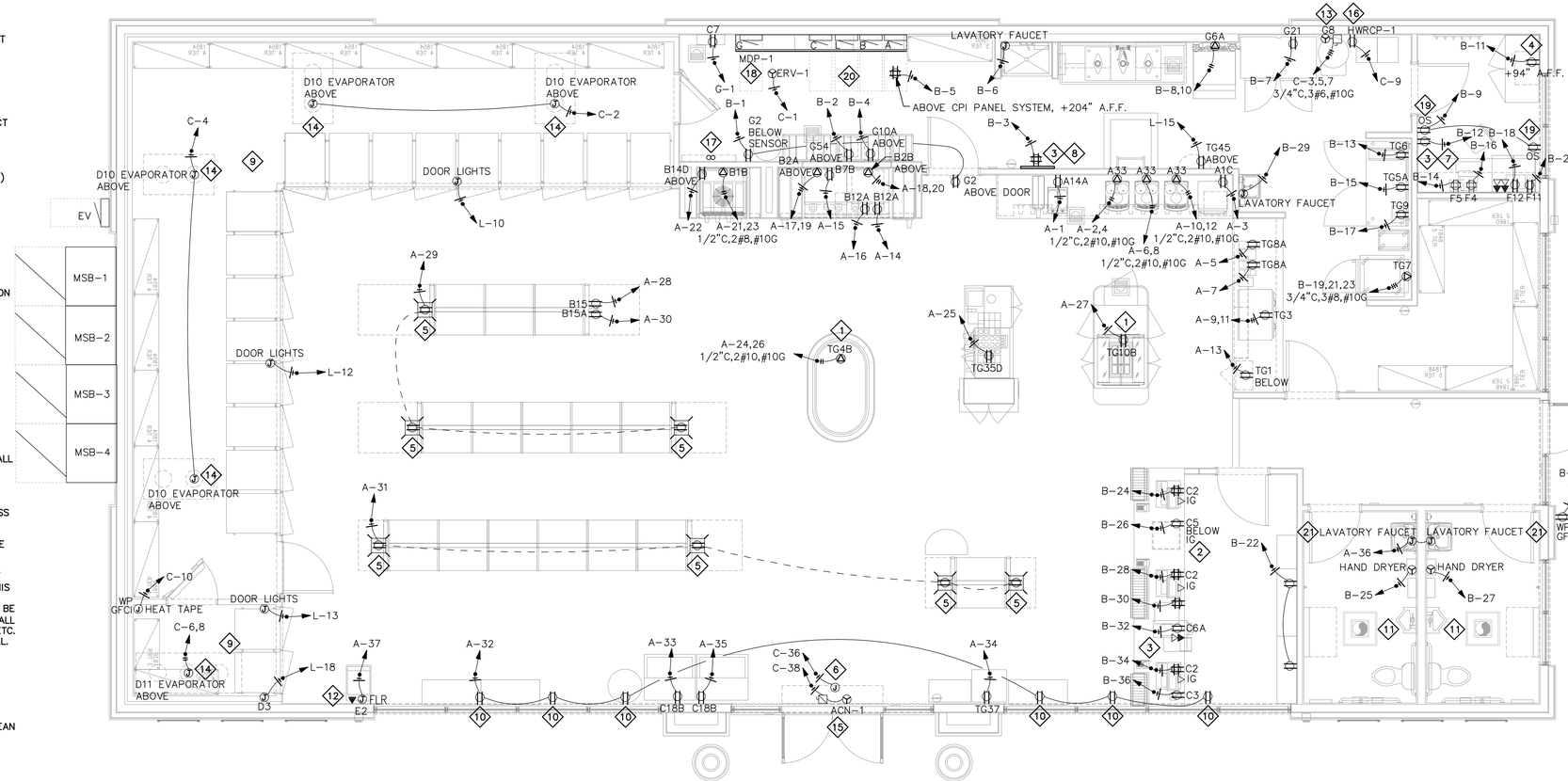
H. REFER TO ARCHITECTURAL DETAILS FOR INSTALLATION OF OUTLETS IN FIRE RATED WALLS.

I. ALL PERMANENTLY CONNECTED (HARD–WIRED) APPLIANCES SHALL BE SERVED WITH DISCONNECTING MEAN WITHIN SIGHT OF THE UNIT, OR THE SERVING CIRCUIT BREAKER IN THE PANEL SHALL BE CAPABLE OF BEING LOCKED IN OPEN POSITION AS REQUIRED PER NEC 422.31.

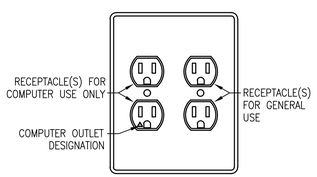
J. REFER TO EQUIPMENT SCHEDULE DRAWING SHEET E2.2 FOR POWER AND OUTLET REQUIREMENTS.

K. FINAL EQUIPMENT LOCATION SHALL BE COORDINATED WITH ARCHITECT. REFER TO DWG. Q1.1 FOR FIXTURE LOCATION.

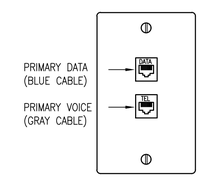
L. ELECTRICAL CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR FOR BUILDING WALL FINISH ACCOMMODATIONS TO ENSURE EARLY INSTALLATION OF THE MAIN SWITCH BOARD, METER AND CT SECTIONS.



1 POWER PLAN
1/4" = 1'-0"



A QUAD RECEPTACLE DETAIL
NOT TO SCALE
SEE PLANS FOR LOCATIONS



B PHONE/DATA WALLPLATE
NOT TO SCALE
SEE PLANS FOR LOCATIONS

NOTE: PROVIDE 3/4" MINIMUM RACEWAY FOR ALL CONCEALED AREAS. STUB CONDUIT INTO ACCESSIBLE AREA. PROVIDE CONNECTOR AND PROTECTIVE BUSHING.

ABOSSEIN #223054

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SEAL:

ALEXANDER ABOSSEIN — STATE OF WASHINGTON — 21889 — REGISTERED PROFESSIONAL ENGINEER

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Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #7184

DESIGNED BY:	ALLIANCE ZACM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
POWER PLAN

SHEET NO:
E1.2

FOOD SERVICE EQUIPMENT SCHEDULE

CALLOUT	SYMBOL	VOLTS	AMPS	MCA	MOCP	KVA	HP	CIRCUIT	WIRE CALLOUT	LOAD TYPE	DISCONNECT
A1C – CAPPUCCINO MACHINE (6 HEAD)		120V 1P 2W	15	18.75	20	1.8		A–3	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
A14A – FROZEN BEVERAGE MACHINE 92 BARREL)		120V 1P 2W	12	15	20	1.44		A–1	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
A33 – COFFEE BEAN–TO–CUP GRINDER		208V 2P 2W	20	25	30	4.16		A–10,12	1/2"C,2#10,#10G	KITCHEN	SPECIAL RECEPTACLE
A33 – COFFEE BEAN–TO–CUP GRINDER		208V 2P 2W	20	25	30	4.16		A–6,8	1/2"C,2#10,#10G	KITCHEN	SPECIAL RECEPTACLE
A33 – COFFEE BEAN–TO–CUP GRINDER		208V 2P 2W	20	25	30	4.16		A–2,4	1/2"C,2#10,#10G	KITCHEN	SPECIAL RECEPTACLE
ARCO SIGN		120V 1P 2W	2.5	3.13	20	0.3		L–8	1/2"C,1#12,#12N,#12G	LIGHTING	JUNCTION BOX
B1B – FROZEN BEVERAGE DISPENSER (4 FLAVOR)		208V 2P 2W	30	37.5	40	6.24		A–21,23	1/2"C,2#8,#10G	KITCHEN	SPECIAL RECEPTACLE
B2A – FOUNTAIN TOP MOUNT ICE MAKER		208/120V 2P 3W	12.5	15.62	20	2.6		A–17,19	1/2"C,2#12,#12N,#12G	KITCHEN	SPECIAL RECEPTACLE
B2B FOUNTAIN ICE MAKER		208/120V 2P 3W	15	18.75	20	3.12		A–18,20	1/2"C,2#12,#12N,#12G	KITCHEN	SPECIAL RECEPTACLE
B12A ICE DRINK DISPENSER		120V 1P 2W	5.25	6.56	20	0.63		A–16	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
B12A ICE DRINK DISPENSER		120V 1P 2W	5.25	6.56	20	0.63		A–14	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
B14D – FCB GRAPHIC FOR 36" CART		120V 1P 2W	8.33	10.41	20	1		A–22	1/2"C,1#12,#12N,#12G	LIGHTING	DUPLEX RECEPTACLE
B15 – F'REAL BLENDER		120V 1P 2W	6.5	18.75	20	0.78		A–28	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
B15A – F'REAL FREEZER		120V 1P 2W	6.5	8.12	20	0.78		A–30	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
C18B – ICE CREAM CASE		120V 1P 2W	12	15	20	1.44		A–33	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
C18B – ICE CREAM CASE		120V 1P 2W	12	15	20	1.44		A–35	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
G6A ICE MACHINE		208V 2P 2W	18	18	20	3.74		B–8,10	1/2"C,2#12,#12G	KITCHEN	SPECIAL RECEPTACLE
G10A – WATER BOOSTER		120V 1P 2W	7.2	9	20	0.86	1/3 HP	B–4	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
G21 – 2–DOOR REACH–IN REFRIGERATOR		120V 1P 2W	7	8.75	20	0.84		B–7	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
G54 – CARBONATOR		120V 1P 2W	7.2	9	20	0.86	1/3 HP	B–2	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
TG1 – MICROWAVE OVEN		120V 1P 2W	15	19	20	1.8		A–13	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
TG3 – FOOD WARMER		208/120V 2P 3W	7.96	9.95	20	1.66		A–9,11	1/2"C,2#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
TG4B – REFRIGERATED SELF–SERVICE ISLAND		208V 2P 2W	23.73	29.66	30	4.94		A–24,26	1/2"C,2#10,#10G	KITCHEN	SPECIAL RECEPTACLE
TG5A – WORKTOP REFRIGERATOR		120V 1P 2W	7.2	9	20	0.86	1/3 HP	B–15	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
TG6 – BUN TOASTER		120V 1P 2W	13	16.25	20	1.56		B–13	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
TG7 – VENTLESS OVEN		208V 3P 3W	29.42	36.77	40	10.6		B–19,21,23	3/4"C,3#8,#10G	KITCHEN	SPECIAL RECEPTACLE
TG8A NACHO CHEESE DISPENSER		120V 1P 2W	1.67	2.08	20	0.2		A–5	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
TG8A NACHO CHEESE DISPENSER		120V 1P 2W	1.67	2.08	20	0.2		A–7	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
TG9 – FOOD LABEL PRINTER		120V 1P 2W	8.33	10.41	20	1		B–17	1/2"C,1#12,#12N,#12G	RECEPTACLE	DUPLEX RECEPTACLE
TG10B – MEDIUM REFRIGERATED CONDIMENT ISLAND		120V 1P 2W	8.33	10.41	20	1		A–27	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
TG35D – FREE STANDING BAKERY CASE		120V 1P 2W	8.33	10.41	20	1		A–25	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE
TG37 – ENERGY ZONE COOLER		120V 1P 2W	11.58	14.47	20	1.39		A–34	1/2"C,1#12,#12N,#12G	KITCHEN	DUPLEX RECEPTACLE

RECEPTACLE SCHEDULE

CALLOUT	SYMBOL	NEMA	VOLTS
C2 – CASH REGISTERS/POS		5–20R	120V 1P 2W
C3 – INTERCOM TO FUEL POSITIONS		5–20R	120V 1P 2W
C5 – SAFE		5–20R	120V 1P 2W
C6A – LOTTO TERMINAL		5–20R	120V 1P 2W
CASHIER RED LIGHT			120V 1P 2W
CONTROLLED RECEPTACLE		5–20R	120V 1P 2W
GFCI			120V 1P 2W
HEAT TAPE			120V 1P 2W
HWRCP–1		5–20R	120V 1P 2W
QUAD		5–20R	120V 1P 2W
RPBA HOT BOX			120V 1P 2W
STANDARD		5–20R	120V 1P 2W
WP GFCI		5–20R	120V 1P 2W

HVAC SCHEDULE

CALLOUT	SYMBOL	VOLTS	AMPS	MCA	MOCP	KVA	HP	CIRCUIT	WIRE CALLOUT	LOAD TYPE	DISCONNECT
ACN–1		120V 1P 2W	4.4	5.5	20	0.53	1/6 HP	C–38	1/2"C,1#12,#12N,#12G	MOTOR	FUSED
EF–1		120V 1P 2W	3.9	4.25	20	0.47	1/8 HP	L–16	1/2"C,1#10,#10N,#10G	MOTOR	HARDWIRED CONNECTION
EF–1		120V 1P 2W	3.9	4.25	20	0.47	1/8 HP	L–16	1/2"C,1#10,#10N,#10G	MOTOR	HARDWIRED CONNECTION
EF–2		120V 1P 2W	5.8	7.25	20	0.7	1/4 HP	C–12	1/2"C,1#10,#10N,#10G	MOTOR	TOGGLE SWITCH
ERV–1		120V 1P 2W	6	6	15	0.72		C–1	1/2"C,1#12,#12N,#12G	HEATING AND COOLING MOTOR	HARDWIRED CONNECTION
RTU–1		208V 3P 3W	50.4	63	70	18.16		C–19,21,23	1"C,3#4,#8G	HEATING AND COOLING MOTOR	FUSED
RTU–2		208V 3P 3W	68	85	100	24.5		C–25,27,29	1–1/4"C,3#2,#8G	HEATING AND COOLING MOTOR	FUSED

MISCELLANEOUS SCHEDULE

CALLOUT	SYMBOL	VOLTS	AMPS	MCA	MOCP	KVA	HP	CIRCUIT	WIRE CALLOUT	LOAD TYPE	DISCONNECT
AIR/WATER UNIT		120V 1P 2W	12.5	15.625	20	1.5		CW–3	3/4"C,1#8,#8N,#8G	NONCONTINUOUS	HARDWIRED CONNECTION
B2C – ICE MAKER REMOTE CONDENSING UNIT		120V 1P 2W	13	16.25	20	1.56		C–15	1/2"C,1#12,#12N,#12G	KITCHEN	NON–FUSED
B2E – ICE MAKER REMOTE CONDENSING UNIT		208V 2P 2W	7.5	9.37	25	1.56		C–14,16	1/2"C,2#12,#12G	KITCHEN	NON–FUSED
B7B – ILLUMINATED DISPLAY BOARD		120V 1P 2W	8.33	10.41	20	1		A–15	1/2"C,1#12,#12N,#12G	LIGHTING	DUPLEX RECEPTACLE
C7 – TANK MONITOR EQUIPMENT		120V 1P 2W	15	18.75	20	1.8		G–1	1/2"C,1#12,#12N,#12G	CONTINUOUS	DUPLEX RECEPTACLE
D3 – WALK–IN FREEZER GLASS DOOR ASSEMBLY DISPLAY		120V 1P 2W	7.17	8.96	20	0.86		L–18	1/2"C,1#10,#10N,#10G	LIGHTING	JUNCTION BOX
D10A – CU–1		208V 3P 3W	11.08	13.84	20	3.99	3 HP	C–18,20,22	1/2"C,3#12,#12G	KITCHEN	FUSED
D10A – CU–2		208V 3P 3W	11.08	13.84	20	3.99	3 HP	C–24,26,28	1/2"C,3#12,#12G	KITCHEN	FUSED
D10 EVAPORATOR COILS		120V 1P 2W	3.5	4.37	20	0.42	1/10 HP	C–2	1/2"C,1#12,#12N,#12G	KITCHEN	JUNCTION BOX
D10 EVAPORATOR COILS		120V 1P 2W	3.5	4.37	20	0.42	1/10 HP	C–2	1/2"C,1#12,#12N,#12G	KITCHEN	JUNCTION BOX
D10 EVAPORATOR COILS		120V 1P 2W	3.5	4.37	20	0.42	1/10 HP	C–4	1/2"C,1#10,#10N,#10G	KITCHEN	JUNCTION BOX
D10 EVAPORATOR COILS		120V 1P 2W	3.5	4.37	20	0.42	1/10 HP	C–4	1/2"C,1#10,#10N,#10G	KITCHEN	JUNCTION BOX
D11A – CU–3		208V 3P 3W	11.08	13.85	20	3.99	3 HP	C–30,32,34	1/2"C,3#10,#10G	KITCHEN	FUSED
D11 EVAPORATOR COILS		208V 2P 2W	2.02	2.52	20	0.42	1/10 HP	C–6,8	1/2"C,2#10,#10G	KITCHEN	JUNCTION BOX
DIESEL TURBINE #1		208V 3P 3W	7.49	9.37	20	2.7		G–14,16,18	1/2"C,3#10,#10G	MOTOR	HARDWIRED CONNECTION
DISPENSER #1		120V 1P 2W	12.5	15.62	20	1.5		G–3	1/2"C,1#12,#12N,#12G	NONCONTINUOUS	SPECIAL RECEPTACLE
DISPENSER #2		120V 1P 2W	12.5	15.62	20	1.5		G–9	1/2"C,1#12,#12N,#12G	NONCONTINUOUS	SPECIAL RECEPTACLE
DISPENSER #3		120V 1P 2W	12.5	15.62	20	1.5		G–15	1/2"C,1#12,#12N,#12G	NONCONTINUOUS	SPECIAL RECEPTACLE
DISPENSER #4		120V 1P 2W	12.5	15.62	20	1.5		G–21	1/2"C,1#10,#10N,#10G	NONCONTINUOUS	SPECIAL RECEPTACLE
DISPENSER #5		120V 1P 2W	12.5	15.62	20	1.5		G–27	1/2"C,1#12,#12N,#12G	NONCONTINUOUS	SPECIAL RECEPTACLE
DISPENSER #6		120V 1P 2W	12.5	15.62	20	1.5		G–33	1/2"C,1#10,#10N,#10G	NONCONTINUOUS	SPECIAL RECEPTACLE
COOLER DOOR LIGHTS		120V 1P 2W	2.08	2.6	20	0.25		L–10	1/2"C,1#12,#12N,#12G	LIGHTING	JUNCTION BOX
COOLER DOOR LIGHTS		120V 1P 2W	2.08	2.6	20	0.25		L–12	1/2"C,1#12,#12N,#12G	LIGHTING	JUNCTION BOX
COOLER DOOR LIGHTS		120V 1P 2W	2.08	2.6	20	0.25		L–13	1/2"C,1#10,#10N,#10G	LIGHTING	JUNCTION BOX
E2 ATM		120V 1P 2W	8.33	10.41	20	1		A–37	1/2"C,1#10,#10N,#10G	NONCONTINUOUS	JUNCTION BOX
ESO SWITCH		120V 1P 2W	6.25	7.81	20	0.75		G–22	3/4"C,1#8,#8N,#8G	NONCONTINUOUS	SPECIAL RECEPTACLE
ESO SWITCH		120V 1P 2W	6.25	7.81	20	0.75		G–22	3/4"C,1#8,#8N,#8G	NONCONTINUOUS	SPECIAL RECEPTACLE
F4 COMPUTER SYSTEM		120V 1P 2W	2.53	3.16	20	0.3		B–16	1/2"C,1#12,#12N,#12G	RECEPTACLE	QUAD RECEPTACLE
F5 CCTV–RECORDER/DVR/MONITOR		120V 1P 2W	7	8.75	20	0.84		B–14	1/2"C,1#12,#12N,#12G	RECEPTACLE	QUAD RECEPTACLE
F11 BATTERY BACKUP		120V 1P 2W	3	3.75	20	0.36		B–20	1/2"C,1#12,#12N,#12G	RECEPTACLE	DUPLEX RECEPTACLE
F12 PRINTER		120V 1P 2W	8.33	10.41	20	1		B–18	1/2"C,1#12,#12N,#12G	RECEPTACLE	DUPLEX RECEPTACLE
FUTURE VENT DIAGNOSTICS		120V 1P 2W	12.5	15.62	20	1.5		G–20	3/4"C,1#8,#8N,#8G	NONCONTINUOUS	JUNCTION BOX
G6C – ICE MAKER REMOTE CONDENSING UNIT		208V 2P 2W	12.5	15.62	25	2.6		C–11,13	1/2"C,2#12,#12G	KITCHEN	NON–FUSED
G8 – WH–1		208V 3P 3W	33.31	41.64	50	12		C–3,5,7	3/4"C,3#6,#10G	HEATING	NON–FUSED
HAND DRYER		120V 1P 2W	11.67	14.58	20	1.4		B–27	1/2"C,1#12,#12N,#12G	MOTOR	HARDWIRED CONNECTION
HAND DRYER		120V 1P 2W	11.67	14.58	20	1.4		B–25	1/2"C,1#12,#12N,#12G	MOTOR	HARDWIRED CONNECTION
ILLUMINATED LOGO SIGN		120V 1P 2W	4.17	5.21	20	0.5		L–24	1/2"C,1#10,#10N,#10G	LIGHTING	SPECIAL RECEPTACLE
ILLUMINATED LOGO SIGN		120V 1P 2W	4.17	5.21	20	0.5		L–28	1/2"C,1#10,#10N,#10G	LIGHTING	SPECIAL RECEPTACLE
ILLUMINATED LOGO SIGN		120V 1P 2W	4.17	5.21	20	0.5		L–26	1/2"C,1#10,#10N,#10G	LIGHTING	SPECIAL RECEPTACLE
LAVATORY FAUCET		120V 1P 2W	1.5	1.9	20	0.18		B–6	1/2"C,1#12,#12N,#12G	NONCONTINUOUS	JUNCTION BOX
LAVATORY FAUCET		120V 1P 2W	1.5	1.9	20	0.18		B–29	1/2"C,1#12,#12N,#12G	NONCONTINUOUS	JUNCTION BOX
LAVATORY FAUCET		120V 1P 2W	1.5	1.9	20	0.18		A–36	1/2"C,1#10,#10N,#10G	NONCONTINUOUS	JUNCTION BOX
LAVATORY FAUCET		120V 1P 2W	1.5	1.9	20	0.18		A–36	1/2"C,1#10,#10N,#10G	NONCONTINUOUS	JUNCTION BOX
MONUMENT SIGN		120V 1P 2W	2	2.5	20	0.24		L–23	3/4"C,1#8,#8N,#8G	LIGHTING	SPECIAL RECEPTACLE
MONUMENT SIGN		120V 1P 2W	2	2.5	20	0.24		L–21	1/2"C,1#10,#10N,#10G	LIGHTING	SPECIAL RECEPTACLE
TG45 – UV FLY LIGHT		120V 1P 2W	8.33	10.41	20	1		L–15	1/2"C,1#12,#12N,#12G	LIGHTING	DUPLEX RECEPTACLE
UNLEADED PREMIUM TURBINE #1		208V 3P 3W	7.49	9.37	20	2.7		G–8,10,12	1/2"C,3#10,#10G	MOTOR	HARDWIRED CONNECTION
UNLEADED TURBINE #1		208V 3P 3W	7.49	9.37	20	2.7		G–2,4,6	1/2"C,3#10,#10G	MOTOR	HARDWIRED CONNECTION

ABOSSEIN #223054

Abossein Engineering, L.L.C.

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bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
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SEAL:

ALEXANDER J. ABOSSEIN — STATE OF WASHINGTON — 21897 — REGISTERED — PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI

3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #7184

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:

EQUIPMENT & RECEPTACLE SCHEDULES

SHEET NO:

E1.3

EQUIPMENT ELECTRICAL LEGEND	
○	CONDUIT STUB-UP
■	ELECTRICAL ROUGH-IN LOCATION
+12"	HEIGHT OF ROUGH-IN ABOVE FINISHED FLOOR

GENERAL NOTES

A. ALL DIMENSIONS FOR UTILITIES LOCATED IN SLAB SHALL BE FROM OUTSIDE FACE OF FOUNDATION TO CENTER OF ROUGH-IN. ALL OTHER DIMENSIONS ARE FROM FACE OF STUD WALL TO CENTER OF ROUGH-INS.

B. ALL SERVICES SHOWN WITH SYMBOLS ON FACE OF STUD WALL SHALL HAVE CONDUIT BROUGHT TO THAT POINT CONCEALED IN WALL AND STUBBED OUT IN WALL, CENTERED AT HEIGHT SHOWN. DO NOT STUB OUT OF FLOOR AND RUN EXPOSED UP FACE OF WALL UNLESS OTHERWISE NOTED.

C. REFER TO SHEET NO. E0.1 FOR LEGEND.

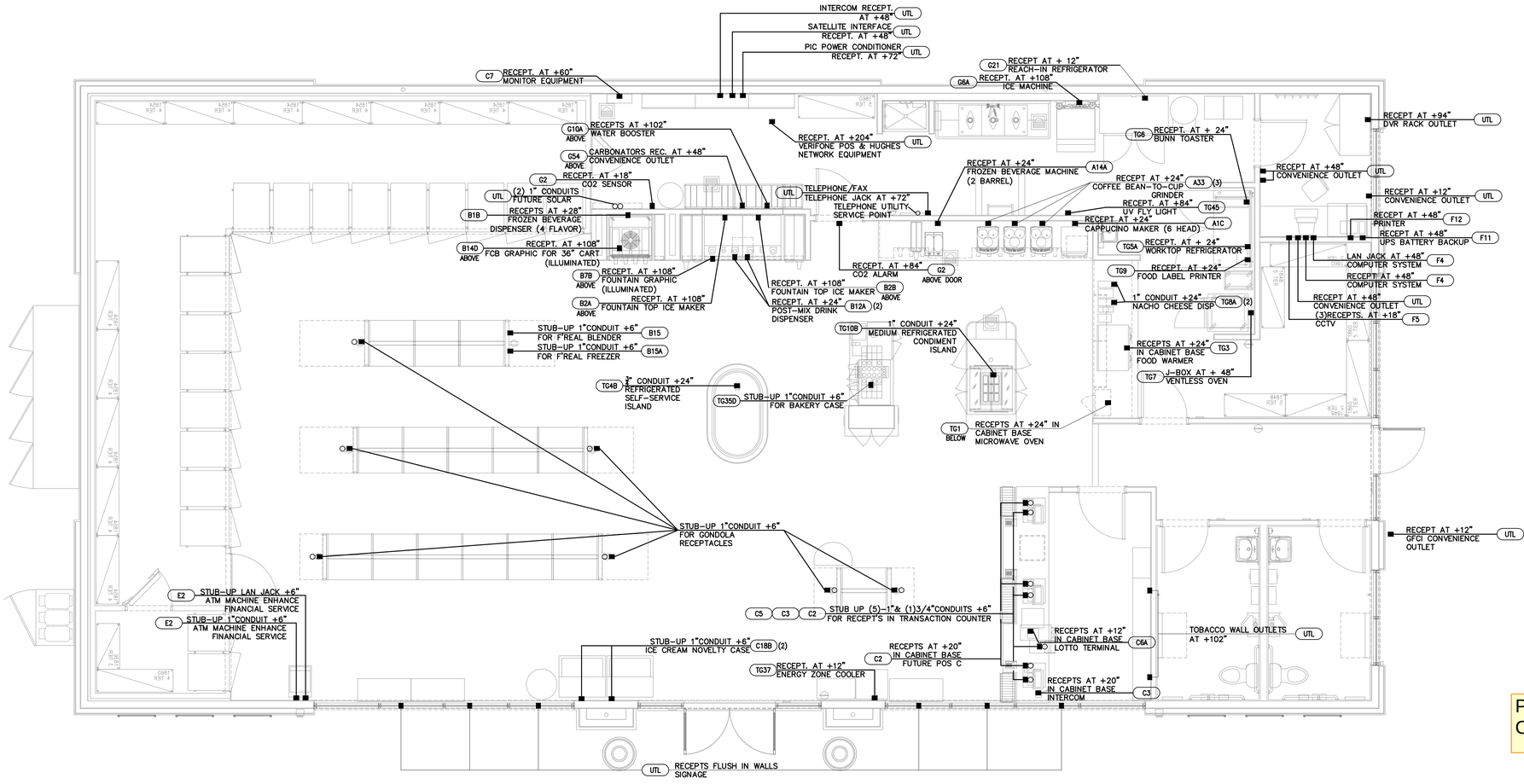
DISCONNECT ON UNIT (ON ROOF) — ICE MAKER REMOTE CONDENSING UNIT — B2C

DISCONNECT ON UNIT (ON ROOF) — ICE MAKER REMOTE CONDENSING UNIT — B2E

DISCONNECT ON UNIT (ON ROOF) — WALK-IN COOLER REMOTE CONDENSING UNIT — D10A

DISCONNECT ON UNIT (ON ROOF) — WALK-IN FREEZER REMOTE CONDENSING UNIT — D11A

DISCONNECT ON UNIT (ON ROOF) — ICE MAKER REMOTE CONDENSING UNIT — G6C



1 ELECTRICAL ROUGH-IN PLAN
1/4" = 1'-0"

ABOSSEIN #223054

Abossein Engineering, L.L.C.
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bp

ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
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NO.	DATE	REVISION DESCRIPTION
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SEAL:

ALEXANDER ABOSSEIN — STATE OF WASHINGTON — 21891 — REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #7184

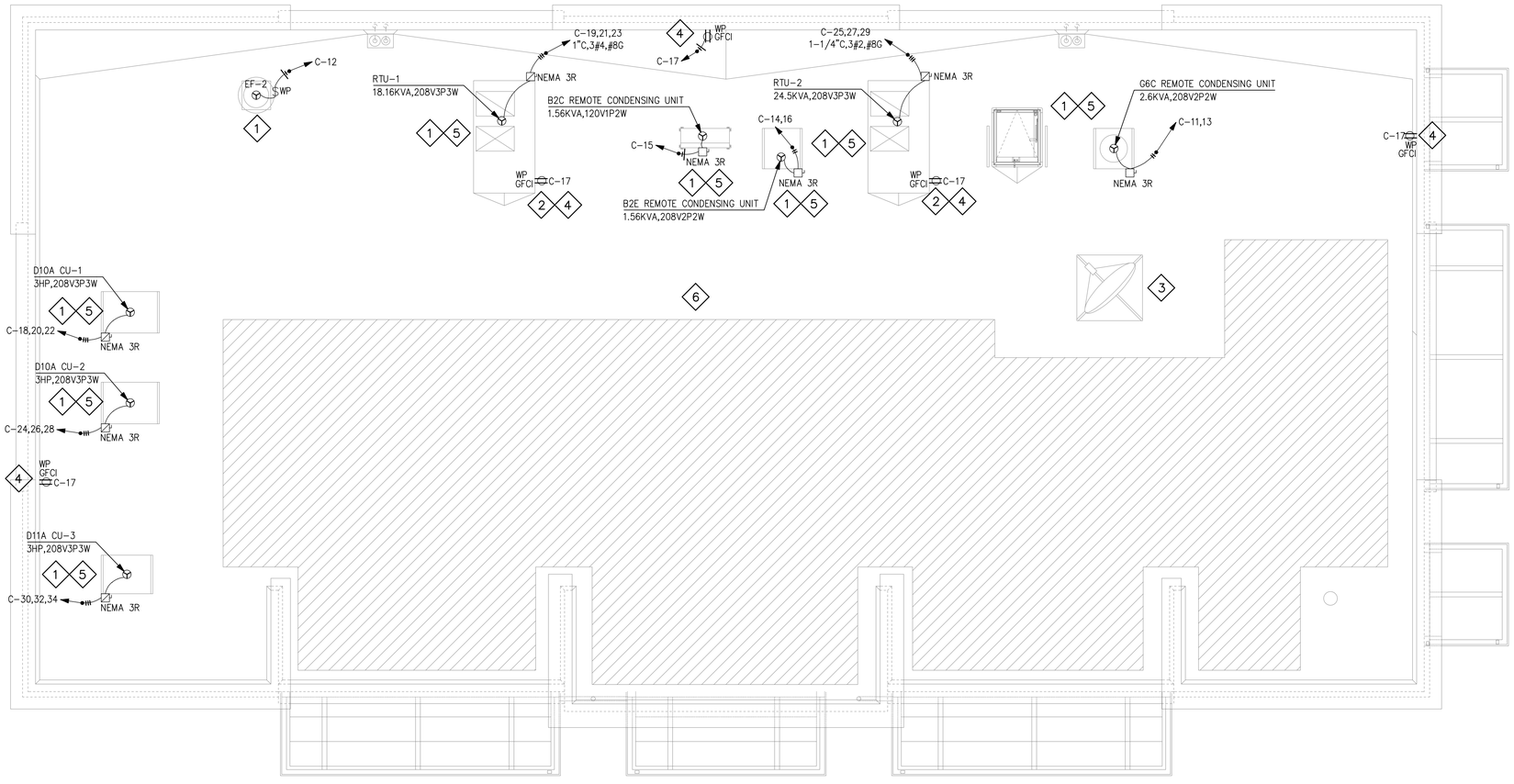
DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
ELECTRICAL ROUGH-IN PLAN

SHEET NO:
E1.4

SHEET NOTES:

1. REFER TO DRAWING NOS. E1.3 & M0.1 FOR ELECTRICAL AND MECHANICAL EQUIPMENT SCHEDULE FOR EQUIPMENT RATING REFERENCES.
2. PROVIDE DEDICATED RECEPTACLE OUTLET WITH IN-USE COVER AT THE RTU UNITS ONLY. LOCATION TO BE DETERMINED AT SITE.
3. REFER TO DWG. E3.0 FOR SATTELITE ROOF JACK-SIGNAL CABLE CONDUIT DETAIL.
4. PROVIDE DEDICATED RECEPTACLES FOR GENERAL ROOF MAINTENANCE. MAINTAIN 25 FOOT RADIUS FOR EXACT LOCATION.
5. ALL CONDUIT TO BE ROUTED BELOW ROOF LINE AND STUBBED DIRECTLY INTO EQUIPMENT.
6. PROPOSED ALLOCATED SOLAR ZONE PER 2018 WSEC C411 SOLAR READINESS REQUIREMENTS. PER C411.2 CALCULATIONS:
   3,543 SQ FT GROSS ROOF AREA – 127 SQ FT OCCUPIED SPACES
   SOLAR ZONE IS 40% OF ROOF AREA: 0.4 * 3,543 SQ FT = 1,417 SQ FT



1 ELECTRICAL ROOF PLAN
1/4" = 1'-0"

1/4"=1'-0"

ABOSSEIN #223054

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bp

ARCO

BP WEST COAST PRODUCTS, LLC

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18215 72nd Avenue South
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NO.	DATE	REVISION DESCRIPTION
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SEAL:

ALEXANDER ABOSSEIN
STATE OF WASHINGTON
21891
REGISTERED
PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

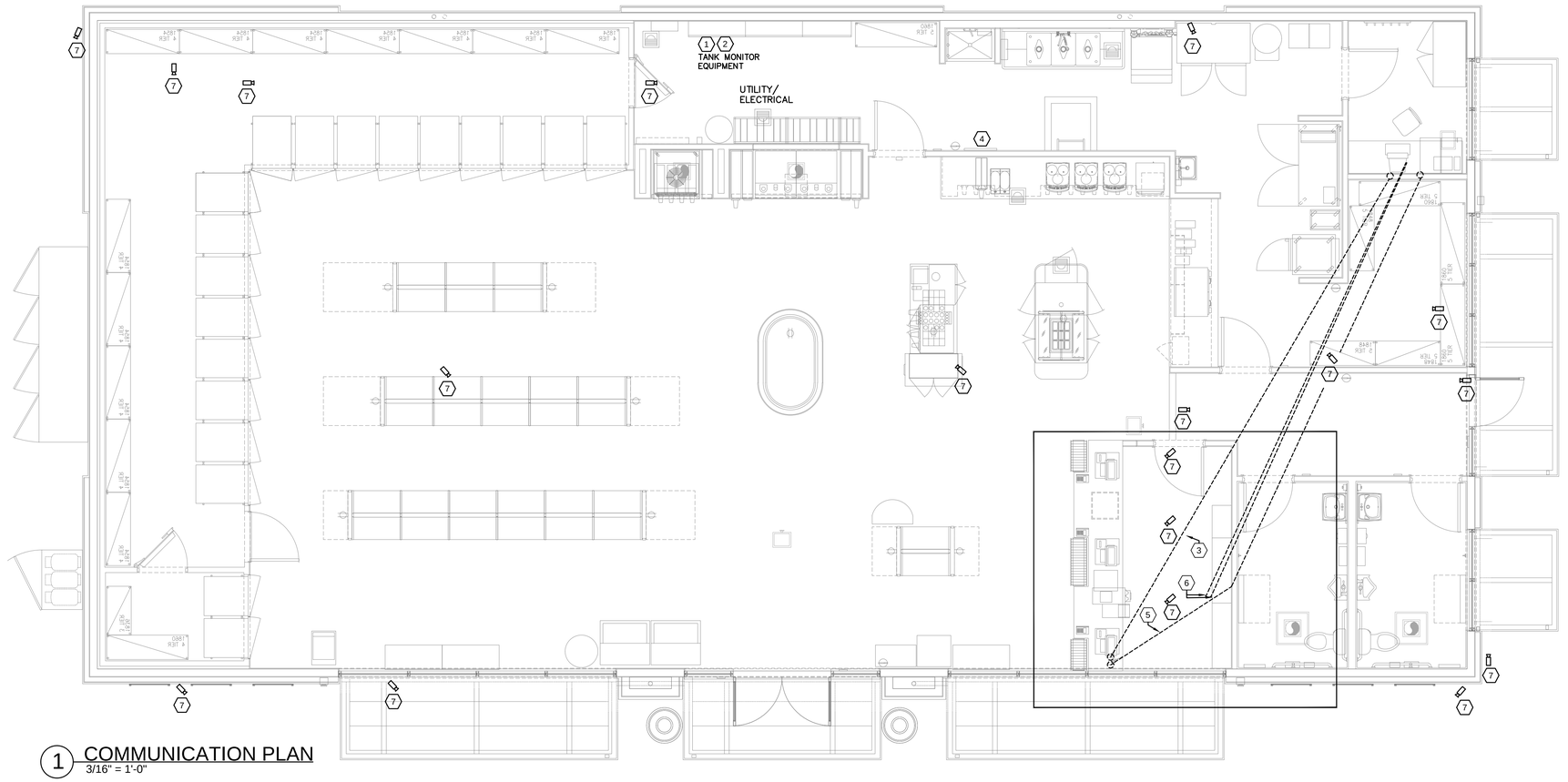
SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #7184

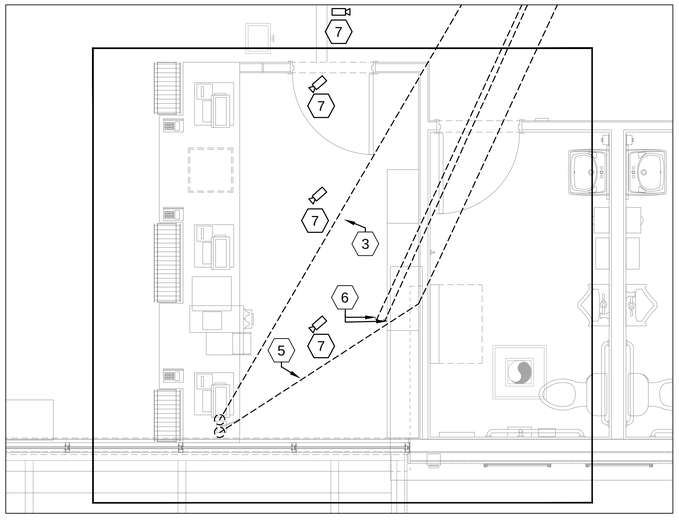
DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
ELECTRICAL ROOF PLAN

SHEET NO:
E1.5



1 COMMUNICATION PLAN
3/16" = 1'-0"



2 ENLARGED CASHIER COMMUNICATION / POS PLAN
3/8" = 1'-0"

DATA, COMMUNICATION CABLING AND DEVICE REQUIREMENTS

A. DATA CABLING SHALL BE CATEGORY 5E OR CATEGORY 5 (CAT 5 UTP SHIELDED CABLE). CATEGORY 5 TO BE USED IF CATEGORY 5E IS COST PROHIBITIVE. PROVIDE LINE ITEM COST ON BID.

B. CAT 6E AND 6 CABLE SHALL BE 4- PAIR , 8 CONDUCTORS , EACH PAIR SHALL BE INDIVIDUALLY FOIL SHIELDED , FOIL OUT, INSULATION COLORS SHALL BE BLUE, ORANGE, GREEN, BROWN AND WHITE IN ACCORDANCE WITH WITH IEC 708. CABLE TO BE RATED FOR 300 MHz TRANSMISSION.

C. CABLE JACKET COLOR TO BE BLACK IN ACCORDANCE WITH RAL COLOR REGISTER NO. 840-HR.

D. ALL CABLING SHALL BE ROUTED IN CONDUIT. CONDUIT SHALL BE LIMITED TO 40% FILL.

E. ALL MODULAR CONNECTORS AND TERMINATIONS SHALL BE RJ-45.

F. PATCH PANELS SHALL BE 24 PORT, CAPABLE OF EXPANSION, AMP T568A OR EQUAL, FOR DATA AND TELEPHONE COMMUNICATIONS.

G. PROVIDE ANALOG TELEPHONE JACKS AS SHOWN ON PLAN AS FOLLOWS: PAY PHONES, FORE COURT CONTROLLER, E-POS BACK-UP, TANK GAUGE AND DATA CARD POS.

KEYED NOTES:

1. 1" CONDUIT W/PULLWIRE FROM TLS-350 TANK MONITOR PANEL TO MANAGER'S COMPUTER LOCATION.
2. 1" CONDUIT W/ CABLE FOR INTERCOM COMMUNICATION ABOVE CEILING TO THE (3) INTERCOM LOCATIONS. FROM (1) OFFICE, TO (1) COOLER AND (1) STORAGE ROOM. REFER TO SHEET E2.0 FOR POWER INFORMATION.
3. 1-1/4" CONDUIT W/PULLWIRE FROM MANAGERS COMPUTER TO 12" X 12" SLAB OPENING FOR POS DATA CABLING.
4. TELEPHONE BOARD, PROVIDE 3/4" PLYWOOD MOUNTED TO WALL FOR TELEPHONE/ISDN EQUIPMENT MOUNTING. COORDINATE WITH UTILITY COMPANY. MOUNT BOARD 7'-0" A.F.F. PAINT WITH FIRE RETARDANT PAINT AND PROVIDE GROUND FROM TELEPHONE BOARD TO MAIN SERVICE GROUND PER NEC ARTICLE 250.
5. 2-1-1/4" CONDUIT WITH PULL WIRE FROM DISPENSER INTERFACE TO 12"X12" SLAB OPENING.
6. 4" CONDUIT W/PULLWIRE MOUNTED 8" A.F.F. IN MANAGER'S OFFICE. ROUTE CONDUIT OVERHEAD AT STUB OUT OVER CASHIER COUNTER.
7. MINIMUM CAMERA SHOWN, EXACT LOCATION TO BE DETERMINED BY SECURITY CONSULTANT INSTALLER.

DRAWING LEGEND

SYMBOL	DESCRIPTION
L ▶ DATA	DOUBLE GANG J-BOX WITH SINGLE GANG PLASTER RING SHALL BE PROVIDED BY AND INSTALLED BY ELECTRICAL CONTRACTOR. PROVIDE SIEMON CT4-FP-20 FACE PLATE W/ 2 SIEMON CT-AK-20 INSERTS. SEE RJ-45 RECEPTACLE WIRING DIAGRAM DETAIL FOR PROPER WIRING ORDER. ELECTRICAL CONTRACTOR SHALL NUMBER EACH CONNECTION AS SHOWN TO COORDINATE WITH PATCH PANEL NUMBERS. PROVIDE WRITE-ON LABEL UNDER CLEAR PLASTIC COVER INDICATING PATCH PANEL IDENTIFIER. PROVIDE PRINTED INSERTS FOR ALL LABELS (HANDWRITTEN NOT ACCEPTABLE).
T ▷ VOICE	DOUBLE GANG TELEPHONE OUTLET WITH SINGLE GANG PLASTER RING SHALL BE PROVIDED BY AND INSTALLED BY ELECTRICAL CONTRACTOR. PROVIDE SIEMON CT4-FP-20 FACE PLATE W/ 2 SIEMON CT-AK-20 INSERTS. SEE RJ-45 RECEPTACLE WIRING DIAGRAM DETAIL FOR PROPER WIRING ORDER. ELECTRICAL CONTRACTOR SHALL NUMBER EACH CONNECTION AS SHOWN TO COORDINATE WITH PATCH PANEL NUMBERS. PROVIDE WRITE-ON LABEL UNDER CLEAR PLASTIC COVER INDICATING PATCH PANEL IDENTIFIER. PROVIDE PRINTED INSERTS FOR ALL LABELS (HANDWRITTEN NOT ACCEPTABLE). C-STORE TO HAVE (5) PHONE LINES. (1) LINE FOR EACH OF THE FOLLOWING: - MAIN TELEPHONE - FAX - ATM - LOTTERY - SPARE
------	CONDUIT ROUTED UNDER SLAB.
———	CONDUIT ROUTED ABOVE CEILING.

SAFETY & SECURITY / VIDEO SURVEILLANCE SYSTEM

(PROVIDED BY GENERAL CONTRACTOR)

	DESCRIPTION
REQUIRED EQUIPMENT	• 20" COLOR PUBLIC VIEW MONITOR SHOULD BE CEILING MOUNTED AT THE ENTRANCE OF STORE. AS THE CUSTOMER ENTERS THE FACILITY, THE IMAGE SHOULD BE READILY SEEN. • A MINIMUM OF 15" COLOR MONITOR SHOULD BE PLACED IN THE BACK OFFICE FOR VIEWING AND MONITORING. • WHERE BACK OFFICE SPACE IS LIMITED, A SMALLER COLOR MONITOR MAY BE APPROPRIATE. • ROBOT / SENSORMATIC COLOR (16 PORT) MULTIPLEXER. • APPROVED TIME LAPSE VIDEO RECORDER (BEST RESULT'S ARE OBTAINED IN 24-HOUR RECORDING MODE). • 24-HOUR REAL TIME AUDIO RECORDING (RECORDED ON 24-HOUR VIDEO TAPE). • APPROVED SECURE CABINET FOR RECORDING EQUIPMENT. • A MINIMUM OF FIVE-COLOR VIDEO CAMERAS WITH PROPER LENSES MOUNTED IN-STORE. • A MINIMUM OF TWO EXTERIOR MOUNTED CAMERAS WITH ENVIRONMENTAL HOUSINGS TO COVER OPERATIONS AT THE FUELING ISLANDS. • FACILITIES WITH CASH ACCEPTING PIC UNITS MUST HAVE CAMERA COVERAGE FOR EACH OPERABLE SIDE OF THE UNIT. IF A SINGLE CAMERA CANNOT VIEW BOTH SIDES OF A DUAL UNIT, THEN ADDITIONAL CAMERAS MUST BE INSTALLED TO COMPLETE COVERAGE.
OPTIONAL VIDEO EQUIPMENT	• ADDITIONAL VIDEO CAMERAS (INTERIOR AND EXTERIOR). • 13" COLOR MONITOR SHOULD BE CEILING MOUNTED NEAR CASH REGISTER AREA. MONITOR MUST SEQUENCE THE EXTERIOR CAMERA IMAGES AND MUST BE READILY VIEWED BY CASHIER. • INTERACTIVE AUDIO / VIDEO MONITORING SERVICE PROVIDED BY APPROVED VENDOR FOR 24-HOUR INTERACTIVE OFF-FACILITY SECURITY MONITORING SYSTEM.
OPTIONAL DIGITAL RECORDER REQUIREMENTS	• DIGITAL CCTV RECORDING SYSTEM: SUFFICIENT HARD DRIVE SPACE TO SUPPORT 12 COLOR CAMERAS AT 5 ½ FRAMES PER SECOND, PER CAMERA, FOR 31 DAYS. • AUDIO RECORDING IS REQUIRED AT THE SALES COUNTER AREA. • AN AUDIO PROCESSING KIT (LOUROE PREFERRED) IS REQUIRED TO SYNCHRONIZE THE AUDIO WITH THE VIDEO IMAGE.

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PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #7184

DESIGNED BY:	ALLIANCE ZADM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

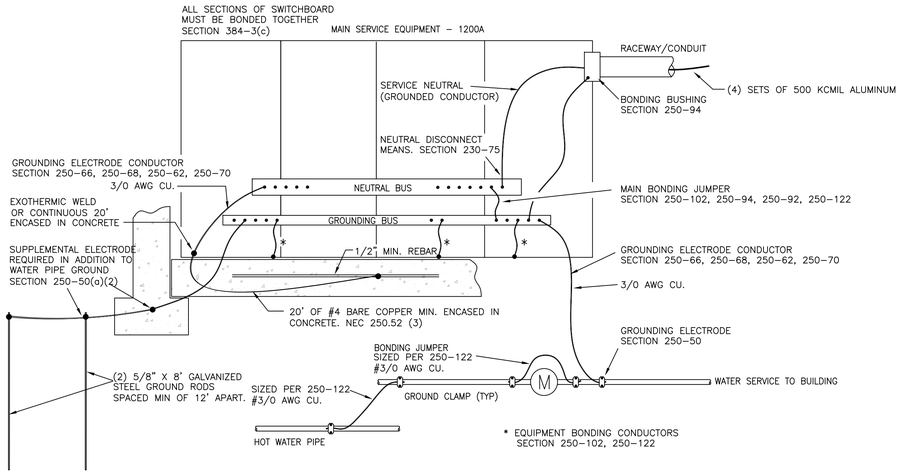
DRAWING TITLE:
COMMUNICATION PLAN

SHEET NO:
E1.6

NOTES:

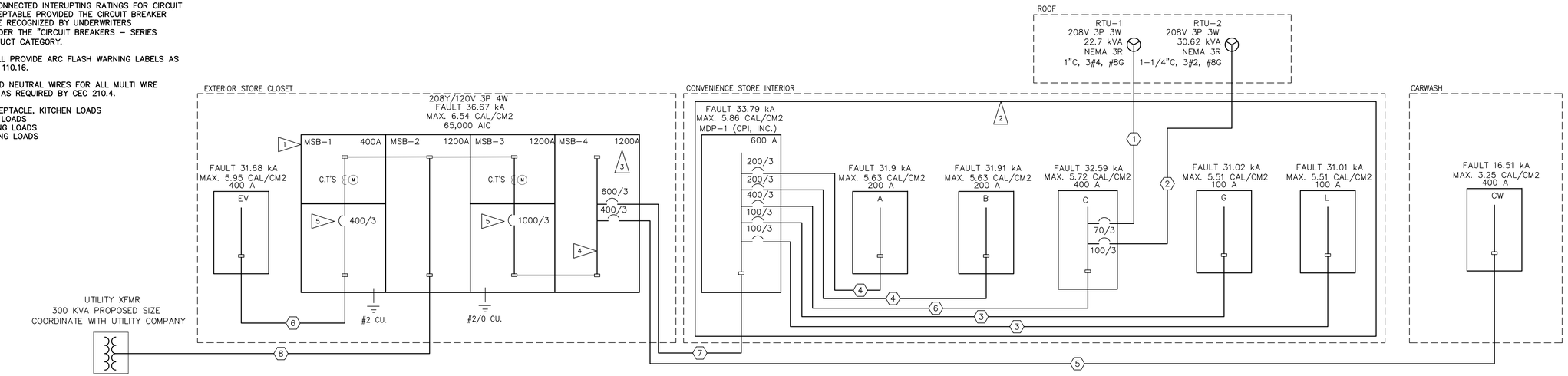
1. ALL SERVICE EQUIPMENT, INCLUDING METER & CURRENT TRANSFORMER CABINET TERMINATION BOXES, DISCONNECT SWITCHES, AND MAIN CIRCUIT BREAKERS SHALL BE RATED FOR THE MAXIMUM AVAILABLE SHORT CIRCUIT CURRENT AS DETERMINED BY THE SERVING UTILITY CO.
2. DESIGNED AIC RATINGS BASED ON PROPOSED 300KVA UTILITY TRANSFORMER WITH 1.8% IMPEDANCE. ELECTRICAL CONTRACTOR TO CONFIRM ACTUAL AVAILABLE FAULT CURRENT WITH LOCAL UTILITY AND MAKE REVISIONS TO EQUIPMENT AIC RATINGS PRIOR TO ORDERING AND INSTALLATION. ELECTRICAL CONTRACTOR SHALL NOTIFY ENGINEER OF CHANGES.
3. ALL SWITCHGEAR (MSB & MDP) CONDUCTORS SHALL BE STRANDED COPPER TYPE THHN/THWN.
4. GROUNDING ELECTRODE CONNECTIONS SHALL BE MADE WITH A U.L. LISTED AND APPROVED BOLTED PRESSURE OR COMPRESSION TYPE CONNECTOR.
5. GROUND RODS (IF NEEDED) SHALL BE 3/4" DIA. X 10' LONG COPPERWELD. RESISTANCE TO GROUND MUST BE 25 OHMS OR LESS.
6. CONCRETE ENCASED (UFER) GROUNDING ELECTRODES SHALL CONSIST OF AT LEAST 20 FEET OF ONE OR MORE STEEL REINFORCING BARS OR RODS OF NOT LESS THAN 1/2 INCH DIAMETER, OR CONSISTING OF AT LEAST 20 FEET OF BARE COPPER CONDUCTORS NOT SMALLER THAN #2/0 AWG, ENCASED BY AT LEAST 2 INCHES OF CONCRETE, LOCATED WITHIN AND NEAR THE BOTTOM OF A CONCRETE FOUNDATION OR FOOTING THAT IS IN DIRECT CONTACT WITH THE EARTH.
7. CONNECT GROUNDING WIRE DIRECTLY TO GROUND ROD. MINIMIZE CONDUCTOR RIGHT ANGLE BENDS. MAXIMUM LENGTH OF CONDUCTOR SHALL BE 10 FEET.
8. SUPPLY EXACT NUMBER OF DEDICATED ISOLATED GROUND RECEPTACLES FOR LINE CONDITIONED EQUIPMENT. NO UNUSED DEDICATED ISOLATED GROUND RECEPTACLE SHALL BE INSTALLED. IF A RECEPTACLE IS INSTALLED THEN NOT USED. CONTRACTOR SHALL REMOVE RECEPTACLE AND INSTALL BLANK COVER ON JUNCTION BOX.
9. USE OF SERIES-CONNECTED INTERUPTING RATINGS FOR CIRCUIT BREAKERS IS ACCEPTABLE PROVIDED THE CIRCUIT BREAKER COMBINATIONS ARE RECOGNIZED BY UNDERWRITERS LABORATORIES UNDER THE "CIRCUIT BREAKERS – SERIES CONNECTED" PRODUCT CATEGORY.
10. CONTRACTOR SHALL PROVIDE ARC FLASH WARNING LABELS AS REQUIRED BY CEC 110.16.
11. PROVIDE DEDICATED NEUTRAL WIRES FOR ALL MULTI WIRE BRANCH CIRCUITS AS REQUIRED BY CEC 210.4.
12. PANEL A,B – RECEPTACLE, KITCHEN LOADS
    PANEL C – HVAC LOADS
    PANEL G – FUELING LOADS
    PANEL L – LIGHTING LOADS

CONTRACTOR MAY SELECT EITHER METHOD SHOWN WITHIN GROUNDING DETAIL.



GROUNDING DETAIL

SCALE: NONE



POWER RISER FLAG NOTES:

1. UTILITY APPROVED SWITCHBOARD WITH PULL SECTION AND METERING COMPARTMENT.
2. CAROLINA POWER, INC. UNITIZED PANEL SYSTEM PROVIDED BY ARCO.
3. SWITCHBOARD BUS INCREASED FOR PHOTOVOLTAIC SYSTEM NEC 705.12 COMPLIANCE. REFER TO CALCULATION ON THIS SHEET.
4. PROVIDE PHOTOVOLTAIC INPUT BREAKER AT BOTTOM OF BUS. REFER TO PANEL SCHEDULES FOR BREAKER PROVISIONS.
5. SERVICE DISCONNECT

NOTE: PANELS (A, B, C, G & L) ARE FACTORY INSTALLED WITH BREAKERS AND WIRING. CPI, INC. UNITIZED PANEL SYSTEM IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

NEC 705.12 B (3) (2)

MAIN OVERCURRENT DEVICE, 1000A X 1.25 = 1250A
FUTURE PV OUTPUT, 30A X 1.25 = 38A
TOTAL = 1,288A

MSB-4 BUS RATING = 1200A x 1.2 = 1440A

1,288A < 1440A

POWER DISTRIBUTION RISER DIAGRAM

SCALE: NONE

FEEDER SCHEDULE

ID	*FEEDER AMPS*	*CONDUIT AND FEEDER*	*FEEDING THESE DEVICES*	*TOTAL WIRE COUNT*	*CONDUCTOR WIRE COUNT*	*CONDUCTOR WIRE SIZE*	*NEUTRAL WIRE COUNT*	*NEUTRAL WIRE SIZE*	*GROUND WIRE SIZE*	*NUMBER OF RUNS*	*CONDUIT SIZE*
1	70	1"C,3#4,#8G	RTU-1	3	3	#4	0		#8	1	1"C
2	90	1-1/4"C,3#2,#8G	RTU-2	3	3	#2	0		#8	1	1-1/4"C
3	100	1-1/2"C,3#1,#1N,#8G	G, L	4	3	#1	1	#1	#8	1	1-1/2"C
4	200	2"C,3#3/0,#3/0N,#6G	A, B	4	3	#3/0	1	#3/0	#6	1	2"C
5	400	(2)2-1/2"C,3#250kcmil AL,#250kcmil AL N,#1/0 AL G	CW	4	3	#250kcmil AL	1	#250kcmil AL	#1/0 AL	2	2-1/2"C
6	400	3-1/2"C,3#600kcmil,#600kcmil N,#2G	C, EV	4	3	#600kcmil	1	#600kcmil	#2	1	3-1/2"C
7	600	(2)3"C,3#500kcmil AL,#500kcmil AL N,#2/0 AL G	MDP-1	4	3	#500kcmil AL	1	#500kcmil AL	#2/0 AL	2	3"C
8	1200	(4)3"C,3#500kcmil AL,#500kcmil AL N	MSB-2	4	3	#500kcmil AL	1	#500kcmil AL		4	3"C

SIZING METHOD: COPPER, 60°C #12 THROUGH #1, 75°C 1/0 AND ABOVE, ALUMINUM, 75°C #12 ONWARD
EQUIPMENT GROUND WIRE SIZED WITH COPPER. ELECTRICAL CONTRACTOR MAY OPT TO USE ALUMINUM WIRE SIZED PER CEC ALUMINUM DENOTED BY "AL", ALL WIRES NOT DENOTED WITH "AL" ARE COPPER.

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DESIGNED BY:	ALLIANCE ZADM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
SINGLE LINE DIAGRAM

SHEET NO:
E2.0

UTILITY XFMR

ROOM
MOUNTING
FED FROM UTILITY
NOTE PROPOSED

VOLTS 208Y/120V 3P 4W
BUS AMPS
NEUTRAL 100%

AIC 50,000
MAIN BKR
LUGS STANDARD

CKT #	BREAKER TRIP/POLES	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	FEEDER RACEWAY AND CONDUCTORS
1	–/3	SWITCHBOARD MSB–2	136	142	124	(2)3"C,3#350kcmil,#350kcmil N
2	20/3	SPACE	0	0	0	
		TOTAL CONNECTED KVA BY PHASE	136	142	124	

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	15.8	19.7	(125%)	CONTINUOUS	82.8	104	(125%)
LARGEST MOTOR	33.3	41.6	(125%)	HEATING	55.6	55.6	(100%)
OTHER MOTORS	28.9	28.9	(100%)	COOLING	43.4	0	(0%)
RECEPTACLES	19.3	14.6	(50%>10)	NONCONTINUOUS	81.9	81.9	(100%)
KITCHEN EQUIP	84.7	55	(65%)	DIVERSE	0	0	(N/A)
				METERED DEMAND	0	0	(125%)
				TOTAL KVA	402	401	
				BALANCED 3–PHASE AMPS		1,110	

MSB–3

ROOM
MOUNTING SURFACE
FED FROM MSB–2
NOTE

VOLTS 208Y/120V 3P 4W
BUS AMPS 1200
NEUTRAL 100%

AIC 65,000
MAIN BKR 1000
LUGS STANDARD

CKT #	BREAKER TRIP/POLES	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	FEEDER RACEWAY AND CONDUCTORS
1	–/3	SWITCHBOARD MSB–4	109	115	96.9	(4)3"C,3#500kcmil AL,#500kcmil AL N
2	20/3	SPACE	0	0	0	
3	20/3	SPACE	0	0	0	
4	20/3	SPACE	0	0	0	
5	20/3	SPACE	0	0	0	
6	20/3	SPACE	0	0	0	
		TOTAL CONNECTED KVA BY PHASE	109	115	96.9	

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	15.8	19.7	(125%)	CONTINUOUS	1.8	2.25	(125%)
LARGEST MOTOR	33.3	41.6	(125%)	HEATING	55.6	55.6	(100%)
OTHER MOTORS	28.9	28.9	(100%)	COOLING	43.4	0	(0%)
RECEPTACLES	19.3	14.6	(50%>10)	NONCONTINUOUS	81.9	81.9	(100%)
KITCHEN EQUIP	84.7	55	(65%)	DIVERSE	0	0	(N/A)
				METERED DEMAND	0	0	(125%)
				TOTAL KVA	321	300	
				BALANCED 3–PHASE AMPS		832	

A

ROOM ELEC ROOM
MOUNTING SURFACE
FED FROM MDP–1
NOTE

VOLTS 208Y/120V 3P 4W
BUS AMPS 200
NEUTRAL 100%

AIC 42,000
MAIN BKR MLO
LUGS STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C
1	20/1	A14A – FROZEN BEVERAGE MACHINE 92 BARREL)	1.44			2	30/2	A33 – COFFEE BEAN–TO–CUP GRINDER	2.08		
3	20/1	A1C – CAPPUCCINO MACHINE (6 HEAD)		1.8		4	|			2.08	
5	20/1	TG8A NACHO CHEESE DISPENSER			0.2	6	30/2	A33 – COFFEE BEAN–TO–CUP GRINDER			2.08
7	20/1	TG8A NACHO CHEESE DISPENSER	0.2			8	|		2.08		
9	20/2	TG3 – FOOD WARMER		0.828		10	30/2	A33 – COFFEE BEAN–TO–CUP GRINDER		2.08	
11	|				0.828	12	|				2.08
13	20/1	TG1 – MICROWAVE OVEN	1.8			14	20/1	B12A ICE DRINK DISPENSER	0.63		
15	20/1	B7B – ILLUMINATED DISPLAY BOARD		1		16	20/1	B12A ICE DRINK DISPENSER		0.63	
17	20/2	B2A – FOUNTAIN TOP MOUNT ICE MAKER			1.3	18	20/2	B2B FOUNTAIN ICE MAKER			1.56
19	|		1.3			20	|		1.56		
21	40/2	B1B – FROZEN BEVERAGE DISPENSER (4 FLAVOR)		3.12		22	20/1	B14D – FCB GRAPHIC FOR 36" CART		1	
23	|				3.12	24	30/2	TG4B – REFRIGERATED SELF–SERVICE ISLAND			2.47
25	20/1	TG35D – FREE STANDING BAKERY CASE	1			26	|		2.47		
27	20/1	TG10B – MEDIUM REFRIGERATED CONDIMENT ISLAND		1		28	20/1	B15 – F'REAL BLENDER		0.78	
29	20/1	SALES AREA RECEPTACLE			0.54	30	20/1	B15A – F'REAL FREEZER			0.78
31	20/1	SALES AREA RECEPTACLE	0.72			32	20/1	SHOW WINDOW RECEPTACLE	1.08		
33	20/1	C18B – ICE CREAM CASE		1.44		34	20/1	TG37 – ENERGY ZONE COOLER		1.39	
35	20/1	C18B – ICE CREAM CASE			1.44	36	20/1	LAVATORY FAUCET			0.36
37	20/1	E2 ATM	1			38	20/1	SPACE	0		
39	20/1	SPACE		0		40	20/1	SPACE		0	
41	20/1	SPACE			0	42	20/1	SPACE			0
								TOTAL CONNECTED KVA BY PHASE	17.4	17.1	16.8

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	2	2.5	(125%)	CONTINUOUS	0	0	(125%)
LARGEST MOTOR	0	0	(N/A)	HEATING	0	0	(N/A)
OTHER MOTORS	0	0	(100%)	COOLING	0	0	(N/A)
RECEPTACLES	2.34	2.34	(50%>10)	NONCONTINUOUS	1.36	1.36	(100%)
KITCHEN EQUIP	45.6	29.6	(65%)	DIVERSE	0	0	(N/A)
				METERED DEMAND	0	0	(125%)
				TOTAL KVA	51.3	35.8	
				BALANCED 3–PHASE AMPS		99.4	

MSB–1

ROOM
MOUNTING SURFACE
FED FROM MSB–2
NOTE

VOLTS 208Y/120V 3P 4W
BUS AMPS 400
NEUTRAL 100%

AIC 65,000
MAIN BKR 400
LUGS STANDARD

CKT #	BREAKER TRIP/POLES	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	FEEDER RACEWAY AND CONDUCTORS
1	–/3	PANEL EV	27	27	27	3–1/2"C,3#600kcmil,#600kcmil N,#2G
2	20/3	SPACE	0	0	0	
3	20/3	SPACE	0	0	0	
4	20/3	SPACE	0	0	0	
5	20/3	SPACE	0	0	0	
6	20/3	SPACE	0	0	0	
		TOTAL CONNECTED KVA BY PHASE	27	27	27	

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	0	0	(125%)	CONTINUOUS	81	101	(125%)
LARGEST MOTOR	0	0	(N/A)	HEATING	0	0	(N/A)
OTHER MOTORS	0	0	(100%)	COOLING	0	0	(N/A)
RECEPTACLES	0	0	(50%>10)	NONCONTINUOUS	0	0	(100%)
KITCHEN EQUIP	0	0	(N/A)	DIVERSE	0	0	(N/A)
				METERED DEMAND	0	0	(125%)
				TOTAL KVA	81	101	
				BALANCED 3–PHASE AMPS		281	

MSB–4

ROOM EXTERIOR CLOSET
MOUNTING SURFACE
FED FROM MSB–3
NOTE

VOLTS 208Y/120V 3P 4W
BUS AMPS 1200
NEUTRAL 100%

AIC 65,000
MAIN BKR MLO
LUGS STANDARD

CKT #	BREAKER TRIP/POLES	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	FEEDER RACEWAY AND CONDUCTORS
1	600/3	SWITCHBOARD MDP–1	68.8	74.4	59	(2)3"C,3#500kcmil AL,#500kcmil AL N,#2/0 AL G
2	400/3	PANEL CW	40.1	41.1	37.9	(2)2–1/2"C,3#250kcmil AL,#250kcmil AL N,#1/0 AL G
3	20/3	SPACE	0	0	0	
4	20/3	SPACE	0	0	0	
5	20/3	SPACE	0	0	0	
6	30/3	PV SYSTEM INPUT BREAKER	0	0	0	–
		TOTAL CONNECTED KVA BY PHASE	109	115	96.9	

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	15.8	19.7	(125%)	CONTINUOUS	1.8	2.25	(125%)
LARGEST MOTOR	33.3	41.6	(125%)	HEATING	55.6	55.6	(100%)
OTHER MOTORS	28.9	28.9	(100%)	COOLING	43.4	0	(0%)
RECEPTACLES	19.3	14.6	(50%>10)	NONCONTINUOUS	81.9	81.9	(100%)
KITCHEN EQUIP	84.7	55	(65%)	DIVERSE	0	0	(N/A)
				METERED DEMAND	0	0	(125%)
				TOTAL KVA	321	300	
				BALANCED 3–PHASE AMPS		832	

B

ROOM ELEC ROOM
MOUNTING SURFACE
FED FROM MDP–1
NOTE

VOLTS 208Y/120V 3P 4W
BUS AMPS 200
NEUTRAL 100%

AIC 42,000
MAIN BKR MLO
LUGS STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C
1	20/1	SPACE	0			2	20/1	G54 – CARBONATOR	0.864		
3	20/1	TELEPHONE BACKBOARD QUAD RECEPTACLE		0.36		4	20/1	G10A – WATER BOOSTER		0.864	
5	20/1	QUAD RECEPTACLE FOR VERIFONE POS & HUGHES NETWORK EQUIPMENT RECEPTACLE			0.36	6	20/1	LAVATORY FAUCET			0.18
7	20/1	G21 – 2–DOOR REACH–IN REFRIGERATOR	0.84			8	20/2	G6A ICE MACHINE	1.87		
9	20/1	OFFICE CONTROLLED RECEPTACLE		0.36		10	|			1.87	
11	20/1	DVR RACK RECEPTACLE			0.18	12	20/1	OFFICE RECEPTACLE			0.18
13	20/1	TG6 – BUN TOASTER	1.56			14	20/1	F5 CCTV–RECORDER/DVR/MONITOR	0.84		
15	20/1	TG5A – WORKTOP REFRIGERATOR		0.864		16	20/1	F4 COMPUTER SYSTEM		0.304	
17	20/1	TG9 – FOOD LABEL PRINTER			1	18	20/1	F12 PRINTER			1
19	40/3	TG7 – VENTLESS OVEN	3.53			20	20/1	F11 BATTERY BACKUP	0.36		
21	|			3.53		22	20/1	CIGARETTE RACK RECEPTACLE		0.36	
23	|				3.53	24	20/1	C2 – CASH REGISTERS/POS			1.8
25	20/1	HAND DRYER	1.4			26	20/1	C5 – SAFE	1.44		
27	20/1	HAND DRYER		1.4		28	20/1	C2 – CASH REGISTERS/POS		1.8	
29	20/1	LAVATORY FAUCET			0.18	30	20/1	SALES COUNTER CONVENIENCE RECEPTACLE			0.36
31	20/1	EXTERIOR RECEPTACLE	0.18			32	20/1	C6A – LOTTO TERMINAL	1.44		
33	20/1	RPBA HOT BOX		0.1		34	20/1	C2 – CASH REGISTERS/POS		1.8	
35	20/1	RPBA HOT BOX			0.1	36	20/1	C3 – INTERCOM TO FUEL POSITIONS			1
37	20/1	SPACE	0			38	20/1	SPACE	0		
39	20/1	SPACE		0		40	20/1	SPACE		0	
41	20/1	SPACE			0	42	20/1	SPACE			0
								TOTAL CONNECTED KVA BY PHASE	14.3	13.6	9.87

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	0	0	(125%)	CONTINUOUS	0	0	(125%)
LARGEST MOTOR	1.4	1.75	(125%)	HEATING	0.2	0.2	(100%)
OTHER MOTORS	1.4	1.4	(100%)	COOLING	0	0	(N/A)
RECEPTACLES	15.1	12.6	(50%>10)	NONCONTINUOUS	0.36	0.36	(100%)
KITCHEN EQUIP	19.3	14.3	(LARGEST 2)	DIVERSE	0	0	(N/A)
				METERED DEMAND	0	0	(125%)
				TOTAL KVA	37.8	30.6	
				BALANCED 3–PHASE AMPS		85	

MSB–2

ROOM
MOUNTING SURFACE
FED FROM UTILITY XFMR
NOTE

VOLTS 208Y/120V 3P 4W
BUS AMPS 1200
NEUTRAL 100%

AIC 65,000
MAIN BKR MLO
LUGS STANDARD

CKT #	BREAKER TRIP/POLES	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	FEEDER RACEWAY AND CONDUCTORS
1	–/3	SWITCHBOARD MSB–1	27	27	27	(2)2–1/2"C,3#250kcmil AL,#250kcmil AL N
2	–/3	SWITCHBOARD MSB–3	109	115	96.9	(4)3"C,3#500kcmil AL,#500kcmil AL N
		TOTAL CONNECTED KVA BY PHASE	136	142	124	

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	15.8	19.7	(125%)	CONTINUOUS	82.8	104	(125%)
LARGEST MOTOR	33.3	41.6	(125%)	HEATING	55.6	55.6	(100%)
OTHER MOTORS	28.9	28.9	(100%)	COOLING	43.4	0	(0%)
RECEPTACLES	19.3	14.6	(50%>10)	NONCONTINUOUS	81.9	81.9	(100%)
KITCHEN EQUIP	84.7	55	(65%)	DIVERSE	0	0	(N/A)
				METERED DEMAND	0	0	(125%)
				TOTAL KVA	402	401	
				BALANCED 3–PHASE AMPS		1,110	

MDP–1

ROOM ELECTRICAL BACKROOM
MOUNTING SURFACE
FED FROM MSB–4
NOTE

VOLTS 208Y/120V 3P 4W
BUS AMPS 600
NEUTRAL 100%

AIC 65,000
MAIN BKR MLO
LUGS STANDARD

CKT #	BREAKER TRIP/POLES	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	FEEDER RACEWAY AND CONDUCTORS
1	200/3	PANEL A	17.4	17.1	16.8	2"C,3#3/0,#3/0N,#6G
2	200/3	PANEL B	14.3	13.6	9.87	2"C,3#3/0,#3/0N,#6G
3	400/3	PANEL C	26.6	25.7	25.5	3–1/2"C,3#600kcmil,#600kcmil N,#2G
4	100/3	PANEL G	6	13.2	2.7	1–1/2"C,3#1,#1N,#8G
5	100/3	PANEL L	4.52	4.72	4.2	1–1/2"C,3#1,#1N,#8G
		TOTAL CONNECTED KVA BY PHASE	68.8	74.4	59	

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	14.7	18.3	(125%)	CONTINUOUS	1.8	2.25	(125%)
LARGEST MOTOR	24.5	6.12	(25%)	HEATING	55.6	55.6	(100%)
OTHER MOTORS	13.1	13.1	(100%)	COOLING	43.4	0	(0%)
RECEPTACLES	18.5	14.3	(50%>10)	NONCONTINUOUS	13.8	13.8	(100%)
KITCHEN EQUIP	84.7	55	(65%)	DIVERSE	0	0	(N/A)
				METERED DEMAND	0	0	(125%)
				TOTAL KVA	202	178	
				BALANCED 3–PHASE AMPS		495	

C

ROOM ELEC ROOM
MOUNTING SURFACE
FED FROM MDP–1
NOTE

VOLTS 208Y/120V 3P 4W
BUS AMPS 400
NEUTRAL 100%

AIC 42,000
MAIN BKR MLO
LUGS STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C
1	15/1	ERV–1	0.72			2	20/1	D10 EVAPORATOR COILS	0.84		
3	50/3	G8 – WH–1		4		4	20/1	D10 EVAPORATOR COILS		0.84	
5	|				4	6	20/2	D11 EVAPORATOR COILS			0.21
7	|		4			8	|		0.21		
9	20/1	HWRCP–1		0.18		10	20/1	HEAT TAPE			0.1
11	25/2	G6C – ICE MAKER REMOTE CONDENSING UNIT			1.3	12	20/1	ROOFTOP EF–2			0.696
13	|		1.3			14	25/2	B2E – ICE MAKER REMOTE CONDENSING UNIT	0.78		
15	20/1	B2C – ICE MAKER REMOTE CONDENSING UNIT		1.56		16	|			0.78	
17	20/1	ROOFTOP RECEPTACLE			0.9	18	20/3	D10A – CU–1			1.33
19	70/3	RTU–1	6.05			20	|		1.33		
21	|			6.05		22	|			1.33	
23	|				6.05	24	20/3	D10A – CU–2			1.33
25	100/3	RTU–2	8.17			26	|		1.33		
27	|			8.17		28	|			1.33	
29	|				8.17	30	20/3	D11A – CU–3			1.33
31	20/1	SPACE	0			32	|		1.33		
33	20/1	SPACE		0		34	|			1.33	
35	20/1	SPACE			0	36	20/1	DOOR SHUTTER AND SECURITY SYSTEM JBOX			0.18
37	20/1	SPACE	0			38	20/1	ACN–1	0.528		
39	20/1	SPACE		0		40	20/1	SPACE		0	
41	20/1	SPACE			0	42	20/1	SPACE			0
								TOTAL CONNECTED KVA BY PHASE	26.6	25.7	25.5

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	0.18	0.225	(125%)	CONTINUOUS	0	0	(125%)
LARGEST MOTOR	24.5	6.12	(25%)	HEATING	55.4	55.4	(100%)
OTHER MOTORS	1.22	1.22	(100%)	COOLING	43.4	0	(0%)
RECEPTACLES	1.08	1.08	(50%>10)	NONCONTINUOUS	0.1	0.1	(100%)
KITCHEN EQUIP	19.8	12.9	(65%)	DIVERSE	0	0	(N/A)
				METERED DEMAND	0	0	(125%)
				TOTAL KVA	77.8	77	
				BALANCED 3–PHASE AMPS		214	

ABOSSEIN #223054

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SEAL: ALEXANDER J. ABOSSEIN, STATE OF WASHINGTON, 21891, REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #7184

DESIGNED BY:	ALLIANCE ZAOM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
ELECTRICAL PANEL SCHEDULES

SHEET NO:
E2.1

L

ROOM ELEC ROOM | VOLTS 208Y/120V 3P 4W | AIC 42,000
MOUNTING SURFACE | BUS AMPS 100 | MAIN BKR MLO
FED FROM MDP-1 | NEUTRAL 100% | LUGS STANDARD
NOTE SMART PANEL, SITE, FUEL CANOPY LIGHTING & SITE SIGNAGE TO VARY BASED ON PROJECT

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C
1	20/1	SALES AREA EM LIGHTING, LIGHTING, LIGHTING (WITH EMERGENCY BATTERY)	0.708			2	20/1	LIGHTING CONTACTOR	0.5		
3	20/1	SALES AREA LIGHTING		0.448		4	20/1	WALK-IN COOLER, FREEZER		0	
5	20/1	SALES AREA LIGHTING			0.576	6	20/1	EXTERIOR STORE LIGHTING			1.1
7	20/1	PREP/UTILITY/STORAGE/OFFICE EM BACKUP, LIGHTING, LIGHTING (WITH EMERGENCY BATTERY)	0.553			8	20/1	EXTERIOR ARCO SIGN	0.3		
9	20/1	ELECTRICAL ROOM EM BACKUP, LIGHTING, LIGHTING (WITH EMERGENCY BATTERY)		0.091		10	20/1	WALK-IN COOLER DOOR LIGHTS		0.25	
11	20/1	WALK-IN COOLER/FREEZER DOOR, FOOD SERVICE EQUIPMENT COUNTER EM LIGHTING, LIGHTING			0.221	12	20/1	WALK-IN COOLER DOOR LIGHTS			0.25
13	20/1	WALK-IN COOLER DOOR LIGHTS	0.25			14	20/1	CASHIER RED LIGHT JUNCTION BOX	0.18		
15	20/1	TG45 - UV FLY LIGHT		1		16	20/1	RESTROOM EF-1, LIGHTING, LIGHTING (WITH EMERGENCY BATTERY)		1.06	
17	20/2	SITE POLE LIGHTING			0.347	18	20/1	D3 - WALK-IN FREEZER GLASS DOOR ASSEMBLY DISPLAY			0.86
19	|		0.347			20	20/1	FUEL CANOPY JUNCTION BOX LIGHTING, LIGHTING	1.02		
21	20/1	MONUMENT SIGN		0.24		22	20/1	FUEL CANOPY LIGHTING		0.918	
23	20/1	MONUMENT SIGN			0.24	24	20/1	ILLUMINATED LOGO SIGN, JUNCTION BOX LIGHTING			0.6
25	20/1	TRASH ENCLOSURE LIGHTING	0.063			26	20/1	ILLUMINATED LOGO SIGN, JUNCTION BOX LIGHTING	0.6		
27	20/1	TRASH ENCLOSURE EXTERIOR LIGHTING		0.118		28	20/1	ILLUMINATED LOGO SIGN, JUNCTION BOX LIGHTING		0.6	
29	20/1	SPACE			0	30	20/1	SPACE			0
31	20/1	SPACE	0			32	20/1	SPACE	0		
33	20/1	SPACE		0		34	20/1	SPACE		0	
35	20/1	SPACE			0	36	20/1	SPACE			0
37	20/1	SPACE	0			38	20/1	SPACE	0		
39	20/1	SPACE		0		40	20/1	SPACE		0	
41	20/1	SPACE			0	42	20/1	SPACE			0
								TOTAL CONNECTED KVA BY PHASE	4.52	4.72	4.2

	CONN KVA	CALC KVA	
LIGHTING	12.5	15.6	(125%)
LARGEST MOTOR	0.468	0.585	(125%)
OTHER MOTORS	0.468	0.468	(100%)
RECEPTACLES	0	0	(50%>10)
KITCHEN EQUIP	0	0	(N/A)

	CONN KVA	CALC KVA	
CONTINUOUS	0	0	(125%)
HEATING	0	0	(N/A)
COOLING	0	0	(N/A)
NONCONTINUOUS	0	0	(100%)
DIVERSE	0	0	(N/A)
METERED DEMAND	0	0	(125%)
TOTAL KVA	13.4	16.7	
BALANCED 3-PHASE AMPS		46.3	

EV

ROOM | VOLTS 208Y/120V 3P 4W | AIC 42,000
MOUNTING SURFACE | BUS AMPS 400 | MAIN BKR MLO
FED FROM MSB-1 | NEUTRAL 100% | LUGS STANDARD
NOTE

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C
1	100/3	EV CHARGER	9			2	100/3	EV CHARGER INFRASTRUCTURE	9		
3	|			9		4	|			9	
5	|				9	6	|				9
7	100/3	EV CHARGER INFRASTRUCTURE	9			8	20/1	SPACE	0		
9	|			9		10	20/1	SPACE		0	
11	|				9	12	20/1	SPACE			0
13	20/1	SPACE	0			14	20/1	SPACE	0		
15	20/1	SPACE		0		16	20/1	SPACE		0	
17	20/1	SPACE			0	18	20/1	SPACE			0
19	20/1	SPACE	0			20	20/1	SPACE	0		
21	20/1	SPACE		0		22	20/1	SPACE		0	
23	20/1	SPACE			0	24	20/1	SPACE			0
25	20/1	SPACE	0			26	20/1	SPACE	0		
27	20/1	SPACE		0		28	20/1	SPACE		0	
29	20/1	SPACE			0	30	20/1	SPACE			0
31	20/1	SPACE	0			32	20/1	SPACE	0		
33	20/1	SPACE		0		34	20/1	SPACE		0	
35	20/1	SPACE			0	36	20/1	SPACE			0
37	20/1	SPACE	0			38	20/1	SPACE	0		
39	20/1	SPACE		0		40	20/1	SPACE		0	
41	20/1	SPACE			0	42	20/1	SPACE			0
								TOTAL CONNECTED KVA BY PHASE	27	27	27

	CONN KVA	CALC KVA	
LIGHTING	0	0	(125%)
LARGEST MOTOR	0	0	(N/A)
OTHER MOTORS	0	0	(100%)
RECEPTACLES	0	0	(50%>10)
KITCHEN EQUIP	0	0	(N/A)

	CONN KVA	CALC KVA	
CONTINUOUS	81	101	(125%)
HEATING	0	0	(N/A)
COOLING	0	0	(N/A)
NONCONTINUOUS	0	0	(100%)
DIVERSE	0	0	(N/A)
METERED DEMAND	0	0	(125%)
TOTAL KVA	81	101	
BALANCED 3-PHASE AMPS		281	

G

ROOM ELEC ROOM | VOLTS 208Y/120V 3P 4W | AIC 42,000
MOUNTING SURFACE | BUS AMPS 100 | MAIN BKR MLO
FED FROM MDP-1 | NEUTRAL 100% | LUGS STANDARD
NOTE

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C
1	20/1	C7 - TANK MONITOR EQUIPMENT	1.8			2	20/3	UNLEADED TURBINE #1	0.9		
3	20/1	DISPENSER #1		1.5		4	|			0.9	
5	20/1	SPACE			0	6	|				0.9
7	20/1	SPACE	0			8	20/3	UNLEADED PREMIUM TURBINE	0.9		
9	20/1	DISPENSER #2		1.5		10	|	#1		0.9	
11	20/1	SPACE			0	12	|				0.9
13	20/1	SPACE	0			14	20/3	DIESEL TURBINE #1	0.9		
15	20/1	DISPENSER #3		1.5		16	|			0.9	
17	20/1	SPACE			0	18	|				0.9
19	20/1	SPACE	0			20	20/1	FUTURE VENT DIAGNOSTICS	1.5		
21	20/1	DISPENSER #4		1.5		22	20/1	ESO SWITCH		1.5	
23	20/1	SPACE			0	24	20/1	SPACE			0
25	20/1	SPACE	0			26	20/1	SPACE	0		
27	20/1	DISPENSER #5		1.5		28	20/1	SPACE		0	
29	20/1	SPACE			0	30	20/1	SPACE			0
31	20/1	SPACE	0			32	20/1	SPACE	0		
33	20/1	DISPENSER #6		1.5		34	20/1	SPACE		0	
35	20/1	SPACE			0	36	20/1	SPACE			0
37	20/1	SPACE	0			38	20/1	SPACE	0		
39	20/1	SPACE		0		40	20/1	SPACE		0	
41	20/1	SPACE			0	42	20/1	SPACE			0
								TOTAL CONNECTED KVA BY PHASE	6	13.2	2.7

	CONN KVA	CALC KVA	
LIGHTING	0	0	(125%)
LARGEST MOTOR	2.7	3.38	(125%)
OTHER MOTORS	5.4	5.4	(100%)
RECEPTACLES	0	0	(50%>10)
KITCHEN EQUIP	0	0	(N/A)

	CONN KVA	CALC KVA	
CONTINUOUS	1.8	2.25	(125%)
HEATING	0	0	(N/A)
COOLING	0	0	(N/A)
NONCONTINUOUS	12	12	(100%)
DIVERSE	0	0	(N/A)
METERED DEMAND	0	0	(125%)
TOTAL KVA	21.9	23	
BALANCED 3-PHASE AMPS		63.9	

ABOSSEIN #223054

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SEAL:

ALEXANDER ABOSSEIN — STATE OF WASHINGTON — 21891 — REGISTERED — PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

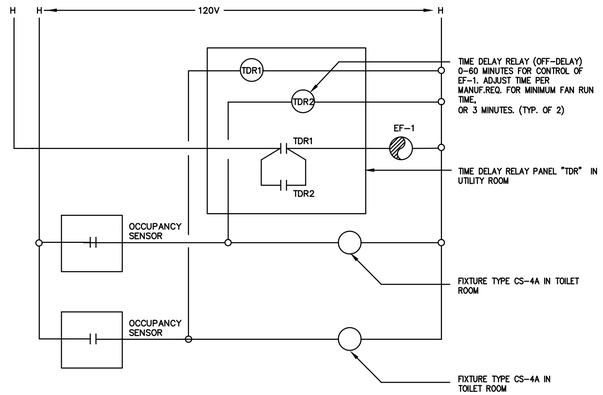
DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON
FACILITY #7184

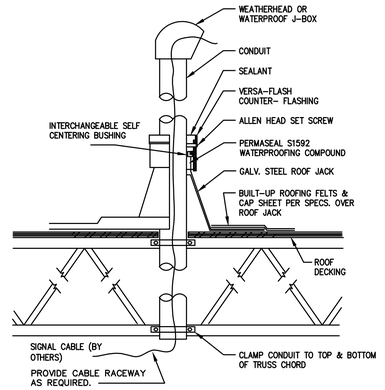
DESIGNED BY:	ALLIANCE ZADM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
ELECTRICAL PANEL SCHEDULES

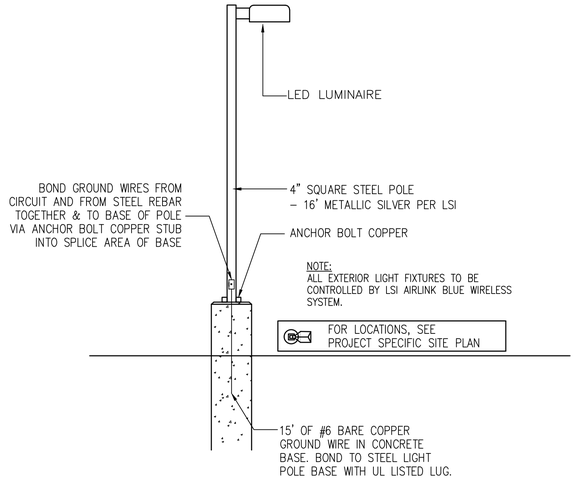
SHEET NO:
E2.2



TOILET ROOMS EXHAUST FAN CONTROL DIAGRAM | NTS | 1



ROOF JACK-SIGNAL CABLE CONDUIT | NTS | 2



SITE LIGHT POLE BASE GROUNDING DETAIL | NTS | 3

ABOSSEIN #223054

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CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen
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18215 72nd Avenue South
Kent, WA 98032
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SEAL:

ALEXANDER/ABOSSEIN
STATE OF WASHINGTON
21894
REGISTERED
PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

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PUYALLUP, WASHINGTON

FACILITY #7184

DESIGNED BY:	ALLIANCE ZADM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:

DIAGRAM + DETAILS - PART 1

SHEET NO:

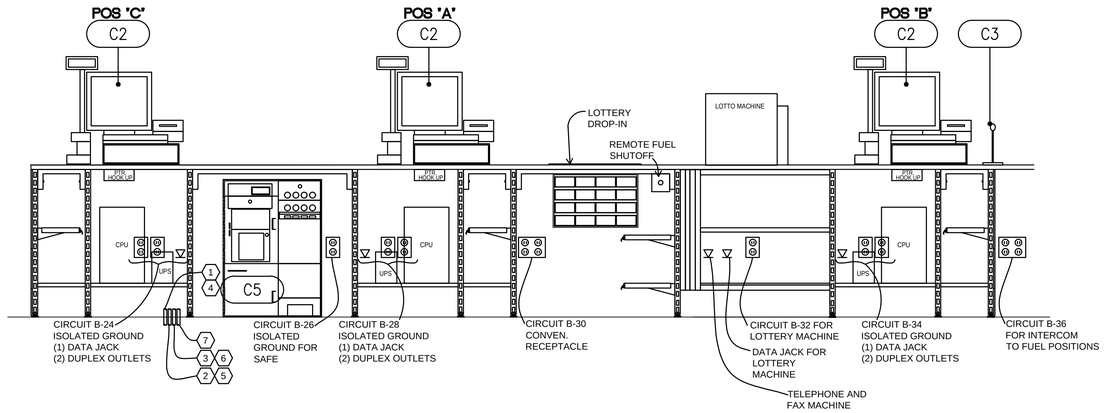
E3.0

GENERAL NOTES:

A. CASHIER ELEVATION IS FOR DESIGN INTENT ONLY. E.C. TO COORDINATE EXACT MILLWORK CONFIGURATION WITH MILLWORK MANUFACTURER PRIOR TO INSTALLATION OF ANY DEVICES.

KEYED NOTES:

1. 1-1/4" CONDUIT FROM MANAGERS CPU FOR DATA CABLES.
2. 1-1/4" CONDUIT FROM DISPENSER INTERFACE.
3. 5-1" CONDUIT FROM PANEL C. (CLEAN POWER)
4. 3/4" CONDUIT FROM OPTIONAL AUTOMATIC DOOR CONTROLLER.
5. 1-3/4" CONDUIT UNDER SLAB FOR GENERAL POWER.
6. 1-1/4" CONDUIT UNDER SLAB TO INTERCOM TROUGH.
7. 3/4" CONDUIT UNDER SLAB TO MANAGERS DESK IN OFFICE FOR SECURITY.

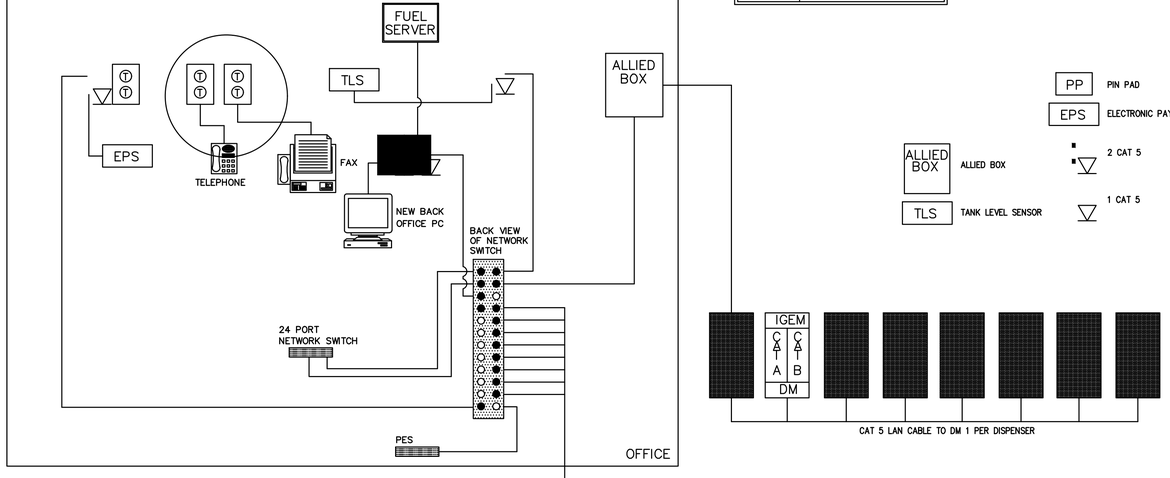


SALES COUNTER DETAIL

SCALE: 3/4"=1'-0"



SATELLITE DISH ON ROOF

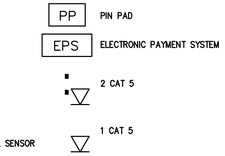


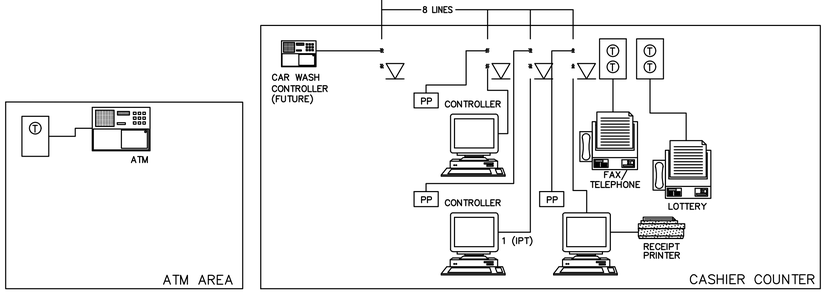
NOTES:
1. FC NEEDS FIXED IP ADDRESS 192.168.10.10
2. DSU LOCATION? THIS ASSUMES IT IS UNDER THE FRONT COUNTER AS TODAY
3. FC ASSIGNS DM IP ADDRESSES

WIRE LEGEND:	
———	CAT5 UTP
- - - - - -	CAT5 UTP PATCH CORD
————	LEGACY SERIAL CONNECTIONS

GENERAL NOTES

1. ALL WIRING MUST CONFORM TO NEC AND LOCAL ELECTRIC CODES.
2. ALL CONDUIT AND ELECTRICAL FITTINGS MUST BE RATED FOR GROUND USE.
3. POWER CONDITIONER SHALL BE INSTALLED ACCORDING TO MANUFACTURER INSTRUCTIONS.
4. IO GROUND BUSS SHALL BE INSULATED FROM THE PANEL VIA A NON-CONDUCTIVE MOUNTING: SQUARE D PKGTAR OR EQUIVALENT.
5. THE POWER CONDITIONER OUTPUT AND ALL ISOLATED, CONDITIONED CIRCUITS ARE TO BE RUN IN SEPARATE CONDUITS FROM ALL NON-CONDITIONED CIRCUITS. MULTIPLE CONDITIONED CIRCUITS MAY SHARE THE SAME CONDUIT.
6. ALL GROUND CONDUCTORS IN SUB PANELS MUST TERMINATE TO PROPER GROUNDING CONNECTIONS. DO NOT TERMINATE GROUNDING CONDUCTORS TO THE NEUTRAL BUSS IN A SUB-PANEL.

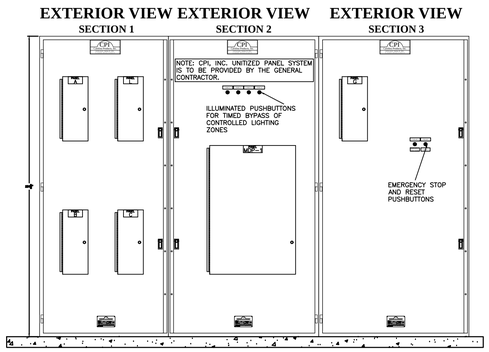


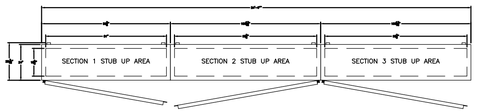


POS DIAGRAM

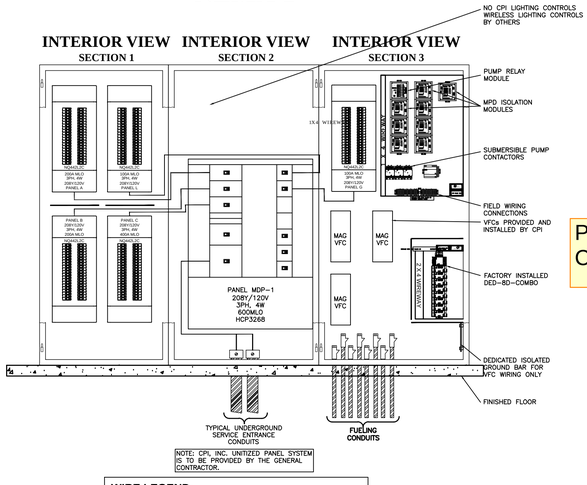
SCALE: N.T.S.

NEMA 1





NEMA 1



WIRE LEGEND:	
DASHED ———	FIELD
SOLID ———	FACTORY

ELEVATION DETAIL - UNITIZED PANEL SYSTEM

SCALE: N.T.S.

ABOSSEIN #223054

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SEAL:

ALEXANDER ABOSSEIN — STATE OF WASHINGTON — 21891 — REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #7184

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:

DIAGRAM + DETAILS - PART 2

SHEET NO:

E3.1

FAULT CURRENT SCHEDULE

DEVICE	FAULT	AIC RATING	L-N VOLTS	UTILITY			FED FROM				FEEDER						TRANSFORMER						TOTAL MOTOR	DIRECTLY CONNECTED MOTOR LOAD			
				FAULT	X	R	DEVICE	FAULT	X	R	SIZE	X / 1000'	R / 1000'	LENGTH	X	R	KVA	Z%	XR RATIO	FAULT AT PRIMARY	X	R	FAULT	KVA	FAULT	X	R
UTILITY XFMR	47,444	50,000	120V	46,300	0.002541	0.0005083											300	1.8	5	UTILITY	0.002542	0.0005083	1,144				
MSB-2	31,406	65,000	120V	30,247	0.003648	0.00156	UTILITY XFMR	46,300	0.002541	0.0005083	(2)#350kcmil	0.02	0.019	55'	0.0011	0.0011							1,159				
MSB-1	28,699	65,000	120V	27,734	0.003911	0.00185	MSB-2	30,247	0.003648	0.00156	(2)#500kcmil AL	0.0195	0.0215	14'	0.0003	0.0003							965				
EV	27,800	42,000	120V	26,893	0.004028	0.001919	MSB-1	27,734	0.003911	0.00185	#600kcmil	0.039	0.023	3'	0.0001	0.0001							907				
MSB-3	28,889	65,000	120V	27,727	0.003912	0.001851	MSB-2	30,247	0.003648	0.00156	(2)#500kcmil AL	0.0195	0.0215	14'	0.0003	0.0003							1,162				
MSB-4	27,648	65,000	120V	26,484	0.004088	0.001954	MSB-3	27,727	0.003912	0.001851	(3)#600kcmil	0.013	0.0077	14'	0.0002	0.0001							1,164				
CW	14,829	42,000	120V	14,110	0.006035	0.005992	MSB-4	26,484	0.004088	0.001954	(2)#250kcmil AL	0.0205	0.0425	95'	0.0019	0.004							719	49.1	545	0.2135	0.05337
MDP-1	27,317	65,000	120V	26,173	0.004127	0.001997	MSB-4	26,484	0.004088	0.001954	(2)#500kcmil AL	0.0195	0.0215	2'	0	0							1,144				
A	26,029	42,000	120V	24,993	0.004253	0.002228	MDP-1	26,173	0.004127	0.001997	#3/0	0.042	0.077	3'	0.0001	0.0002							1,036				
B	26,032	42,000	120V	24,993	0.004253	0.002228	MDP-1	26,173	0.004127	0.001997	#3/0	0.042	0.077	3'	0.0001	0.0002							1,039	2.8	31	3.745	0.9362
C	26,527	42,000	120V	25,423	0.004244	0.002066	MDP-1	26,173	0.004127	0.001997	#600kcmil	0.039	0.023	3'	0.0001	0.0001							1,104	44.6	495	0.2351	0.05877
G	25,409	42,000	120V	24,404	0.004265	0.002447	MDP-1	26,173	0.004127	0.001997	#1	0.046	0.15	3'	0.0001	0.0005							1,005	8.1	90	1.294	0.3236
L	25,397	42,000	120V	24,404	0.004265	0.002447	MDP-1	26,173	0.004127	0.001997	#1	0.046	0.15	3'	0.0001	0.0005							993	0.936	10	11.2	2.801

ARC-FLASH SCHEDULE

DEVICE	VOLTAGE	INCIDENT ENERGY (J/CM²)	ARCING CURRENT		ARCING TIME			ARC-FLASH BOUNDARY DISTANCE (MM)	WORKING DISTANCE
			MAX	REDUCED	@ MAX ARCING CURRENT (SECONDS)	BASIS	@ REDUCED ARCING CURRENT (SECONDS)		
UTILITY XFMR	208V	45.53	16,147	13,911	0.2		0.3	1,817	18"
MSB-2	208V	35.59	13,095	11,282	0.2		0.3	1,557	18"
MSB-1	208V	33.21	12,308	10,604	0.2		0.3	1,491	18"
EV	208V	32.37	12,026	10,361	0.2		0.3	1,468	18"
MSB-3	208V	33.39	12,366	10,654	0.2		0.3	1,496	18"
MSB-4	208V	32.22	11,977	10,319	0.2		0.3	1,463	18"
CW	208V	17.67	6,863	5,913	0.2		0.3	1,005	18"
MDP-1	208V	31.91	11,870	10,227	0.2		0.3	1,454	18"
A	208V	30.64	11,440	9,856	0.2		0.3	1,418	18"
B	208V	30.64	11,441	9,857	0.2		0.3	1,418	18"
C	208V	31.13	11,609	10,002	0.2		0.3	1,432	18"
G	208V	30.01	11,226	9,672	0.2		0.3	1,400	18"
L	208V	30	11,222	9,668	0.2		0.3	1,399	18"

VOLTAGE DROP SCHEDULE

DEVICE	FEEDER			BRANCH CIRCUIT	TOTAL VOLTAGE DROP	FEEDER
	VOLTAGE DROP	WIRE SIZE	LENGTH	MAX VOLTAGE DROP		VOLTAGE DROP
UTILITY XFMR	0%	#12	–	–	0%	0%
MSB-2	1.37%	(2)#350kcmil	55'	–	1.37%	1.37%
MSB-1	1.46%	(2)#500kcmil AL	14'	–	1.46%	0.09%
EV	1.49%	#600kcmil	3'	–	1.49%	0.03%
MSB-3	1.64%	(2)#500kcmil AL	14'	–	1.64%	0.27%
MSB-4	1.76%	(3)#600kcmil	14'	–	1.76%	0.13%
CW	***3.08%***	(2)#250kcmil AL	95'	1.59% (CKT 33)	4.67%	1.32%
MDP-1	1.79%	(2)#500kcmil AL	2'	–	1.79%	0.02%
A	1.81%	#3/0	3'	2.19% (CKT 13)	4%	0.02%
B	1.8%	#3/0	3'	2.84% (CKT 34)	4.64%	0.02%
C	1.81%	#600kcmil	3'	1.12% (CKT 24,26,28)	2.93%	0.02%
G	1.81%	#1	3'	2.24% (CKT 20)	4.05%	0.02%
L	1.8%	#1	3'	1.56% (CKT 24)	3.36%	0.02%

ABOSSEIN #223054

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PRCNC20231424
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3400 am/pm
FUEL CANOPY w/ 6 MPD's

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DESIGNED BY:	ALLIANCE Z&DM:
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DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE: FAULT CURRENT + ARC FLASH SCHEDULES

SHEET NO: E4.0

GENERAL NOTES:

1. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH POWER COMPANY FOR EXACT SERVICE CONNECTION REQUIREMENTS AND INCLUDE ALL NECESSARY COST IN BID.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH TELEPHONE COMPANY FOR EXACT SERVICE CONNECTION REQUIREMENTS AND INCLUDE ALL NECESSARY COST IN BID.
3. ALL ELECTRICAL EQUIPMENT SHALL HAVE AIC RATINGS EQUIVALENT OR HIGHER THAN AVAILABLE FAULT CURRENTS PROVIDED BY POWER COMPANY.
4. A UTILITY LOCATE SHALL BE PERFORMED PRIOR TO COMMENCEMENT OF TRENCHING.
5. LIGHTING CONTACTOR (INTERIOR LIGHTING ONLY) IS LOCATED WITHIN CPI CABINET.
6. ALL LIGHTING FIXTURES TO BE FURNISHED AND INSTALLED BY CONTRACTOR.
7. 'EM' AT LIGHT FIXTURE INDICATES LIGHT FIXTURE WITH EMERGENCY BACK UP. ALL EMERGENCY LIGHT FIXTURES SHALL BE SERVED FROM BATTERY BACKUP. EMERGENCY AND EXIT LIGHTS SHALL BE INSTALLED AND CIRCUITED PER THE LATEST CALIFORNIA ELECTRICAL CODE AND ALL LOCAL CODES (INSTALL A CENTRAL BATTERY SYSTEM WHERE THE USE OF INDIVIDUAL BATTERY UNITS ARE PROHIBITED BY LOCAL CODES). ALL EMERGENCY FIXTURES AND EXIT SIGNS SHALL BE CONNECTED TO UN-SWITCHED HOT LEG OF THE LOCAL LIGHTING CIRCUIT.
8. ALL EXTERIOR LIGHT FIXTURES TO BE CONTROLLED THROUGH THE LSI AIRLINK BLUE COMPLETE OUTDOOR LIGHTING WIRELESS MESH SYSTEM. AIRLINK BLUE SYSTEM INCLUDES DAYLIGHT AND MOTION SENSORS WITH DIMMING CONTROL CAPABLE OF AUTOMATICALLY SHUTTING OFF OUTDOOR LIGHTING WHEN DAYLIGHT IS AVAILABLE, EMPLOY AUTO FUNCTIONALITY WHEN AREA BECOMES OCCUPIED, AND CAPABLE OF PROVIDING CONTINUOUS DIMMING THROUGH A 50%-90% RANGE PER 2018 WSEC REQUIREMENTS. AIRLINK BLUE SYSTEM TO INCLUDE ASTRONOMICAL CLOCK AND TIME KEEPER AIRLINK BLUE COMPONENT FOR SCHEDULING CONTROLS SET PER 2018 WSEC REQUIREMENTS. ALL EXTERIOR LUMINAIRES TO INCLUDE FACTORY INTEGRATED BLUETOOTH RADIO/SENSOR CONTROLLERS. AIRLINK BLUE SYSTEM TO BE INITIALIZED VIA WEB APP AND FIELD COMMISSIONED VIA MOBILE APP TO THE OWNER'S REQUIREMENTS. ANY CHANGES OR UPDATES TO BE ACCOMPLISHED ON SITE VIA MOBILE APP.

SHEET NOTES:

(1) PROVIDE NEW LIGHT FIXTURE. INSTALL 3/4" PVC UNDERGROUND CONDUIT CONTAINING: (2) #10 THWN CU. AND (1) #10 CU EGC. FOR PARKING LOT LIGHTING. EXTEND CONDUIT BACK TO AIRLINK BLUE CONTROLS.

(2) PROVIDE AND INSTALL ESO SWITCH. INCLUDE ALL ASSOCIATED CONDUIT AND WIRE FOR COMPLETE INSTALLATION PER CEC 514.11 AND NFPA 30A SECTION 6.7. RUN WIRE IN 1" PVC-COATED RGS CONDUIT AND STUB UP WITH RGS. SEE DETAIL 3/E2.3. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION. SEE DETAIL IN TANK DRAWINGS FOR ELEVATION.

(3) PROVIDE AND INSTALL ESO SWITCH. COORDINATE EXACT LOCATION(S) WITH OWNER PRIOR TO INSTALLATION.

(4) PROVIDE 3/4" PVC UNDERGROUND CONDUIT AND (3) #10 THHN CU. WIRE (U.O.N.) FOR NEW AIR STATION. MAKE CONNECTION WITH WATER TIGHT FLEX, BOXES AND COVERS AS REQUIRED BY MANUFACTURER. FIELD VERIFY EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION.

(5) PROVIDE (1) 3" PVC CONDUIT WITH 1/4" PULL STRING FOR TELEPHONE. FIELD VERIFY EXACT VAULT LOCATION WITH SERVICE PROVIDER PRIOR TO INSTALLATION.

(6) PROVIDE (1) 1-1/2" CONDUIT FOR INSTALLATION OF ELECTRIC VEHICLE CHARGING STATION. 100A 208 VOLT 3Ø MIN. CAP AND MARK CONDUIT AS REQUIRED FOR ACCESS.

(7) PROVIDE (2) 1" PVC-COATED RGS SPARE UNDERGROUND CONDUITS TO FOR FUTURE VENT DIAGNOSTICS TO INTRINSICALLY SAFE AND POWER WIREWAYS INSIDE STORE (NEXT TO EPC CABINET).

(8) ALL SITE LIGHT POLE FIXTURES TO INCLUDE LSI AIRLINK BLUE LIGHTING SYSTEM MOTION DETECTOR MOUNTED ON LIGHT POLE. UPON ACTIVATION OF EITHER MOTION DETECTOR, ALL SITE POLE LIGHTS TO TRIGGER AT FULL BRIGHTNESS AND RETURN TO 50% BRIGHTNESS AFTER 15 MINUTES OF VACANCY.

(9) 60W HEAT TRACER LOCATED IN RPBA HOT BOX, REFER TO CIVIL UTILITY PLANS FOR EXACT LOCATION.

(10) PROPOSED SOLAR ZONE PER 2018 WSEC REQUIREMENTS.

(11) PROVIDE (1) 3/4" CONDUIT AND CONTROL WIRE TO CLOSEST EMERGENCY STOP BUTTON FOR CONNECTION TO VEHICLE CHARGING STATION.

(12) PROPOSED UTILITY TRANSFORMER EXACT LOCATION TO BE VERIFIED.

N.E.C HAZARDOUS AREA NOTES

<A> TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (UNDERGROUND TANK - FILL OPENING)
EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION:
Any pit, box, or space below grade level, any part of which is within the Division 1 or 2 classified location.
EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION:
Up to 18 inches above grade level within a horizontal radius of 10 feet from a loose fill connection and within a horizontal radius of 5 feet from a tight fill connection.

<B> TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (UNDERGROUND TANK VENT DISCHARGING UPWARD)
EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION:
Within 3 feet of open end of vent, extending in all directions.
EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION:
Space between 3 feet and 5 feet of open end of vent, extending in all directions.

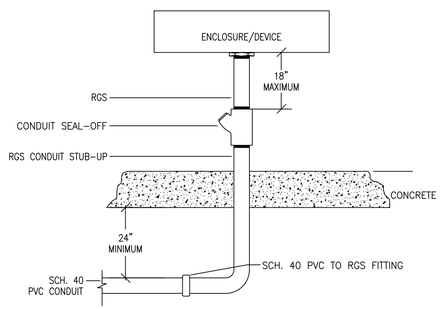
<C> TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (REMOTE PUMP - OUTDOOR)
EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION:
Any pit, box, or space below grade level if any part is within a horizontal distance of 10 feet from any edge of pump.
EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION:
Within 3 feet of any edge of pump, extending in all directions. Also up to 18 inches above grade level within 10 feet horizontally from any edge of pump.

<D> TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE - PITS)
EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION:
Any pit, box, or space below grade level, any part of which is within the Division 1 or 2 classified location.

<E> TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE - DISPENSER)
EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION:
Space classification inside the dispenser enclosure is covered in ANSI/UL 87, "Power Operated Dispensing Devices for Petroleum Products."

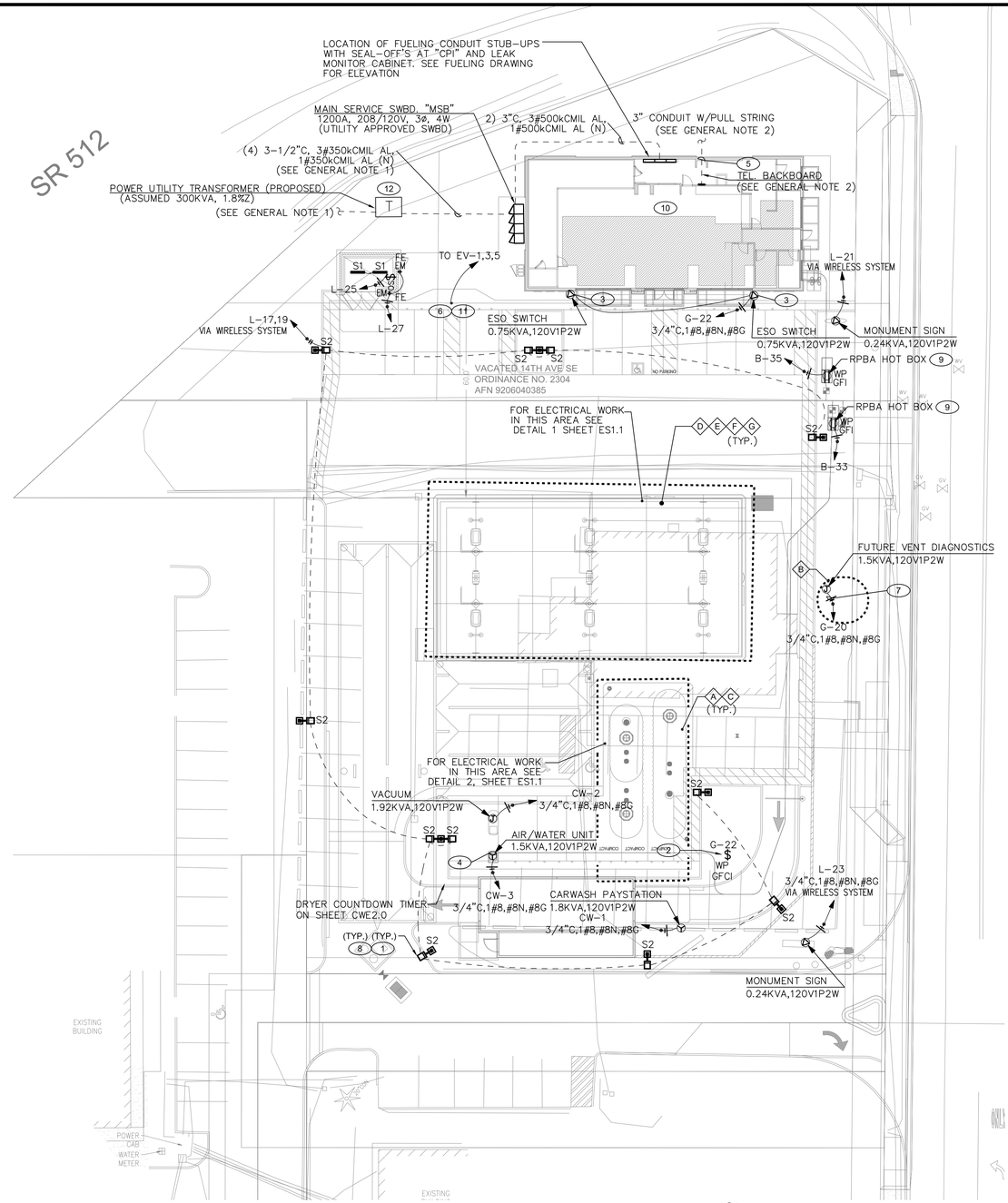
<F> TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE - DISPENSER)
EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION:
Within 18 inches horizontally in all directions extending to grade from (1) the dispenser enclosure or (2) that portion of the dispenser enclosure containing liquid handling components. Space classification inside the dispenser enclosure is covered in ANSI/UL 87, "Power Operated Dispensing Devices for Petroleum Products."

<G> TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE - OUTDOOR)
EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION:
Up to 18 inches above grade level within 20 feet horizontally of any edge of enclosure.



2 TYPICAL RGS STUB-UP W/ SEAL OFF

SCALE: NTS



1 ELECTRICAL SITE PLAN

1"=20'
0 10 20 40

SITE LUMINAIRE SCHEDULE

CALLOUT	SYMBOL	LAMP	DESCRIPTION	BALLAST	MOUNTING	MODEL	INPUT VA	TOTAL VA	LUMENS / LAMP	VOLTS	NOTES	QUANTITY
S1	—	(1) 31.59W LED	SURFACE MOUNTED STRIP LIGHT	0-10V DIMMABLE	SURFACE	LSI EG3-4-LED-4L-DA-S-UNV-DIM-50-80	31.59	31.59	4508	120V 1P 2W	TRASH/RECYCLE ROOM W/ EMERGENCY BATTERY PACK FOR 90 MINUTE ILLUMINATION, 4508 LUMENS, 143.42 LUMENS/WATT	2
S2	⊖	(1) 63W LED	LED POLE LIGHT	ELECTRONIC	POLE	LSI SLM-LED-09L-SIL-FT-50-70CRI-SINGLE-16'POLE+2'BASE	63	63	9657	208V 2P 2W	PARKING LOT, INCLUDE LSI AIRLINK BLUE SENSOR.	6

Know what's below. Call before you dig. Dial 811 (1-800-424-5555)

ABOSSEIN #223054

Abossein Engineering, L.L.C.
MECHANICAL - ELECTRICAL
CIVIL - LEED
FIRE PROTECTION
18465 NE 68TH ST
REDMOND, WA 98052
PH: (425) 462-9441
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CLIENT:
bp
ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
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SEAL:
ALEXANDER ABOSSEIN, STATE OF WASHINGTON, 21897, REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #7184

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
ELECTRICAL SITE PLAN

SHEET NO:
ES1.0

GENERAL NOTES:

1. ALL EXTERIOR LIGHTING TO BE CONTROLLED BY LSI AIRLINK BLUE WIRELESS BLUETOOTH MESH OUTDOOR LIGHTING CONTROL SYSTEM. REFER TO LSI AIRLINK BLUE SPECIFICATION SHEETS FOR EXACT INFORMATION ON SYSTEM.
2. REFER TO TANK ELECTRICAL DRAWINGS FOR FUELING CONDUIT FILL AND WIRE TYPES.
3. SEE TANK ELECTRICAL DRAWINGS FOR FURTHER REQUIREMENTS.
4. ALL LIGHTING FIXTURES TO BE FURNISHED AND INSTALLED BY CONTRACTOR.
5. ALL EXTERIOR LIGHT FIXTURES TO BE CONTROLLED THROUGH THE LSI AIRLINK BLUE COMPLETE OUTDOOR LIGHTING WIRELESS MESH SYSTEM. AIRLINK BLUE SYSTEM INCLUDES DAYLIGHT AND MOTION SENSORS WITH DIMMING CONTROL CAPABLE OF AUTOMATICALLY SHUTTING OFF OUTDOOR LIGHTING WHEN DAYLIGHT IS AVAILABLE, EMPLOY AUTO FUNCTIONALITY WHEN AREA BECOMES OCCUPIED, AND CAPABLE OF PROVIDING CONTINUOUS DIMMING THROUGH A 50%-90% RANGE PER 2018 WSEC REQUIREMENTS. AIRLINK BLUE SYSTEM TO INCLUDE ASTRONOMICAL CLOCK AND TIME KEEPER AIRLINK BLUE COMPONENT FOR SCHEDULING CONTROLS SET PER 2018 WSEC REQUIREMENTS. ALL EXTERIOR LUMINAIRES TO INCLUDE FACTORY INTEGRATED BLUETOOTH RADIO/SENSOR CONTROLLERS. AIRLINK BLUE SYSTEM TO BE INITIALIZED VIA WEB APP AND FIELD COMMISSIONED VIA MOBILE APP TO THE OWNER'S REQUIREMENTS. ANY CHANGES OR UPDATES TO BE ACCOMPLISHED ON SITE VIA MOBILE APP.

FLAG NOTES:

(1) PROVIDE (6) 1" PVC-COATED RGS UNDERGROUND CONDUITS TO LEAK DETECTION PANEL.
- (3) 1" CONDUITS FOR TURBINE POWER
- (3) 1" INTRINSICALLY SAFE CONDUITS FOR TANK MONITORING

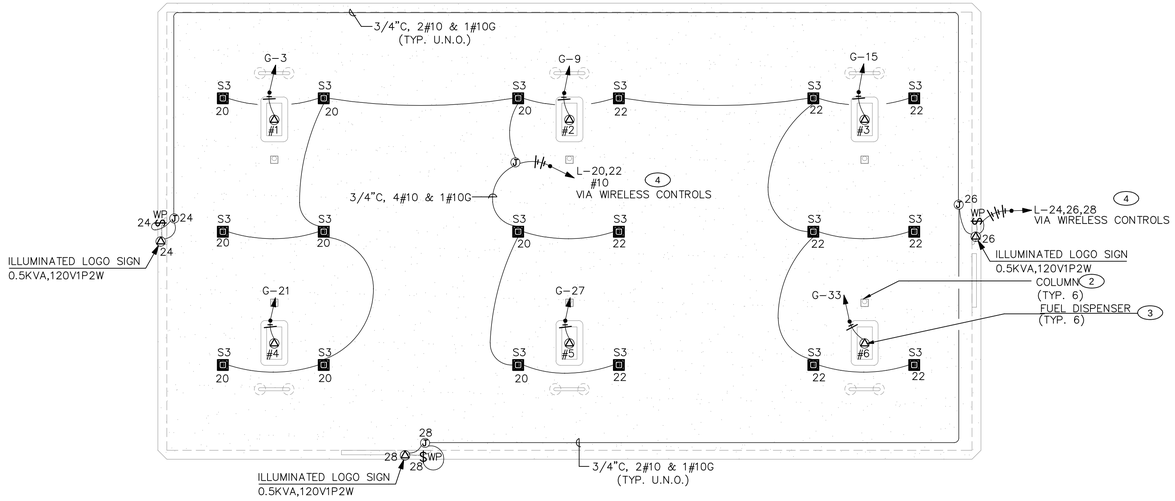
(2) PROVIDE (3) 1" PVC-COATED RGS UNDERGROUND CONDUITS FOR MUSAK AND SECURITY SYSTEMS. STUB IN COLUMN AND EXTEND CONDUITS BACK TO MUSAK AND SECURITY SYSTEMS LOCATED PER ARCO REPRESENTATIVE. ALL CONDUIT STUB-UPS SHALL BE RGS WITH SEAL OFFS AND MEET THE REQUIREMENTS SPECIFIED IN ARTICLE 514 OF THE NEC. FIELD VERIFY EXACT LOCATIONS.
- (2) 1" CONDUITS FOR MUSAK AND CAMERA WITH PULL ROPE
- (1) 1" CONDUIT FOR MUSAK LOOP TO EACH COLUMN

(3) PROVIDE (3) 1" PVC-COATED RGS UNDERGROUND CONDUITS FOR FUEL DISPENSER. ALL CONDUIT TO STUB-UP SHALL BE RGS WITH SEAL OFFS AND MEET THE REQUIREMENTS SPECIFIED IN ARTICLE 514 OF THE NEC. FIELD VERIFY EXACT LOCATION OF STUB-UPS. FIELD WRAP STEEL CONDUIT WITH A 100 MIL. COATING OF COAL TAR EPOXY.
- (1) 1" CONDUIT FOR POWER & DATA
- (1) 1" CONDUIT FOR MONITORING
- (1) 1" CONDUIT FOR INTERCOM

(4) PROVIDE (1) 3/4" PVC-COATED RGS UNDERGROUND CONDUITS FOR CANOPY LIGHTING AND SIGNS. ALL CONDUIT TO STUB-UP SHALL BE RGS WITH SEAL OFFS AND MEET THE REQUIREMENTS SPECIFIED IN ARTICLE 514 OF THE NEC. FIELD VERIFY EXACT LOCATIONS. EXTEND CONDUIT BACK TO LIGHTING CONTACTOR AND ASTRONOMIC TIME CLOCK. USE #10 CONDUCTORS FOR CANOPY LIGHTING AND SIGNS CIRCUITS.

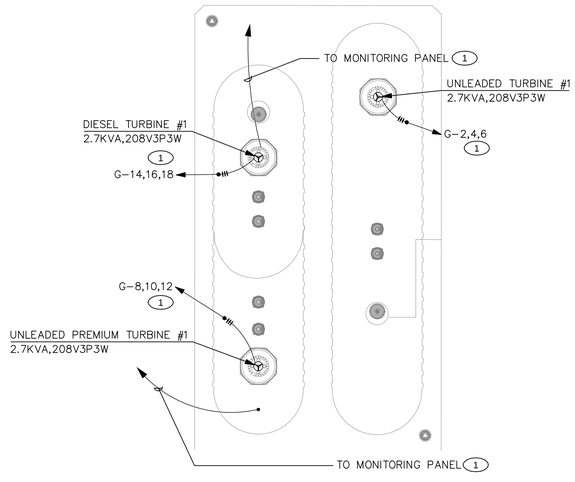
FUEL CANOPY LUMINAIRE SCHEDULE

CALLOUT	SYMBOL	LAMP	DESCRIPTION	BALLAST	MOUNTING	MODEL	INPUT VA	TOTAL VA	TOTAL LUMENS	VOLTS	NOTES	QUANTITY
S3	▣	(1) 102W LED	LED SURFACE MOUNT CANOPY FIXTURE; 5000K	ELECTRONIC	SURFACE	LSI SCV-LED-15L-SC-50	102	102	14963	120V 1P 2W	FUEL CANOPY, DIMMED 80%	18



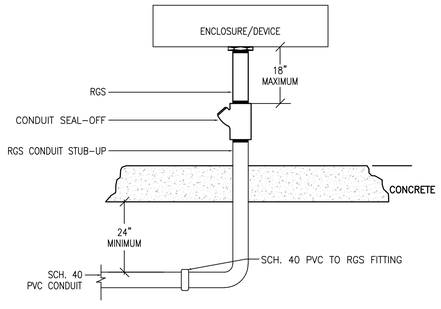
1 CANOPY ELECTRICAL PLAN

SCALE: 1/8" = 1'-0"



2 FUEL TANKS ELECTRICAL PLAN

SCALE: 1/8" = 1'-0"



3 TYPICAL RGS STUB-UP WITH SEAL OFF

SCALE: NTS

ABOSSEIN #223054

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18215 72nd Avenue South
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SEAL:

ALEXANDER ABOSSEIN — STATE OF WASHINGTON — 21891 — REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
SWC S MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON
FACILITY #7184

DESIGNED BY:	ALLIANCE ZADM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
ELECTRICAL SITE DETAILS

SHEET NO:
ES1.1

WATER HAMMER ARRESTER SCHEDULE

MARK	MANUFACTURER/ MODEL #	FIXTURE UNITS	INLET SIZE	REMARKS
WHA–A	PPP SC–500	1–11	1/2"	PER PDI STANDARD PDI–WH 201
WHA–B	PPP SC–750	12–32	3/4"	PER PDI STANDARD PDI–WH 201
WHA–C	PPP SC–1000	33–60	1"	PER PDI STANDARD PDI–WH 201

ELECTRIC WATER HEATER SIZING

FIXT. ID	QTY	DESCRIPTION	DEMAND	TOTAL
LV–1	2	LAVATORY	5 GPH	10 GPH
G16A	1	HANDSINK	5 GPH	5 GPH
G7	1	MOP SINK	15 GPH	15 GPH
G9B	1	3–COMPARTMENT SINK	45 GPH	45 GPH
		SUBTOTAL =	75 GPH	

DEMAND FACTOR: 0.8
HOT WATER DEMAND: 0.8 X 75 GPH =
60 GPH ENERGY INPUT CALCULATIONS:
60 GPH X 0.149 = 8.94 KW

MODEL	A.O. SMITH, DRE–52–12
RECOVERY RATE	74 GPH @ 100°F
ELECTRICAL INPUT	TEMPERATURE RISE
STORAGE CAPACITY	12 KW
	50 GALLONS

DOMESTIC HOT WATER CIRCULATING PUMP SCHEDULE

DESIGNATION:	HWCP–1
ZONE:	BUILDING
MANUFACTURER:	GRUNDFOS
MODEL:	UP15–18B7
TYPE:	INLINE
G.P.M.:	3
HEAD (FT–H20):	12
RPM:	2940
MOTOR FLA:	0.74
VOLTAGE:	115
PHASE:	1
WEIGHT (LBS):	6.7
REMARKS:	(1)(2)(3)

(1) ALL BRONZE PUMP, 125 PSI MIN. RATED.
(2) WITH 1" FLANGE CONNECTION.
(3) COORD. WITH ELEC'L CONTRACTOR FOR POWER TO PUMP.

GREASE INTECEPTOR SIZING

QTY	DESCRIPTION	WASTE F.U.PER FIXTURE	PIPING TOTAL SS F.U.
1	MOP SINK	3	3
1	3–COMP SINK	2	2
1	HAND SINK	2	2
1	FLOOR DRAIN	2	2
6	FLOOR SINK	2	12
	TOTAL		22

Total SS Drainage Fixture Units equals 21.

UPC TABLE 10–3
GRAVITY GREASE INTERCEPTOR SIZING

DFU'S	INTERCEPTOR VOLUME
8	500 GALLONS
21	750 GALLONS
35	1000 GALLONS
90	1250 GALLONS

PLUMBING FIXTURE SCHEDULE

FIXT. ID	DESCRIPTION	MANUFACTURER	MODEL	ROUGH–IN W	V	CW	HW	REMARKS
WC–1	WATER CLOSET(F.T.)	AMERICAN STANDARD	CHAMPION PRO 3195A.101	4"	2"	1/2"	–	ADA COMFORT HEIGHT, TWO–PEICE TANK TYPE TOILET, VITREOUS CHINA, ELONGATED BOWL, WHITE # 4225A.164 TANK, 1.25 GPF, WITH AMERICAN STANDARD 5901.100SS WHITE OPEN FRONT SEAT LESS COVER.
LV–1	LAVATORY	AMERICAN STANDARD	LUCERNE 0355.012.020	2"	1–1/2"	1/2"	1/2"	WALL MOUNTED, WHITE VITREOUS CHINA, 3 FAUCET HOLES, CONCEALED ARMS SUPPORT, AMERICAN STANDARD 6053.205.V035 SENSOR FAUCET SET FOR MAXIMUM 0.2 GALLONS PER CYCLE. PROVIDE UNDER DECK THERMOSTATIC MIXING VALVE; AND FLAT GRID DRAIN, WITH TRUEBRO LAVGUARD 102
A1C	CAPPUCCINO MACH	CURTIS	G3 PRIMO PCGT63099	–	–	1/2"	–	SEE ARCHITECTURAL PLANS
A33	BEAN–TO–CUP	SCHAERER	040381–00051EUS	1–1/2"	–	1/2"	–	SEE ARCHITECTURAL PLANS
BIB	FROZEN BEVERAGE DISPENSER	CORNELIUS	621460041 VIPER SHORT	–	–	1/2"	–	SEE ARCHITECTURAL PLANS
B2A	FOUNTAIN TOP ICE MAKER (CUBED)	HOSHIZAKI	KMD–860MRJ	1/4"	–	1/2"	–	SEE ARCHITECTURAL PLANS
B2B	FOUNTAIN TOP ICE MAKER (NUGGET)	SCOTSMAN	N0922R –32	3/4"	–	1/2"	–	SEE ARCHITECTURAL PLANS
B12A	INTERACTIVE DRINK DISPENSER	CORNELIUS	621058578, IDC PRO	3/4"	–	1/2"	–	SEE ARCHITECTURAL PLANS
B15	F'REAL BLENDER	F'REAL	FRLB6	3/4"	–	1/2"	–	SEE ARCHITECTURAL PLANS
D10	WALK–IN COOLER EVAPORATOR COIL	HEATCRAFT	LEC0130AS7 AMAB0200	3/4"	–	–	–	SEE ARCHITECTURAL PLANS
D11	WALK–IN FREEZER EVAPORATOR COIL	HEATCRAFT	LEC0120BS6 EMAB0200	3/4"	–	–	–	SEE ARCHITECTURAL PLANS
G6A	ICE MAKER	SCOTSMAN	ERC311 –32A	3/4"	–	1/2"	–	SEE ARCHITECTURAL PLANS
G7	MOP SINK	FIAT	MSB–3624	3"	2"	1/2"	1/2"	24"X 36" X 10", SHIPPING WEIGHT 50LBS. PROVIDE WIHT FIAT # 830–AA FAUCET
G8	ELECTRIC WATER HEATER	A.O.SMITH	DRE–52–12	3/4"ID	–	3/4"	3/4"	COMMERCIAL ELECTRIC WATER HEATER, ELECTRIC INPUT 18KW, 3PH, 50A. RECOVERY RATE 74 @ 100°F TEMPERATURE RISE, STORAGE CAPACITY 50 GALLONS. WATER HEATER SHALL HAVE A MINIMUM EFFICIENCY OF 0.93
G9B	3–COMPARTMENT SINK	ADVANCE TABCO	FC–3–1824 –18RL	3"	2"	1/2"	1/2"	18"X24" STAINLESS STEEL. WITH G9E FAUCET FISHER # 2210 RATED FOR 1.15 GPM @ 60 PSI
G11	WATER PURICIFATION SYSTEM	EVERPURE	EV9437–10	–	–	1"	–	SEE ARCHITECTURAL PLANS
G16A	HANDSINK	ADVANCE TABCO	7–PS–41	2"	1–1/2"	1/2"	1/2"	OVERALL SINK DIMENSION IS 20"x24", BOWL IS 14"X16" STAINLESS STEEL. WELDED 7'–3/4" HIGH SIDE SPLASHES. 2.2 GPM
G54	CARBONATOR	McCANNS	"BIG MAC" E400397	–	–	1/2"	–	SEE ARCHITECTURAL PLANS
TG10B	MED. CONDIMENT ISLAND	SHOPCO	–	1"	–	1/2"	–	SEE ARCHITECTURAL PLANS
FD–1	FLOOR DRAIN	ZURN	Z–415S	2"	1–1/2"	–	–	6"X6" SQUARE STRAINER, WITH 1/2" TRAP PRIMER. CONNECTION OR APPROVED EQUAL.
FS–1	FLOOR SINK	ZURN	Z–1901	3"	2"	–	–	12" X 12" RECEPTOR 8" SUMP DEPTH. OR APPROVED EQUAL.
FS–2	FLOOR SINK	ZURN	Z–1901	2"	2"	–	–	12" X 12" RECEPTOR 8" SUMP DEPTH. OR APPROVED EQUAL.
ET–1	EXPANSION TANK	AMTROL	ST–5	–	–	1/2"	–	MODEL ST–5, 2.0 GALLONS, STEEL SHELL, POLYPROPYLENE LINER, BUTYL DIAPHRAGM, FACTORY PRECHARGE AT 40 PSIG, MAXIMUM OPERATING TEMPERATURE = 200'F, MAXIMUM WORKING PRESSURE = 150 PSIG.
HWCP–1	HOT WATER RETURN CIRCULATING PUMP	GRUNDFOS	UP15–18B7	–	–	–	3/4"	3 GPM @ 12 FTHD, 115V/1PH/60Hz, 1/25HP, 25 WATTS, WITH TIME CLOCK AND AQUASTAT. COORDINATE WITH OWNER FOR TIMER SETTINGS. MOUNT PUMP 5FT ABOVE FINISHED FLOOR.
MV–1	THERMOSTATIC MIXING VALVE	WATTS	LFMMV–M1	–	–	3/4"	3/4"	POINT–OF–USE MIXING VALVE, BRONZE BODY CONSTRUCTION. SET OUTLET TEMPERATURE AT 105'F.
TP–1	TRAP PRIMING VALVE	PPP	PR–500	–	–	1/2"	–	PRESSURE DROP ACTIVATED TRAP PRIMER.
WCO–1	FLOOR CLEAN OUT	ZURN	Z1443–ZB	VRY	–	–	–	WALL CLEANOUT, DURA – COATED CAST IRON BODY, GAS AND WATERTIGHT ABS TAPERED THREAD PLUG, AND NICKEL BRONZE SECURED SQUARE, SMOOTH WALL ACCESS COVER AND FRAME. OR APPROVED EQUAL.
FCO–1	FLOOR CLEAN OUT	ZURN	Z1440–ZB	VRY	–	–	–	"LEVEL–TROL" ADJUSTABLE FLOOR CLEANOUT, DURA–COATED CAST IRON BODY WITH GAS AND WATERTIGHT ABS TAPERED THREAD PLUG AND ROUND SCORIATED CAST IRON EXTRA–HEAVY–DUTY SECURED TOP ZB, ADJUSTABLE TO FINISHED FLOOR, OR APPROVED EQUAL.
COTG–1	CLEANOUT TO GRADE	ZURN	Z1474	4"	–	–	–	HEAVY DUTY CLEANOUT HOUSING. DURA–COATED CAST IRON BODY WITH INTEGRAL ANCHOR FLANGE, SECURED SCORIATED COVER WITH LIFTING DEVICE. W/ Z1400, OR APPROVED EQUAL.
WHA–1	WATER HAMMER ARRESTOR	ZURN	Z170	–	–	3/4"	–	SHOKTROL WATER HAMMER ARRESTOR, STAINLESS STEEL CONSTRUCTION. OR APPROVED EQUAL.
RD–1	ROOF/OVERFLOW DRAIN	ZURN	Z165–NH –Z–G–SS, –VP–SC–E	3"	–	–	–	Ø8–3/8 COMBINATION MAIN ROOF &OVERFLOW DRAIN W/ LOW SILHOUETTE DOMES DOUBLE TOP–SET® DECK PLATE. OUTLET NO–HUB, PIPE SIZE 4"ø, BODY WITH DOME 4–1/2" DOME HEIGHT, GALVANIZED CAST IRON, STAINLESS STEEL MESH SCREEN OVER DOME, SECONDARY CLAMPING COLLAR W/ STATIC EXTENSION. VANDAL PROOF SECURED TOP. OR APPROVED EQUAL.
OD–1	OVERFLOW DRAIN	ZURN	Z198–G	3"	–	–	–	PARAPET SCUPPER SLEEVE, DURA–COATED CAST IRON BODY WITH FIXED POSITION COMBINATION MEMBRANE FLASHING FLANGE AND CLAMP AND PARAPET WALL FACE CLOSING, GALVANIZED CAST IRON. OR APPROVED EQUAL.
HB–1	HOSE BIB	ACORN	8151		–	3/4"	–	WITH ANTI–SIPHON VACUUM BREAKER. INTEGRAL STOP, LOCKING DOOR, S.S. BOX MOUNT HOSE BIBB. MOUNT 24" ABOVE GRADE
HB–2	HOSE BIB	ACORN	8121 LF		–	3/4"	–	WITH VACUUM BREAKER, MOUNT HOSE BIBB 12" ABOVE FINISHED FLOOR
HB–3	POST HYDRANT	WOODFORD	SRH–MS		–	3/4"	–	WITH DUAL CHECK SPOUT, 3/4" HOSE CONNECTION AND GALVANIZED STEEL STANDPIPE WITHOUT DRAIN OUTLET.

NOTE:
PLUMBING CONTRACTOR TO VERIFY ALL EQUIPMENT CONNECTION SIZES AND PROVIDE ALL REDUCERS, INCREASER, AND ADAPTORS AS REQUIRED.

PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	CW	COLD WATER PIPING
FCW	FCW	FILTERED COLD WATER PIPING
	HW	HOT WATER PIPING (140°F)
	HWR	HOT WATER RETURN PIPING
	SS OR W	SOIL OR WASTE PIPING BELOW GRADE
	SS OR W	SOIL OR WASTE PIPING ABOVE GRADE
GW	GW	GREASE WASTE BELOW GRADE
	V	VENT PIPING
CD	CD	CONDENSATE DRAIN PIPING
D	ID	INDIRECT DRAIN PIPING
	WHA	WATER HAMMER ARRESTOR
	P.O.C.	POINT–OF–CONNECTION
		GAS COCK WITH UNION
		CAPPED
		UNION
	UP	PIPE UP
	DN	PIPE DOWN
	DN	PIPE TEE DOWN
	BV	BALL VALVE
	CV	CHECK VALVE
	RED	REDUCER
	PUMP	
	FCO/GCO	FLOOR CLEANOUT OR GRADE CLEANOUT
	WCO	WALL CLEANOUT
	AFF	ABOVE FINISHED FLOOR
	BFF	BELOW FINISHED FLOOR
	BG	BELOW GROUND
	(E)	EXISTING
	(N)	NEW
	NTS	NOT TO SCALE
	IE	INVERT ELEVATION
	QTY.	QUANTITY
	V.I.F.	VERIFY IN FIELD
	FU	FIXTURE UNIT
	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER

MATERIAL SPECIFICATIONS

SERVICES		CAST IRON NO–HUB	GALV. STEEL SCH. 40	BLACK STEEL SCH. 40	TYPE M COPPER	TYPE L COPPER	TYPE K COPPER	REMARKS
COLD WATER	ABOVE GROUND					•		
	BELOW GROUND						•	
HOT WATER	ABOVE GROUND					•		
	BELOW GROUND						•	
WASTE	ABOVE GROUND	•						
	BELOW GROUND	•						
VENT	ABOVE GROUND	•						
	BELOW GROUND	•						
INDIRECT WASTE	INDOOR				•			
	OUTDOOR				•			
NATURAL GAS	INDOOR			•				PAINTED WITH RUST INHIBITING PAINT
	OUTDOOR		•					
STORM DRAIN	ABOVE GROUND	•						
	BELOW GROUND	•						
CO2	ABOVE GROUND					•		SILVER BRAZED; NITROGEN PURGED
CO2 VENT	ABOVE GROUND					•		SILVER BRAZED; NITROGEN PURGED
CONDENSATE PIPE	ABOVE GROUND				•			

DRAWING SCHEDULE

SHT. NO.	DESCRIPTION
P0.1	PLUMBING LEGEND, SCHEDULES & CALCULATIONS
P0.2	GENERAL NOTES & CALCULATIONS
P0.3	PLUMBING SPECIFICATIONS
P1.0	PLUMBING ROUGH–IN PLAN
P1.1	SANITARY DRAINAGE & VENT PLUMBING PLAN
P1.2	DOMESTIC WATER SUPPLY PLUMBING PLAN
P1.3	PLUMBING ROOF PLAN
P2.0	RISER DIAGRAMS
P4.0	PLUMBING DETAILS – I
P4.1	PLUMBING DETAILS – II
P4.2	PLUMBING DETAILS – III
CWP1.1	CARWASH WASTE AND VENT PLANS
CWP1.3	CARWASH WATER AND ROOF PLAN
CWP2.0	CARWASH RISER DIAGRAMS

CLIENT:
bp
ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
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SEAL:
ALEXANDER ABDESSEIN
STATE OF WASHINGTON
23091
REGISTERED
PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION:	PROJECT NO: 21730

DRAWING TITLE:
PLUMBING LEGEND, SCHEDULES & CALCULATIONS

SHEET NO:
P0.1

PIPE SIZING INFORMATION

City main (source) water pressure	**55.0** psi	<== Information provided by: Puyallup 253-841-5512
Water meter loss (psi)	**3.0** psi	Dept.
Backflow preventer loss	**10.0** psi	
Pressure losses between meter and bldg. (psi)	**0.0** psi	Explanation: losses to bldg.
Water pressure at building entry:	42.0 psi	**If water pressure exceeds 80PSI, pressure regulator is req'd**
		Regulator Required: **no**
Maximum available water pressure for distribution:	42.0 psi	PRV Set Point: **n/a**

BUILDING WATER PRESSURE LOSS:

Elevation loss	4.3 psi	**Max. fixture height from source:**	**10** ft at 0.433 psi/ft
Backflow preventer loss	psi (include all devices downstream of PRV)		
Min. fixture pressure	**30.0** psi (at most remote fixture)		
Total pressure loss	34.3 psi		
	42.0 psi	(maximum available water pressure for distribution)	
	-34.3 psi	(minus total pressure loss)	
Remaining available pressure:	7.7 psi		
Longest piping run	**150** ft	7.7 psi x	100 ft
x add'l fitting factor of 1.33	200 ft	200 ft	
Max. allowable pressure loss for pipe sizing	**3.845 psi/100ft**		

COLD WATER PIPE SIZING TABLE

PIPE SIZE	FIX. UNITS (flush tank)		FIX. UNITS (flush valve)	Flow Rate (gpm)	Velocity (ft/s)
1/2"	**1**		-	*2.4*	*3.2*
3/4"	**7**		-	*6.1*	*4.0*
1"	**18**		-	*13*	*4.7*
1-1/4"	**32**		-	*21*	*5.3*
1-1/2"	**60**		**16**	*33*	*5.9*
2"	**215**		**102**	*68*	*7.0*
2-1/2"	**479**		**365**	*120*	*8.0*
3"	**748**		**700**	*171*	*8.0*
4"	**1755**		**1755**	*300*	*8.0*
6"	**4480**		**4480**	*670*	*8.0*

HOT WATER PIPE SIZING TABLE

PIPE SIZE	FIX. UNITS (flush tank)	Flow Rate (gpm)	Velocity (ft/s)
1/2"	**1**	*2.5*	*3.4*
3/4"	**7**	*6.5*	*4.2*
1"	**18**	*13*	*5.0*
1-1/4"	**30**	*20*	*5.0*
1-1/2"	**49**	*28*	*5.0*
2"	**123**	*49*	*5.0*
2-1/2"	**245**	*75*	*5.0*
3"	**406**	*107*	*5.0*
4"	**840**	*187*	*5.0*
6"	**2765**	*419*	*5.0*

FIXTURE UNITS CALCULATIONS

FIXT ID (ITEM)	QTY	DESCRIPTION	WATER PIPING F.U.PER FIXTURE	WATER PIPING TOTAL CW F.U.	WATER PIPING TOTAL HW F.U.	WASTE PIPING F.U.PER FIXTURE	WASTE PIPING TOTAL SS F.U.
PLUMBING FIXTURES							
WC-1	2	WATER CLOSET (FLUSH TANK)	2.5	5	–	4	8
LV-1	2	LAVATORY	1	1.5	1.5	1	2
A1C	1	CAPPUCCINO MACHINE	0.5	1	–	0.5	1
A33	3	BEAN-TO-CUP	0.5	1.5	–	0.5	1.5
B1B	1	FROZEN BEVERAGE DISPENSER	0.5	0.5	–	–	–
B2A	1	FOUNTAIN ICE MAKER (CUBED)	0.5	0.5	–	0.5	0.5
B2B	1	FOUNTAIN ICE MAKER (NUGGET)	0.5	0.5	–	0.5	0.5
B12A	2	INTERACTIVE DRINK DISPENSER	1	2	–	0.5	1.0
B15	1	F'REAL BLENDER	1	0.5	–	0.5	0.5
G7	1	MOP SINK	3	2,25	2.25	3	3
G6A	1	ICE MAKER	1	1	–	1	1
G9B	1	3-COMPARTMET SINK	–	–	–	6	6
G9E	1	3-COMP. SINK PRE-RINSE FAUCET	3	2.25	2.25	–	–
G16A	1	HAND SINK	2	3.0	3.0	2	2
G54	1	CARBONATOR	1	1		–	–
TG10B	1	MEDIUM REFRIGERATED CONDIMENT	–	–		2	2
FD-1	3	FLOOR DRAIN	–	–	–	2	6
FS-1	1	FLOOR SINK	–	–	–	9	9
FS-2	6	FLOOR SINK	–	–	–	2	12
HB-1	2	HOSE BIBB	2.5	5	–	–	–
HB-2	2	HOSE BIBB	2.5	5.0	–	–	–
HB-3	1	HOSE BIBB	2.5	2.5	–	–	–
			TOTAL	30.75	9.00		58.0

NOTES:
1. WATER SUPPLY FIXTURE UNITS ARE BASED ON CPC, APPENDIX A.
2. DRAINAGE FIXTURE UNITS ARE BASED ON CPC, CHAPTER-7 TABLE 7-3.

BACKFLOW PREVENTER NOTES

1. AS MANUFACTURED BY "WATTS" OR EQUAL:
   RPBA = REDUCED PRESSURE #009QT
   DCVA = DOUBLE CHECK #007QT
   AVB = VACUUM BREAKER
2. VALVES TO BE LINE SIZE.
3. INSTALL AT THE FOLLOWING LOCATIONS (MINIMUM):
   A. DCVA AT ICE MAKER
   B. RPBA AT COFFEE BREWER/ESPRESSO MACHINE (IF INSTALLED)
   C. RPBA AT BEVERAGE BAR/CARBONATOR (POP MACHINE PIPING DOWNSTREAM OF CARBONATOR SHALL BE PLASTIC IN ORDER TO AVOID CARBONIC POISONING.
   D. BACKFLOW PREVENTERS SHALL BE MOUNTED MAXIMUM 5 FEET ABOVE FLOOR PER UPC 2015, SEC. 603.4.3. DISCHARGE DRAINS WITH AIRGAP, TYP.
4. BACKFLOW PREVENTERS SHALL BE FULLY INSTALLED AND TESTED PRIOR TO PRE-OPENING INSPECTION

GENERAL NOTES

1 PLUMBING CONTRACT DRAWINGS ARE IN PART DIAGRAMMATIC, COVERING THE SCOPE OF WORK AND GENERAL ARRANGEMENT OF THE EQUIPMENT, PIPING, ETC., AND THE APPROXIMATE SIZE OF EQUIPMENT AND MATERIALS. THE CONTRACTOR SHALL FOLLOW THESE DRAWINGS IN LAYING OUT THE PLUMBING WORK. PLUMBING CONTRACTOR SHALL CONSULT GENERAL, SPRINKLER, HEATING/VENTILATING/AIR CONDITIONING CONTRACT AND ELECTRICAL DRAWINGS TO FAMILIARIZE HIMSELF WITH THAT WORK AND TO VERIFY THE SPACES IN WHICH THE PLUMBING WORK WILL BE INSTALLED.

2 BECAUSE OF THE NATURE AND SCALE OF THE DRAWINGS, CERTAIN BASIC PLUMBING ITEMS SUCH AS UNIONS, IN FITINGS, ELBOWS, ETC., MAY NOT BE SHOWN. WHERE SUCH ITEMS ARE REQUIRED BY OTHER SECTIONS OF THE SPECIFICATIONS, OR WHERE THEY ARE REQUIRED BY THE NATURE OF THE WORK OR BY CODES AND REGULATIONS, THEY SHALL BE FURNISHED AND INSTALLED AT NO ADDITIONAL COST TO THE OWNER. THE DRAWINGS INDICATE GENERAL LOCATIONS OF PIPING, EQUIPMENT, DUCTWORK AND SIMILAR. THE EXACT LOCATION TO BE DETERMINED BY THE CONTRACTOR TO BEST FIT THE LAYOUT OF THE JOB.

3 ALL EQUIPMENT SHALL BE TIGHTLY COVERED AND PROTECTED AGAINST DIRT, WATER, AND CHEMICAL OR MECHANICAL INJURY OR THEFT. PLUMBING FIXTURES SHALL BE COVERED WITH HEAVY PAPER COVERINGS AFTER INSTALLATION AND SHALL BE THOROUGHLY CLEANED AFTER COMPLETION OF THE PROJECT.

4 ALL MATERIALS SUCH AS VALVES, FITTINGS, PIPING, EQUIPMENT, PUMPS, COILS, ETC., SHALL BE PROPERLY PROTECTED, AND ALL PIPING OPENINGS SHALL BE TEMPORARILY CLOSED BY THE CONTRACTOR FOR THE WORK UNDER HIS CHARGE, ON A DAILY BASIS, AT THE END OF EACH WORKING DAY, SO AS TO PREVENT OBSTRUCTION AND DAMAGE. THE ABOVE REQUIREMENTS ARE MANDATORY.

5 THE CONTRACTOR SHALL SEE THAT ALL MATERIALS, INSTALLATION AND WORKMANSHIP IS PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF ALL APPLICABLE CODES, LAWS, OR ORDINANCES OF THE STATE, AND ALL COUNTY AND LOCAL CITY CODES OR ORDINANCES, INCLUDING ALL STATE OR LOCAL BOARD OF HEALTH, FEDERAL AND STATE ENVIRONMENTAL PROTECTION REGULATIONS, STATE ENERGY CODES AND UTILITY REGULATORY AGENCIES.

6 ALL WORK SHALL BE FURTHER PERFORMED IN ACCORDANCE WITH THE NATIONAL BOARD OF FIRE UNDERWRITERS, THE PLUMBING AND BUILDING CODES, NATIONAL ELECTRICAL CODE, THE OCCUPATIONAL SAFETY AND HEALTH ACT, THE AMERICAN GAS ASSOCIATION, AND ALL SUCH OTHER SPECIFIC CODES AS MAY BE REFERRED TO IN THE INDIVIDUAL SECTIONS OF THE SPECIFICATIONS.

7 PIPE SIZES SHOWN ON THE DRAWINGS ARE THE MINIMUM SIZES ALLOWED REGARDLESS OF THE CODE MINIMUM, EXCEPT WHEN THE CODE MINIMUM SIZE IS LARGER THAN THAT SHOWN.

8 THE CONTRACTOR SHALL MAINTAIN A CURRENT SET OF CONTRACT PRINTS ON THE CONSTRUCTION SITE AT ALL TIMES, ON WHICH HE SHALL ACCURATELY RECORD THE ACTUAL INSTALLATION OF ALL PLUMBING WORK. AS WORK PROGRESSES, MARK CHANGES MADE WHETHER RESULTING FROM JOB CONDITIONS, ADDENDA, FORMAL CHANGE ORDERS OR OTHER INSTRUCTIONS ISSUED BY THE ENGINEER.

9 THE PLUMBING CONTRACTOR SHALL INDICATE PROGRESS BY COLORING IN VARIOUS PIPES, FIXTURES, AND ASSOCIATED APPURTENANCES EXACTLY AS THEY ARE ERECTED AND INSTALLED.

10 MARK ALL PIPE SIZES AND LOCATIONS DURING CONSTRUCTION. ALSO, MARK LOCATIONS OF ALL VALVES AND VARIOUS EQUIPMENT, APPARATUS, AND ASSOCIATED APPURTENANCES AS ERECTED WEEKLY DURING CONSTRUCTION.

11 AT THE COMPLETION OF THE JOB THESE PRINTS, INCORPORATING CHANGES, ADDENDA AND ADDED DATA NOTED ON MARKED-UP PRINTS, INCLUDING DIMENSIONED LOCATIONS OF UNDERGROUND PIPING BEYOND LIMITS OF BUILDING, SHALL BE SUBMITTED TO THE ENGINEER FOR FINAL REVIEW AND COMMENT. THE PRINTS WILL BE RETURNED WITH APPROPRIATE COMMENTS AND RECOMMENDATIONS. THESE CORRECTED PRINTS TOGETHER WITH CORRELATED PRINTS INDICATING ALL THE REVISIONS, ADDITIONS AND DELETIONS OF WORK, SHALL FORM THE BASIS FOR PREPARING A SET OF RECORD DRAWINGS.

12 WHERE PIPING, AND OTHER PLUMBING APPURTENANCES PASS THROUGH FIRE PARTITIONS, FIRE WALLS, OR FLOORS, INSTALL A FIRE-STOP THAT PROVIDES AN EFFECTIVE BARRIER AGAINST THE SPREAD OF FIRE, SMOKE AND GASES. FIRE-STOP MATERIAL SHALL BE UL APPROVED, PACKED TIGHT AND COMPLETELY FILL CLEARANCES BETWEEN RACEWAYS AND OPENINGS. FLOOR, EXTERIOR WALL, AND ROOF SEALS SHALL ALSO BE MADE WATERTIGHT AS APPROVED BY THE ADMINISTRATIVE AUTHORITY.

13 ARRANGE AND INSTALL PIPING APPROXIMATELY AS INDICATED, STRAIGHT, PLUMB AND AS DIRECT AS POSSIBLE. FORM RIGHT ANGLES OR PARALLEL LINES WITH BUILDING WALLS. KEEP PIPES CLOSE TO WALLS, PARTITIONS AND CEILINGS, OFFSETTING ONLY WHERE NECESSARY TO FOLLOW WALLS AND AVOID INTERFERENCE WITH OTHER MECHANICAL ITEMS. LOCATE GROUPS OF PIPES PARALLEL TO EACH OTHER; SPACE THEM AT A DISTANCE TO PERMIT ACCESS FOR SERVICING VALVES.

14 WATER PIPING SHALL BE PITCHED TO POINTS OF DRAINAGE WITH CONSTANT UNIFORM SLOPE.

15 INSTALL HORIZONTAL PIPING AS HIGH AS POSSIBLE WITHOUT SAGS OR HUMPS.

16 GRADE DRAINAGE AT UNIFORM SLOPE OF NOT LESS THAN 1/4" PER FOOT TOWARD THE POINT OF DISPOSAL. WHEN APPROVED BY ADMINISTRATIVE AUTHORITY, PIPE SIZE 4" AND LARGER MAY HAVE A SLOPE OF NOT LESS THAN 1/8" PER FOOT.

17 WHERE CHANGES IN PIPE SIZES OCCUR, USE ONLY REDUCING FITTINGS.

18 FOR DRAINAGE PIPING CHANGES IN DIRECTION, USE LONG SWEEP WHERE POSSIBLE, OTHERWISE, SHORT SWEEP 1/4 BENDS, OR COMBINATION WYE AND 1/8 BENDS; USE SANITARY TEE BRANCHES ONLY FOR HORIZONTAL BRANCHES DISCHARGING TO STACKS.

19 INSTALL SECTIONALISING VALVES AND ON EACH BRANCH LINE TO MULTI-FIXTURE GROUPS. LOCATE VALVES IN A READILY ACCESSIBLE LOCATION, DO NOT CONCEAL. DO NOT LOCATE VALVE SYSTEMS BELOW HORIZONTAL UNLESS INDICATED ON PLANS. LOCATE ANGLE STOP VALVES BELOW THE SINK OR WATER CLOSET.

20 WATER SUPPLY TO ALL FIXTURES AND CONTAINERS SHALL BE SO INSTALLED AS TO PREVENT POSSIBLE BACK SIPHONAGE OF POLLUTED WATER. ALL SUPPLIES SHALL BE EITHER ABOVE THE FLOOD RIM OF THE FIXTURE OR SEPARATED FROM THE DRAINAGE END BY MEANS OF AN APPROVED VACUUM BREAKERS.

21 PROVIDE PIPING AND FIXTURE TRAPS. CONNECT TO FIXTURES AND OTHER EQUIPMENT INDICATED OR SPECIFIED AS REQUIRING SOIL, WASTE, DRAIN AND VENT FACILITIES.

22 LAY ALL PIPING TRUE TO LINE AND GRADE, FIT ENDS TOGETHER, MATCH SO THAT SEWER OR DRAIN WILL HAVE SMOOTH AND UNIFORM INSERT. FOLLOW LOCATIONS AND ELEVATIONS AT SITE. AS THE PIPE LAYING PROGRESSES, CLEAR PIPE INTERIOR OF CEMENT, DIRT, AND OTHER FOREIGN MATERIALS. DURING WORK STOPPAGE PERIODS, PROVIDE EFFECTIVE PLUGS OR COVERS FOR OPEN ENDS OF PIPE AND DRAINS.

23 PROVIDE CLEANOUTS WHERE INDICATED AND AT INTERVALS OF 100' OR AS REQUIRED BY LOCAL PLUMBING CODE AND WHERE REQUIRED AT CHANGES OF DIRECTIONS OF SOIL AND WASTE STACKS. INSTALL CLEANOUTS SO AS TO BE ACCESSIBLE FOR EASY REMOVAL AND TO PROVIDE CLEARANCE FOR RODDING. CLEANOUTS SHALL BE THE SAME SIZE AS PIPE SERVED EXCEPT THAT NO CLEANOUT NEED BE LARGER THAN FOUR INCHES.

24 EXTEND VENT PIPES 12 INCHES ABOVE ROOF AND 10FT MINIMUM AWAY FROM ANY FRESH AIR INTAKES AND AT LEAST 48 INCHES AWAY FROM A PARAPET WALL.

25 SANITARY VENT PIPING SHALL BE GRADED SO THAT THE AIRFLOW TO THE OUTSIDE WILL BE CONTINUOUSLY UPWARD AND SO THAT NO LOW POINTS WILL BE DRAINED.

26 MAKE TIGHT CONNECTION BETWEEN WATER CLOSET FLANGES AND EARTHENWARE FIXTURE BY MEANS OF AN APPROVED MOLDED WAX RING OR SETTING COMPOUND AND BOLTING.

27 VENTS: PROVIDE FLASHING FOR STACKS PASSING THROUGH ROOF. MAKE WATER-TIGHT AT ROOF. DO NOT LOCATE VENT THROUGH ROOF LESS THAN 24 INCHES FROM A PARAPET WALL.

28 ALL PLUMBING FIXTURES AND PIPING ARE TO BE LISTED BY AN APPROVED LISTING AND TESTING AGENCY AND PROPERLY LABELED.

29 COORDINATE ALL LOCATIONS, SIZES, AND ELEVATIONS OF ALL SLEEVES THROUGH WALLS, BEAMS, SLABS AND FOOTING WITH STRUCTURAL AND ARCHITECTURAL DRAWINGS. ALL PIPES SLEEVING THROUGH FOOTINGS SHALL HAVE A SLEEVE DIAMETER OF TWO PIPE SIZES OVER THE PIPE PASSING THROUGH THE FOOTING. NO PIPE TO BE PLACED THROUGH FOOTING UNLESS APPROVED BY THE STRUCTURAL ENGINEER.

30 ALL PIPES SHALL BE PROTECTED AT THE POINT THEY CROSS BUILDING EXPANSION JOINT, EITHER WITH AN EXPANSION FITTINGS OR IN ANOTHER MANNER ACCEPTABLE TO THE ENGINEER.

31 PLUMBING CONTRACTOR SHALL CONNECT ALL GAS PIPING TO ALL GAS RELATED UNITS PER PLAN WITH LISTED AND APPROVED GAS SHUT-OFF VALVE, SEDIMENT TRAP, AND UNION.

32 FAUCET CONTROLS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 POUNDS.

33 PENETRATION OF FLOOR/CEILING ASSEMBLIES AND ASSEMBLIES REQUIRED TO HAVE A FIRE-RESISTANCE RATING SHALL BE PROTECTED IN ACCORDANCE WITH THE BUILDING CODE.

34 WHERE WATER PRESSURE WITHIN A BUILDING EXCEEDS 80 PSI, AN APPROVED WATER-PRESSURE REDUCING VALVE CONFORMING TO ASSE 1003 WITH STRAINER SHALL BE INSTALLED TO REDUCE THE PRESSURE IN THE BUILDING WATER DISTRIBUTION PIPING TO 80 PSI STATIC OR LESS.

35 DISINFECTION OF POTABLE WATER SYSTEM SHALL COMPLY WITH THE LOCAL AND THE STATE PLUMBING CODE.

36 PROPER ACCESS MUST BE PROVIDED FOR THE TESTING AND MAINTENANCE OF THE BACKFLOW PREVENTER. IF THE BACKFLOW PREVENTER IS INSTALLED MORE THAN 5'-0" ABOVE THE FLOOR, SPECIAL PROVISIONS MUST BE MADE.

37 PROVIDE AND INSTALL A SINGLE GAS ISOLATION VALVE FOR THE MULTIPLE GAS METER BANKS FOR THE ENTIRE BLDG.

38 ALL PIPING SHALL MAINTAIN AT LEAST 5'-0" CLEARANCE IN FRONT OF THE HVAC SUPPLY AND RETURN OPENINGS.

39 PLASTIC PIPES ARE NOT PERMITTED TO BE INSTALLED WITHIN THE AIR PLENUM SPACE.

40 HUNG WASTE PIPING SHALL BE STRUCTURALLY SUPPORTED AS TIGHT AS POSSIBLE BELOW THE STRUCTURAL BEAMS TO GAIN MORE HEAD SPACE AS IT PITCH TOWARDS THE LOWEST POINT TO KEEP WASTE PIPING WITHIN THE CEILING SPACE.

41 CONTRACTOR TO PROVIDE AND INSTALL QUICK DISCONNECT GAS LINES AT ALL COOKING EQUIPMENT.

42 NO NON-METALLIC PIPING IS ALLOWED WITHIN THE RETURN-AIR PLENUMS.

43 AIR BARRIER TESTING REPORTS SHALL BE SUBMITTED TO THE CITY OF LACEY BUILDING DEPARTMENT PRIOR TO CALLING FOR FINAL INSPECTION.

CLIENT: bp ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	2/6/24	PERMIT RESUBMITTAL
2		
3		
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10		
11		
12		

SEAL: ALEXANDER ABOSSETTI, STATE OF WASHINGTON, 21691, REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
GENERAL NOTES & CALCULATIONS

SHEET NO:
P0.2

SPECIFICATIONS

SECTION 15400 – PLUMBING

1.00 – GENERAL

1.01 DESCRIPTION OF WORK

Furnish all labor, materials, equipment and services required for and/or reasonably incidental to the completion of the following work.
A. Sanitary waste and vent piping system including connections to building sewer as shown.
B. Domestic hot and cold water systems including water heater, and related accessories and controls. Connection to building water as shown.
C. Plumbing fixtures, trim and accessories including installation and support.
D. Flashing and sealing of roof and exterior wall penetrations for water tightness.
E. Caulking and sealing of floor and wall penetrations and formed shaft penetrations.
F. Backing for securing fixtures, trim and piping.
G. Access doors where shown or required by code.
H. Hangers, supports, and guides.
I. Cleanup of debris and final cleanup of drains, fixtures and equipment.
J. Record drawings and operating manuals.
K. License, permits and associated fees.
L. Cutting, drilling and patching for all surfaces in relation to plumbing work.
M. Condensate drains from HVAC equipment, and gas piping

1.02 RELATED WORK INCLUDED UNDER OTHER SECTIONS

A. HVAC and Electrical Work. 15500 and 16000
B. Fire Protection Work 153000 (if applicable)

1.03 EXAMINATION OF SITE

A. Visit site before submitting bid and check location of all existing conditions which will affect this work, verify dimensions and locations shown on drawings and cover all costs. Contractor shall assume reasonable variations or minor omissions and shall complete proposed work without additional cost. Failure to visit site will not lessen responsibility or entitle additional compensation for work not included in proposal.

B. Visit site of the work, compare it with the drawings and specifications as to the conditions under which work is to be performed, ascertain and check all conditions and elevations and take all measurements which may affect the work. No allowance shall subsequently be made for any extra expense or claims due to failure or neglect under this requirement to make such examination, including examination of restricted working conditions or such other difficulties visually observed during site visit. Contractor is responsible for becoming completely familiar with the architectural and structural conditions and limitations which will exist in the building and to provide all labor, tools and materials required to produce a completely concealed installation as indicated on the plans, specifications, and required by the code.

1.04 DRAWINGS

The accompanying drawings shall be considered part of these specifications. Work and materials shown on the drawings and not mentioned in the specifications and vice versa shall be executed as if specifically mentioned or shown in both. The drawings shall be considered as schematic in nature and minor modifications of the work to comply with the structure as found shall be made.

1.05 RULES AND REGULATIONS

A. All work and material shall be in full accordance with the latest rules and regulations of the State Fire Marshal and other applicable State and local rules and regulations. Nothing in these drawings or specifications shall be construed to permit work not conforming to these codes.

B. Furnish without any extra charge any additional material and labor when required to comply with these laws, ordinances and codes regardless of whether shown or mentioned in these specifications of drawings.

C. All work and material shall be in accordance with the Landlord's Mech/Elect. Design Criteria. All contractors shall obtain a copy from the Lndlord's Tenant Coordinator or Mall Operations manager and become familiar with the requirements contained within prior to bidding the job. Where Landlord's requirements conflict with Codes or Ordinances the strictest interpretation shall apply.

1.06 SUBMITTALS

A. Submit for review to the Owner a complete and all–inclusive list of equipment and materials proposed for use (6 copies), accompanied by manufacturer's data sheets. Data shall be forwarded in a single package written 15 days after award of contract. Submit six blackline prints and one reproducible shop drawing showing proposed plumbing installation. Include sizes, locations and other required information to coordinate installation with other trades.

B. Within 5 days after award of contract, submit 6 copies of a letter stating any materials that contractor wishes to substitute, to the Owner for approval. Include such information as manufacturer's name, type of material, certified ratings, overall appearance, and necessary information to explain function and operation of material. All proposed substitutions shall be equal in quality, design, utility and appearance to material, equipment or method specified.

1.07 AS–BUILT DRAWINGS

A set of plumbing plans will be furnished to the Contractor on which he shall indicate the installation "as–built" as the work progresses. Upon completion of the work, a set of reproducible drawings shall be obtained from the Owner at cost, and all changes as noted on the record set of prints shall be incorporated thereon. This set of reproducibles, along with one set of blueprints, shall be delivered to the Owner upon completion and before final acceptance of the project.

1.08 GUARANTEE

The Contractor shall leave the entire installation in complete working order free from any defective material, workmanship or finish. He shall guarantee to repair or replace, without charge, defects due to faulty workmanship or material for a period of one year from the date of filing of the Notice of Completion.

1.09 OPERATION MANUALS AND OWNER INSTRUCTIONS

A. Provide complete operation and maintenance manuals covering all Plumbing systems and equipment that have been installed. Three (3) copies of the manual shall be bound in hardback binders.

B. Provide instructions to owner as to operation of all equipment. Instruction period to commence for minimum of (2) hours and shall be scheduled at owner's convenience.

1.10 CUTTING AND PATCHING

A. The contractor shall do all cutting, drilling and patching which may be required for the installation of the work under this Section of the Specifications.
B. Patching shall be of the same workmanship, material, and finish and shall match accurately all surrounding construction in a manner satisfactory to the Owner. No cutting of the structure shall be permitted without written approval of the Owner.

2.00 – MATERIALS – PIPING

Building drain and vent piping materials shall comply with the local authority having jurisdiction. All sanitary system materials shall be listed by an approved listing agency.

A. Interior Underground Sanitary and Waste Piping: No–Hub C.I. pipe and fittings or ABS DWV sch. 40. Where cast iron pipe, fittings and stainless steel couplings are used they shall be listed and tested in accordance with standards referenced in the 2019 CPC Table 701.2. Pipes and fitting shall be marked with country of origin, manufacture's name or registered trademark as defined in the product standards, the third party certifier's mark, and the class of the pipe or fitting.

B. Interior Suspended Sanitary and Vent Piping:
1. 3" and Larger – No–Hub C.I. or ABS DWV sch 40.
2. 2" and Smaller – Schedule 40 galvanized steel pipe with screwed durham cast iron fittings for waste and vent

C. Interior Domestic Water Piping Above Ground:
3" and Smaller – Type L hard tempered copper with solder end fittings. 95–5 tin and antimony solder jointing (lead–free).

D. Outdoor Above Ground Domestic Water Piping:
3" and Smaller – Type L hard tempered copper with solder end fittings. 95–5 tin and antimony solder jointing (lead–free).

E. Domestic Water Piping Below Ground:
Type K copper pipe shall be used. When piping is installed within a building and under a concrete slab, it shall be installed without joints. When joints are unavoidable, they shall be brazed.
a. Protective pipe covering shall be factory or field applied accordingly to manufacturers written instructions.
b. 2 ½" or larger: Products shall be Polyken No. 1027 primer and Polyken No. 910 tape coating, 10 mil, minimum 1" overlap required.
c. 2" and smaller: Products shall be 10 mil plastic sleeve protector.

F. Condensate Drain Piping:
Copper water tube ASTM B88, Type "M", solder with 95–5 solder, lead–free type.

2.01 PIPE FLASHINGS

AS APPROVED BY ROOF MEMBRANE MANUFACTURER.

2.02 VALVES

A. Gate Valves: Red & White 204 or equal, 3" and smaller.
B. Check Valves: Red & White 238 or equal, 3" and smaller.
C. Ball Valves: Nibco 580–70 or equal, 3" and smaller.

2.03 PLUMBING FIXTURES AND TRIM:

Plumbing fixtures to be furnished and installed under this contract. See plumbing fixture schedule.

2.04 PIPE HANGERS AND SUPPORTS

A. Superstrut, Grinnell, or approved equal.
B. Installation per manufacturer's recommendations.
C. Pipe hangers shall have non–metallic felt or elastomeric liner or wrap applied to the pipe for electrolytic protection where hangers and supports are used to support copper tubing or pipe. The liner or wrap shall be designed to allow expansion or contraction of the piping.

2.05 PIPE SLEEVES

Shall be provided to protect all piping through concrete and masonry walls. Annular spaces between sleeves and pipes shall be filled or caulked in an approved manner. Annular spaces between sleeves and pipes in fire–resistance–rated assemblies shall be filled or tightly caulked in accordance with the building code. All underslab cast iron piping shall be covered with polyethylene sleeve (polywrap) and contractor must follow manufacturer's manual for proper installation.

2.06 TEMPERATURE AND PRESSURE RELIEF VALVE

Temperature & pressure relief valve shall discharge full line size to an approved waste receptor through an air gap as indicated on plans or 6" minimum, 24" maximum.

2.07 SCALD GUARD PROTECTION

Provide and install lavatory scald protection for waste piping and hot water piping.

2.08 DOMESTIC PIPING INSULATION

A. Provide and install "insulation protection shield" for piping with foam or fiberglass insulation.
B. Insulate all rainwater piping with 1" thick fiberglass insulation below the deck up to 25 feet of horizontal run.
C. Insulate all horizontal waste piping (Hung) with 1–1/2" thick fiberglass insulation above noise sensitive areas ONLY.

D. Insulate all domestic water piping to meet California Energy Code Table 120.3–A. Pipes less than 1" diameter require 1" of insulation if operating between 105–140°F, and 1.5" of insulation if operating over 140°F. All piping outside the building or on roof shall be insulated with 1–1/2" thick Armstrong Armaflex or approved equal, and sections butted firmly together.

E. Insulate all condensate drain piping with 1/2" thick Armstrong Armaflex or equal, and sections butted firmly together.
F. Insulate all hot water piping with 1" thick fiberglass insulation.
G. Provide and install scald guard protection/insulation under sinks with exposed p–traps and hot water supplies.
H. Minimum R–values for hot water piping insulation having pipe diameter of less than or equal to 2" is R–4, for larger than 2" diameter is R–6.
I. All outdoor insulation shall be protected with aluminum jacket.

2.09 CLEANOUT

A. Accessible cleanout shall be provided at the base of each waste stack and rainwater leaders. Additional cleanout shall be provided in a drainage line for each horizontal change of direction exceeding 135 degrees. Cleanout must be provided on a horizontal drain line exceeding 5ft or more in length serving sinks or urinals. An approved type of 2–way cleanout fitting shall be installed outside of a building at the lower end of a building drain and extended to grade.

2.10 WATER HEATER

A. Provide anchors and straps to resist horizontal displacement due to earthquake motion.
B. Strapping shall be located upper 1/3 and lower 1/3 of its vertical dimensions. Straps shall be a minimum 2"x16 gage properly secured to wall studs. Elevate water heater at least 4" minimum above the finished floor with an approved base. Provide a 22 gage water tight drain pan, corrosion resistant, at the bottom of the water heater. Drain pan shall have a 3/4" drain line to be discharged into an approved receptor by means of an air gap. A properly sized thermal expansion tank shall be provided at the water heater. Hot water supply for the lavatories and hand sinks shall not exceed 110°F temperature.

2.11 TRENCHING

A. All trenches deeper than the footing of any building or structure and paralleling the same shall be at least 45 degrees therefrom.

3.00 – INSTALLATION AND EXECUTION

3.01 GENERAL

A. Cast–Iron Hubless with stainless steel shielded coupling shall be supported horizontally at every other joint, unless over 4 feet, then support each joint adjacent to joint, not to exceed 18", brace at not more than 40ft intervals, support at each horizontal branch connection. Hangers shall not be placed on the coupling. Support vertical pipes at the base and each floor not to exceed 15ft. Hangers and Supports for all piping shall comply with the CPC 2010 Table 3–2.

3.02 SPECIAL REQUIREMENTS, RESPONSIBILITIES AND TESTING

A. Install piping generally level, free of traps and unnecessary bends, to conform with building requirements. Pipe to be free of defects, and installed to avoid any possible galvanic action by isolating dissimilar metals.
B. Test and record available domestic water pressure in static and dynamic conditions For dynamic testing record pressure and flow rate in gallons per minute. Transmit this information to the engineer before proceeding with the work.

C. Provide all tests specified hereinafter and as otherwise required. Provide all test equipment, including test pumps, gauges, instruments and other equipment required. Pressure gauges used shall be graduated in increments not greater than 5 pounds per square inch. No plumbing or drainage system or part thereof shall be covered, concealed, or put into use unless it has been specified. Conduct all tests in the presence of the Owner's representative, and obtain the necessary jurisdictional authority inspections.

D. Apply a water test to the waste, and vent systems whether in its entirety or in sections; if applied to the entire system, tightly close all openings in the piping except the highest opening, and fill the system with water to the point of overflow.

If the system is tested in sections, tightly plug each opening except for the highest opening of the section under test, and fill each section with water, but test with no less than a 10' head of water. In testing successive sections, test at least the upper 10' of the next preceding section so that no joint or pipe in the building (except the uppermost 10' of the system) shall have been submitted to a test of less than a 10' head of water. Keep water in the system or in the portion under test for at least 24 hours before inspection starts, with the system tight at all points.

E. Domestic water system shall be tested and proved tight under a pressure of not less than 120 PSI. Piping must stand the test for a period of 24 hours without leaking.

F. Chlorination of the domestic cold and hot water piping systems in accordance with standard testing procedures and local health department requirements. Testing by a firm such as Bennet–Marine or equal. Submit certificate of satisfactory test results.

G. Upon completion of testing, certify to the Architect, in writing that the specified tests have been performed and that the installation complies with the specified requirements.

3.03 PIPING INSTALLATION

A. Make changes in size of pipe with reducing fittings; bushings will not be permitted except for bell shaped copper bushings.
B. Install dielectric insulating unions in water piping between copper piping and ferrous piping or equipment – Epco, or equal.
C. Install exposed polished chrome connections from fixtures or equipment with special care. Show no tool marks or threads at fittings.
D. Cap openings in piping during construction.
E. Provide 85% red brass pipe IPS, in connection to faucets, flush valves, hose bibbs or similar items requiring rigid piping. Extend brass pipe from fixture to point where piping can be securely fastened to building construction. All exposed piping and stop valves in connection to fixtures shall be chrome plated brass.
F. Install unions adjacent to valves and where necessary to facilitate disassembly of piping.
G. Escutcheons: Fit exposed pipes passing through floors, walls or ceilings with escutcheons. Manufacture special sizes of escutcheons from steel and prime coat same. Cut in round, rectangular or square space to provide a clean appearance acceptable to the Architect.
H. Support piping independently of equipment to which it is connected.
I. Make copper solder joints with 95/5 solder, or silfos; clean surfaces to be joined free of oil, grease, rust or oxides and apply Flux to each joint before heating assembly.
J. Rough–in and make final connections to all other equipment furnished under other Divisions, requiring plumbing connections.

3.04 SUBSTITUTIONS

A. One or more makes of materials and methods may have been specified to establish the standard of quality, workmanship, finish and design required, but other materials or methods equal or better in quality, workmanship, finish, design, and guaranteed performance, may be submitted for review and approval as substitution. All substitutions are subject to review and approval by Architect, Engineer, and Owner.

B. Substitutions shall be requested in a written form and shall be accompanied with a signed statement that proposed substitution is equal, or better than specified. Additional documentation to substantiated proposed substitution may be required by Owner, Architect, and Engineer. Contractor shall submit as directed.

C. Contractor shall accompany request for substitution letter with a completed CSI Substitution Form include the comparison for following:
1. Performance Data
2. Dimensions
3. Costs and Delivery Schedule
4. Listed and Approved

D. A written signed statement from the General Contractor shall accompany substitution request form assuring that:
1. Dimensions has been verified with project conditions and has coordinated with other trades. Substitution does not affect dimensions shown on drawings.
2. He shall pay and burden the costs for changes to the project including redesign, reengineering and review of substitution. Only one engineering review time is allowed for each product substitution. Contractor shall be responsible for additional review time and shall pay Architect and Engineer's time at their professional rate schedule.
3. He has confirmed that the proposed substitution will have no adverse affect on other trades, the construction schedule, or specified warranty requirements.
4. He has confirmed that maintenance and service parts will be locally available for the proposed substitution.

E. Cost savings resulting from substitution shall be returned to the contract or the Owner if the substitution is permitted.

F. No work involving materials submitted for substitution shall proceed until written acceptance is received from the Owner. The Owner is the final judge of acceptability of preferred substitutions.

3.05 COORDINATION

A. Coordinate work with other trades to avoid conflict and to provide correct rough–in and connection for equipment furnished under other trades that require plumbing connections. Inform Contractors of other trades of the required access to and clearances around equipment to maintain service ability and code compliance.

B. Verify equipment dimensions and requirements with provisions specified under this Section. Check actual job conditions before fabricating work. Report necessary changes in time to prevent needless work. Changes or additions, subject to additional compensation, which are made without written authorization and an agreed price, shall be at the Contractor's risk and expense.

3.06 MARKING AND IDENTIFICATION

A. All domestic cold water, hot water, sanitary sewer, sanitary vent, condensate drain, and natural gas piping shall have visible permanent labels at every 20 feet, the direction of normal flow shall be clearly shown, at least once per room, and shall be visible from the floor level. The minimum size of the letters shown on table 6–1 below. Valves shall be labeled with stenciled or stamped metal tags bearing the name of the system they carry.

TABLE 6–1

PIPE SIZE (INCHES)	SIZE OF LETTER (INCHES)
½ – 1 ¼	½
1 ½ – 2	¾
2 ½ – 6	1 ¼
8 – 10	2 ½

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

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SEAL:

ALEXANDER ABOSSEIN
STATE OF WASHINGTON
21891
REGISTERED
PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI

3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

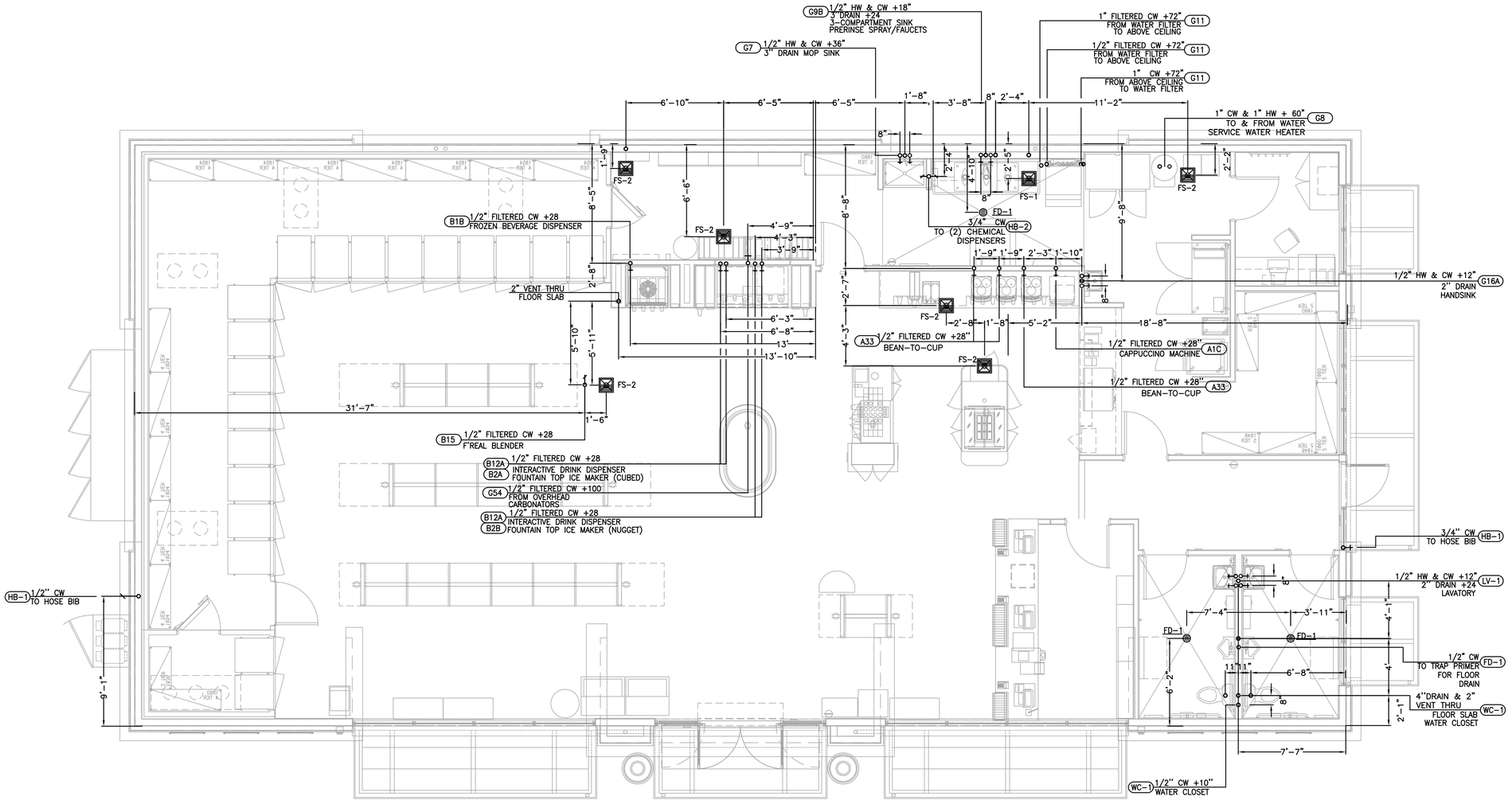
DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION:	PROJECT NO: 21730

DRAWING TITLE:

PLUMBING SPECIFICATIONS

SHEET NO:

P0.3



1 / P1.0 PLUMBING ROUGH-IN PLAN

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

CLIENT:

bp

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BP WEST COAST PRODUCTS, LLC

Barghausen
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PRCNC20231424
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ARCO NTI

3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

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PUYALLUP, WA 98371

FACILITY #7184

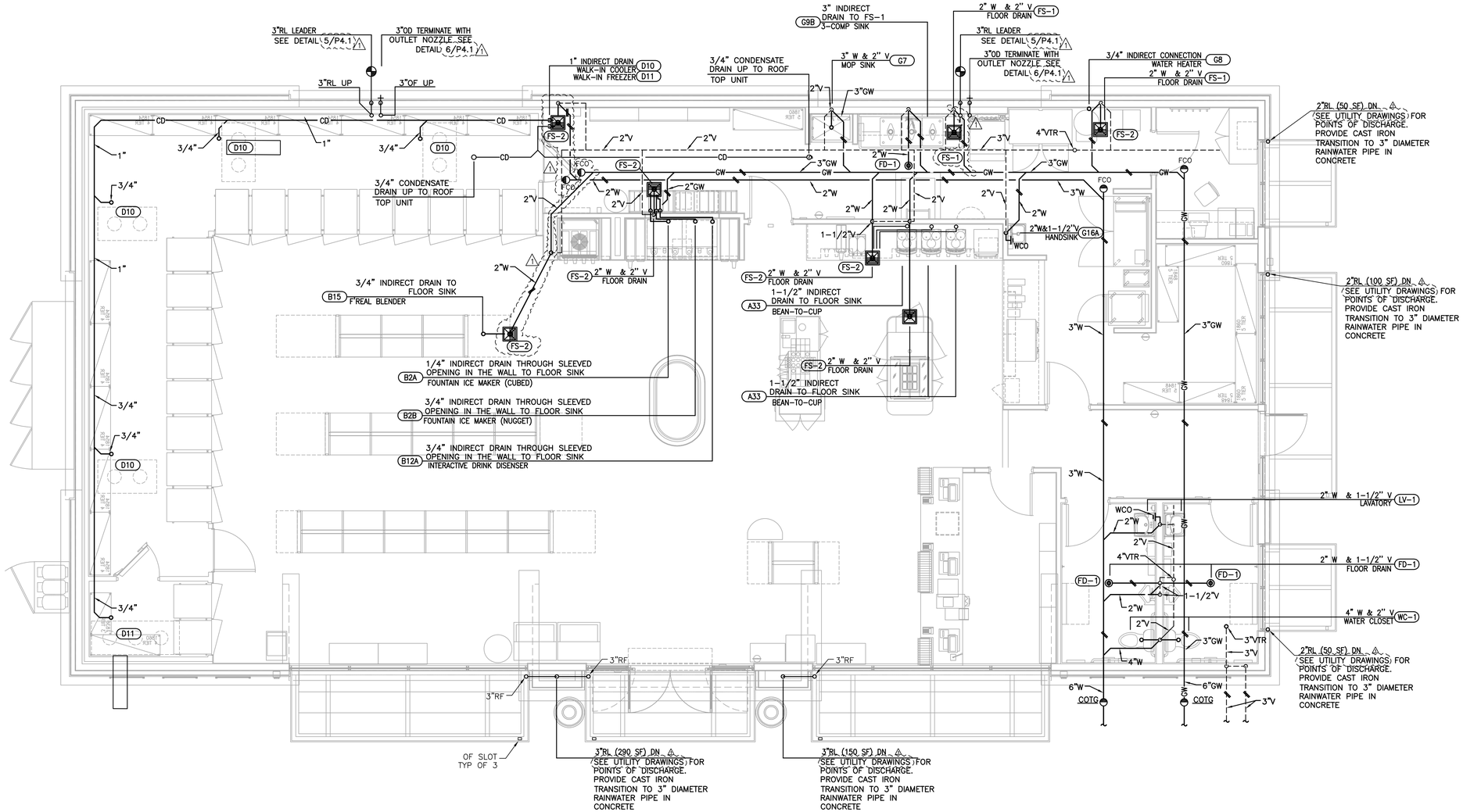
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DRAWN BY:	ALLIANCE PM:
VERSION:	PROJECT NO: 21730

DRAWING TITLE:

PLUMBING ROUGH-IN PLAN

SHEET NO:

P1.0



1 / P1.1 SANITARY DRAINAGE & VENT PLUMBING PLAN

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

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

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Kent, WA 98032
425.251.6222
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SEAL:

ALEXANDER ABOSSEIN — STATE OF WASHINGTON — 21891 — REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

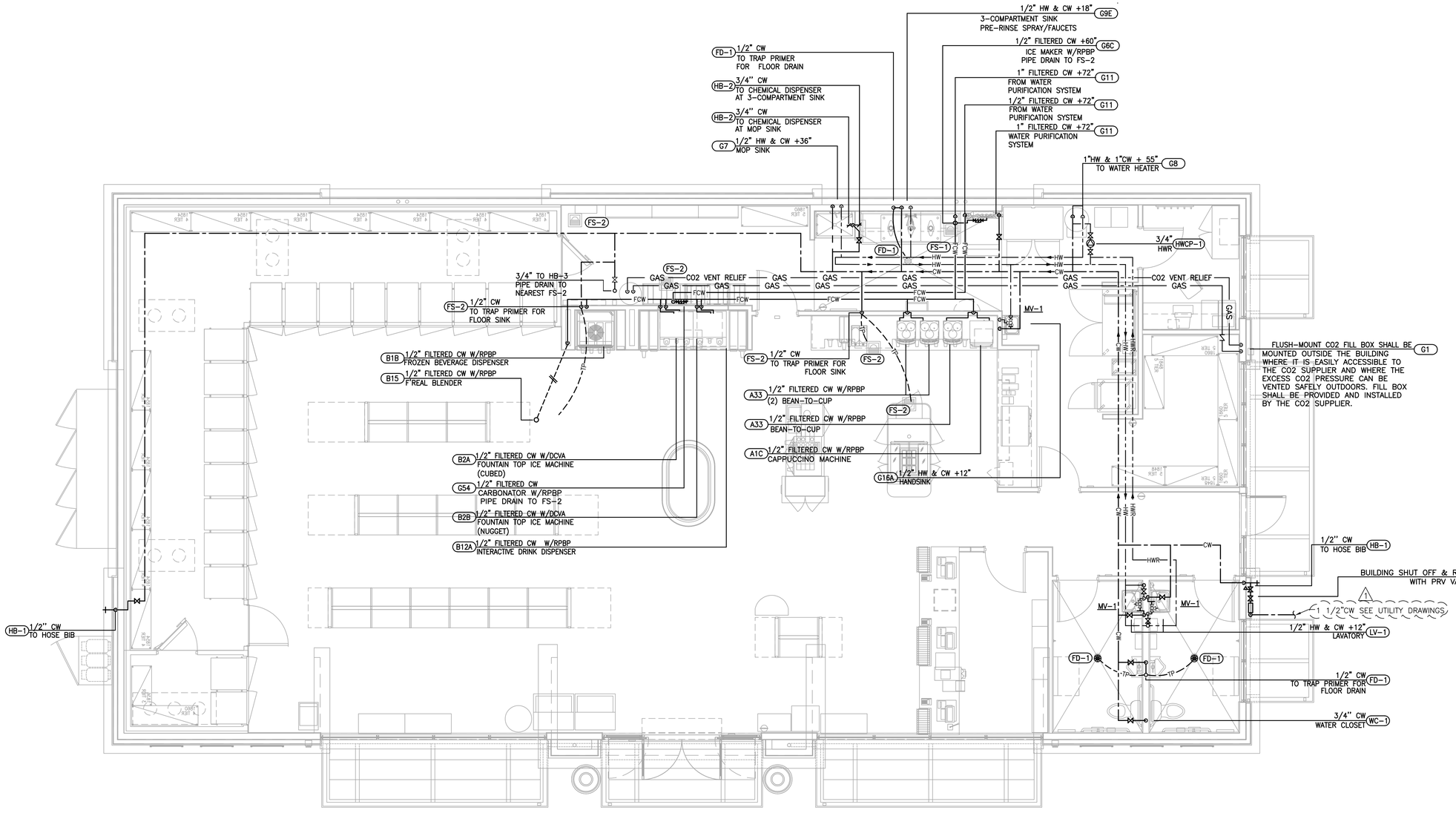
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CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:

SANITARY DRAINAGE & VENT PLUMBING PLAN

SHEET NO:

P1.1



1 P1.2 DOMESTIC WATER PLUMBING FLOOR PLAN

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

CLIENT:

bp

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BP WEST COAST PRODUCTS, LLC

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Consulting Engineers, Inc.

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STATE OF WASHINGTON
21891
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PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI

3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

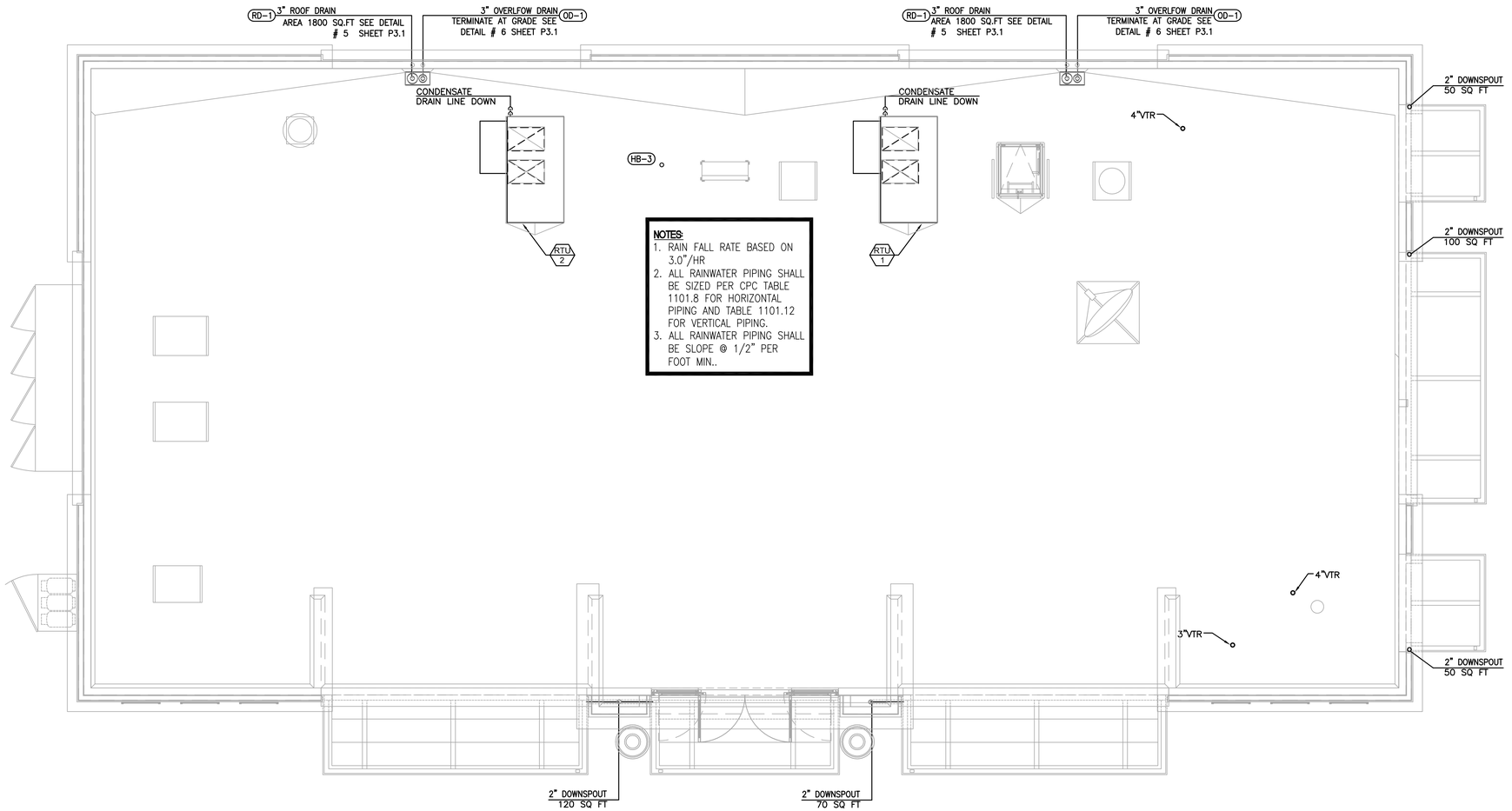
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CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION:	PROJECT NO: 21730

DRAWING TITLE:

DOMESTIC WATER SUPPLY PLUMBING PLAN

SHEET NO:

P1.2



NOTES:

1. RAIN FALL RATE BASED ON 3.0"/HR
2. ALL RAINWATER PIPING SHALL BE SIZED PER CPC TABLE 1101.8 FOR HORIZONTAL PIPING AND TABLE 1101.12 FOR VERTICAL PIPING.
3. ALL RAINWATER PIPING SHALL BE SLOPE @ 1/2" PER FOOT MIN..

1 / P1.3 PLUMBING ROOF PLAN

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

CLIENT:

bp

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SEAL:

ALEXANDER ABOSSEIN
STATE OF WASHINGTON
21891
REGISTERED
PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI

3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

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PUYALLUP, WA 98371

FACILITY #7184

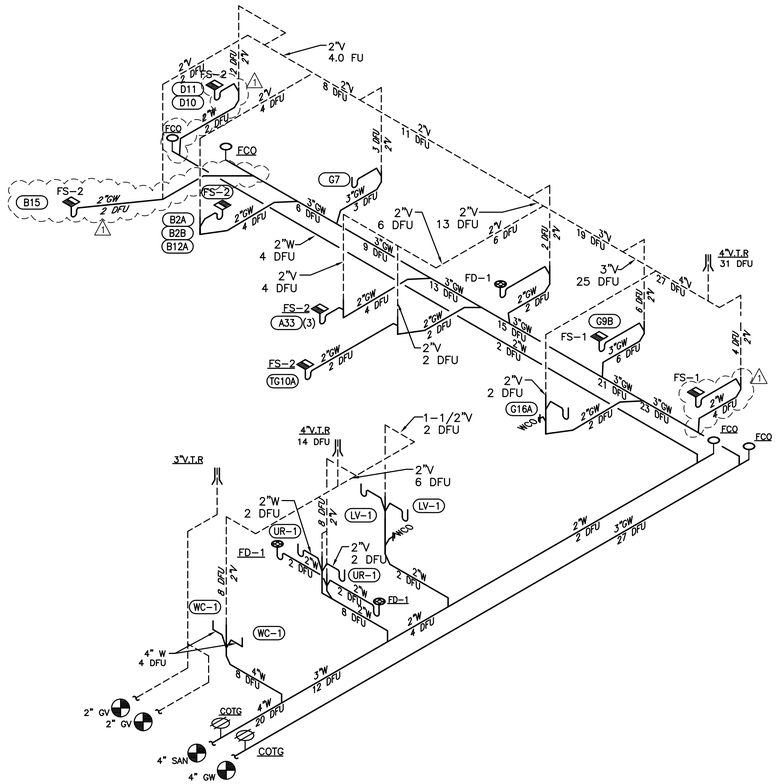
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VERSION: -- --	PROJECT NO: 21730

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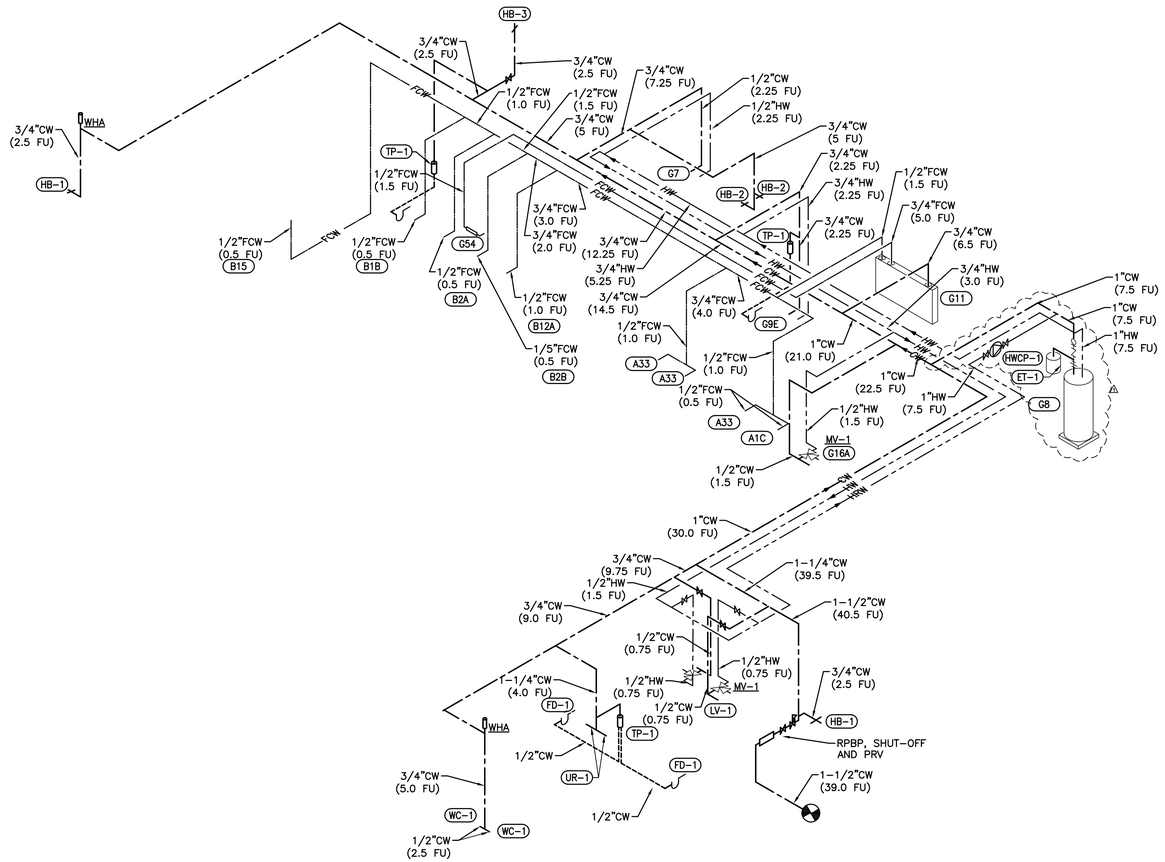
PLUMBING ROOF PLAN

SHEET NO:

P1.3



1 WASTE & VENT RISER DIAGRAM
P2.0 SCALE: NONE



2 DOMESTIC WATER RISER DIAGRAM
P2.0 SCALE: NONE

CLIENT:

bp

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SEAL:

ALEXANDER A. OSSETT
STATE OF WASHINGTON
21899
REGISTERED
PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

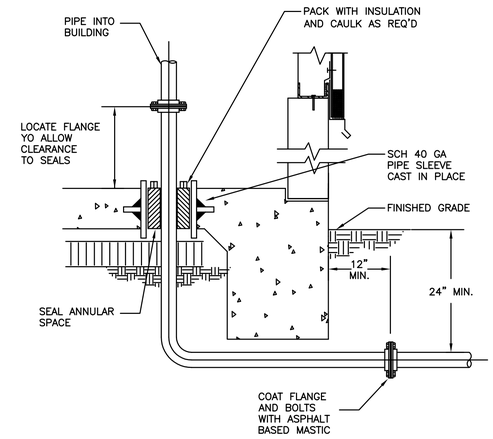
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VERSION: - -	PROJECT NO: 21730

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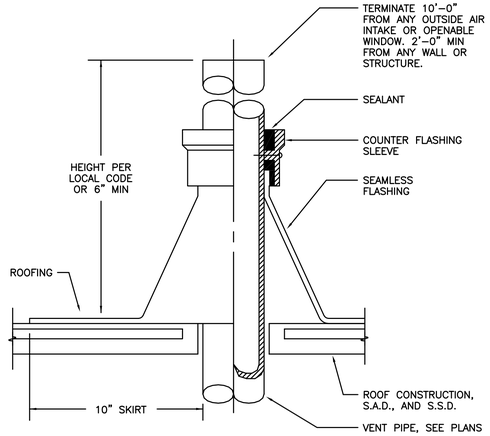
RISER DIAGRAMS

SHEET NO:

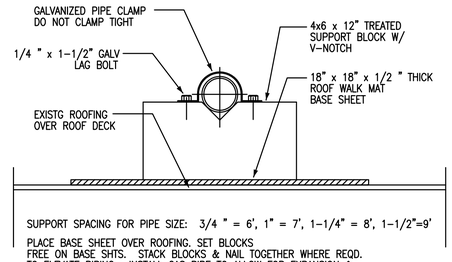
P2.0



PIPE PENETRATION FLOOR DETAIL — N.T.S. — 10



VENT TROUGH ROOF DETAIL — N.T.S. — 7



SUPPORT SPACING FOR PIPE SIZE: 3/4 " = 6', 1" = 7', 1-1/4" = 8', 1-1/2"=9'

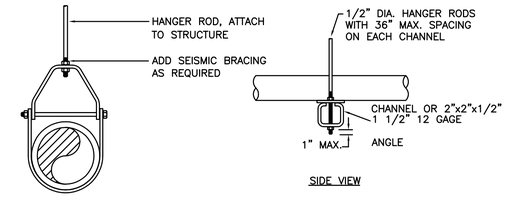
PLACE BASE SHEET OVER ROOFING. SET BLOCKS FREE ON BASE SHTS. STACK BLOCKS & NAIL TOGETHER WHERE REQD. TO ELEVATE PIPING. INSTALL GAS PIPE TO ALLOW FOR EXPANSION & CONTRACTION. PRIMER AND PAINT EXT. PIPE LIGHT GREEN COLOR.

PIPE SUPPORT DETAIL — N.T.S. — 4

TYPICAL PIPE HANGERS

MAXIMUM PIPE/TUBING SUPPORT SPACING, FEET								
NOM. SIZE	THRU 1"	1	11/4	11/2	2	21/2	3	4
PIPE	7 FT	7	7	9	10	11	12	14
TUBING	5 FT	6	7	8	8	9	10	12

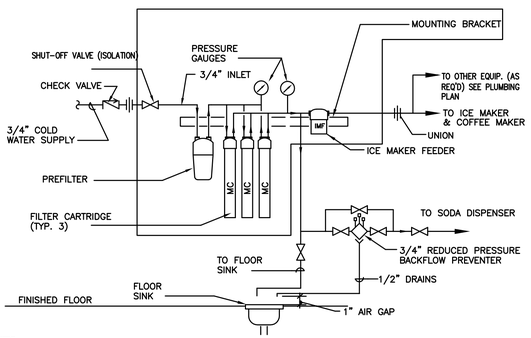
NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.



ADJUSTABLE CLEVIS HANGER TYPE 1 IN SPECIFICATIONS

TRAPEZE HANGER FOR UP TO 1000 LB. UNIFORM LOAD

PIPE HANGER DETAIL #1 — N.T.S. — 1



NOTES:

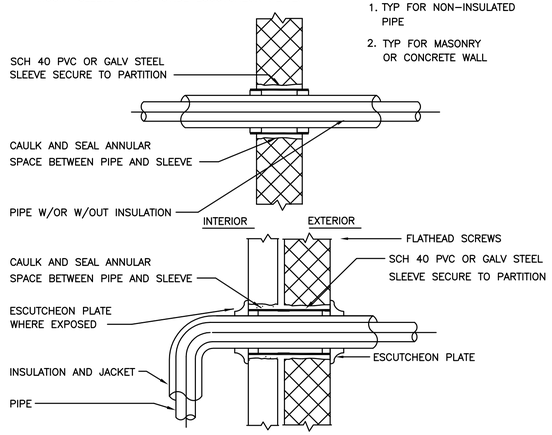
1. THE WATER LINE MATERIAL BETWEEN THE CARBONATOR AND THE RP ASSEMBLY SHALL BE PVC.
2. INSTALL RP ASSEMBLY NO HIGHER THAN 5 FEET OFF FLOOR.
3. ALLOW 12 INCHES MINIMUM OPEN SPACE CLEARANCE DIRECTLY BELOW RP ASSEMBLY.
4. ALLOW 12 INCHES MINIMUM OPEN SPACE CLEARANCE DIRECTLY IN FRONT OF RP ASSEMBLIES TEST COCKS.
5. THE ENTIRE ASSEMBLY SHALL BE INSTALLED IN SALES UTILITY ROOM WHERE SHOWN ON SHEET P03.
6. ALL WATER LINES TO BEVERAGE EQUIPMENT (FOUNTAIN, ICE MAKER, ICEE, COFFEE & BREWER) SHALL BE 100% FILTERED.

WATER FILTRATION SYSTEM — N.T.S. — 11

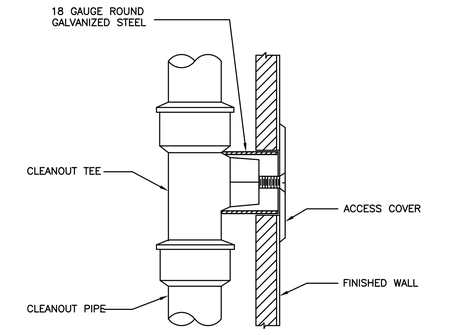
NOTE: WHERE PIPING IS EXPOSED AT FINISHED WALLS, FLUSH MOUNT SLEEVE AND PROVIDE ESCUTCHEON PLATE.

NOTES:

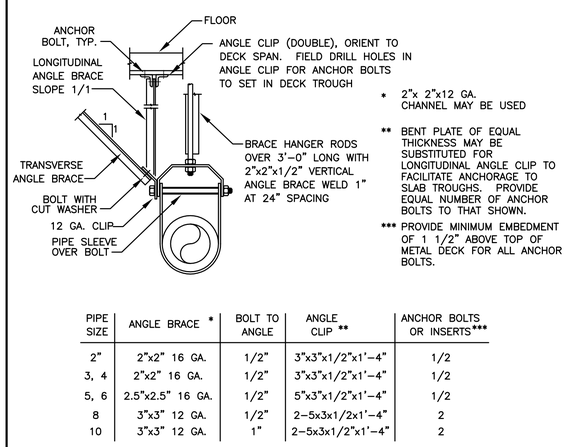
1. TYP FOR NON-INSULATED PIPE
2. TYP FOR MASONRY OR CONCRETE WALL



PIPE PENETRATION DETAIL #1 — N.T.S. — 8



WALL CLEANOUT DETAIL — N.T.S. — 5



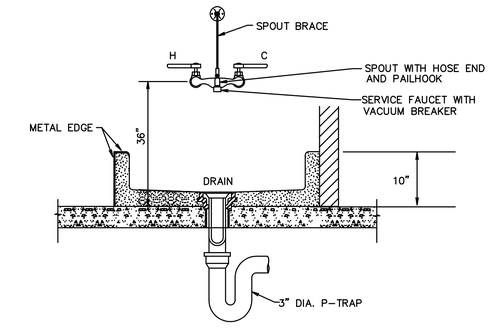
* 2"x 2"x12 GA. CHANNEL MAY BE USED

** BENT PLATE OF EQUAL THICKNESS MAY BE SUBSTITUTED FOR LONGITUDINAL ANGLE CLIP TO FACILITATE ANCHORAGE TO SLAB TROUGHS. PROVIDE EQUAL NUMBER OF ANCHOR BOLTS TO THAT SHOWN.

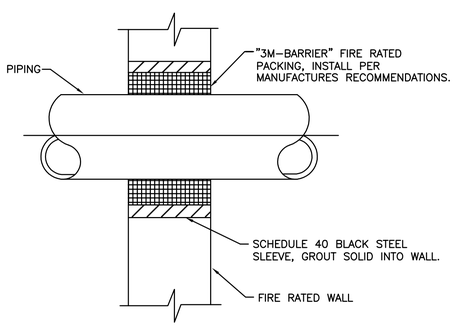
*** PROVIDE MINIMUM EMBEDMENT OF 1 1/2" ABOVE TOP OF METAL DECK FOR ALL ANCHOR BOLTS.

PIPE SIZE	ANGLE BRACE *	BOLT TO ANGLE	ANGLE CLIP **	ANCHOR BOLTS OR INSERTS***
2"	2"x2" 16 GA.	1/2"	3"x3"x1/2"x1'-4"	1/2
3, 4	2"x2" 16 GA.	1/2"	3"x3"x1/2"x1'-4"	1/2
5, 6	2.5"x2.5" 16 GA.	1/2"	5"x3"x1/2"x1'-4"	1/2
8	3"x3" 12 GA.	1/2"	2-5x3x1/2x1'-4"	2
10	3"x3" 12 GA.	1"	2-5x3x1/2"x1'-4"	2

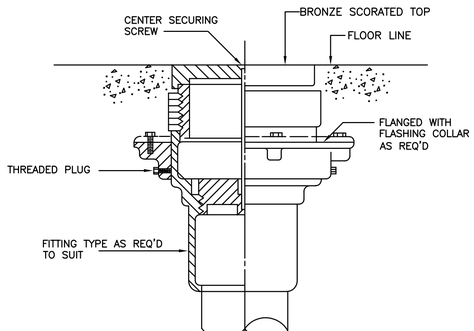
PIPE HANGER DETAIL #2 — N.T.S. — 2



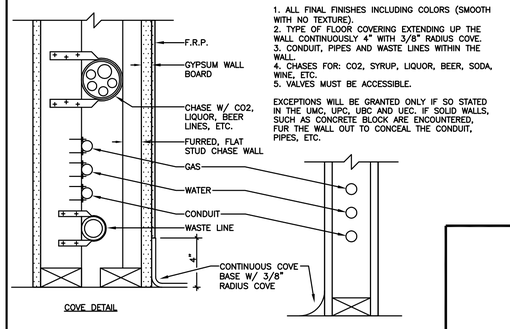
MOP SINK DETAIL — N.T.S. — 12



PIPE PENETRATION DETAIL #2 — N.T.S. — 9



FLOOR CLEANOUT DETAIL — N.T.S. — 6



COVE DETAIL

NOTES:

1. ALL FINAL FINISHES INCLUDING COLORS (SMOOTH WITH NO TEXTURE).
2. TYPE OF FLOOR COVERING EXTENDING UP THE WALL CONTINUOUSLY 4" WITH 3/8" RADIUS COVE.
3. CONDUIT, PIPES AND WASTE LINES WITHIN THE WALL.
4. CHASES FOR: CO2, SYRUP, LIQUOR, BEER, SODA, WINE, ETC.
5. VALVES MUST BE ACCESSIBLE.

EXCEPTIONS WILL BE GRANTED ONLY IF SO STATED IN THE UMC, UPC, UBC AND UEC. IF SOLID WALLS, SUCH AS CONCRETE BLOCK ARE ENCOUNTERED, FUR THE WALL OUT TO CONCEAL THE CONDUIT, PIPES, ETC.

WALL AND BACK BAR PIPING DETAIL — N.T.S. — 3

CLIENT: bp / ARCO — BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
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SEAL:

ALEXANDER ROSSETTI — STATE OF WASHINGTON — 21891 — REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

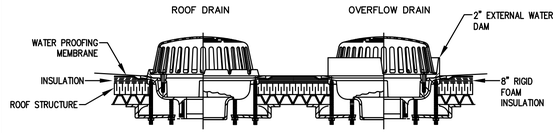
DRAWING TITLE:
PLUMBING DETAILS - I

SHEET NO:
P4.0

NOT USED — N.T.S. 10

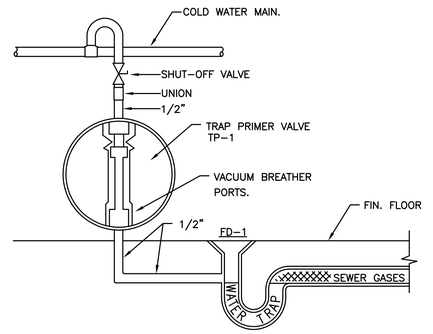
NOT USED — N.T.S. 7

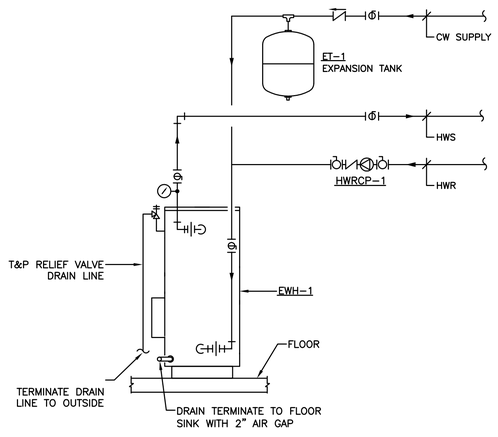
ROOF DRAIN DETAIL #1 — N.T.S. 4



NOTES:
1. PLUMBING CONTRACTOR SHALL COORDINATE WITH STRUCTURAL ENGINEER AND ROOFING CONTRACTOR FOR ROOF DRAIN LOCATION AND INSTALLATION REQUIREMENTS.
2. ROOF DRAIN SHALL BE TOP CONNECT AND SUPPORT FROM NEAREST JOIST AND GIRDER. IF THERE ARE TWO ROOF DRAINS AT THE SAME LOCATION, LOCATE ON ONTO BOTH SIDE OF JOIST OR GIRDER.
3. ROOF DRAIN AND OVERFLOW TO BE APPROVED BY ROOFING CONTRACTOR PRIOR TO PURCHASE.
4. PROVIDE CLAMPING EXTENSION COLLAR TO ACCOMMODATE 8" RIGID FOAM INSULATION.

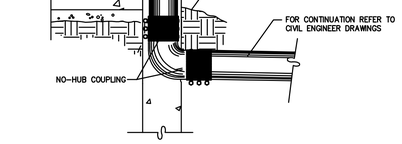
TRAP PRIMER DETAIL — N.T.S. 1



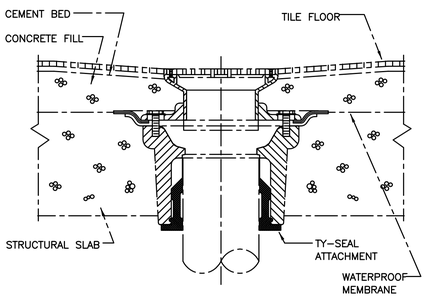


WATER HEATER SCHEMATIC DETAIL — N.T.S. 11

NOT USED — N.T.S. 8

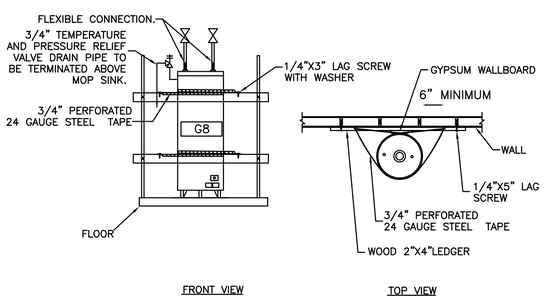


ROOF DRAIN DETAIL #2 — N.T.S. 5

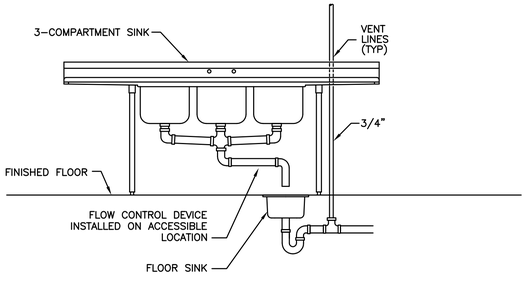


FLOOR DRAIN DETAIL — N.T.S. 2

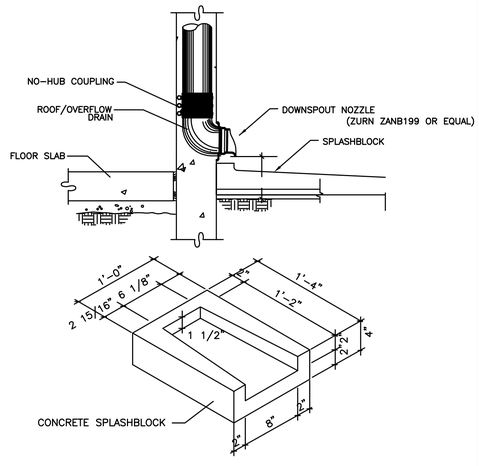
NOTE:
WATER HEATER STRAPPING SHALL BE AT POINTS WITHIN THE UPPER ONE-THIRD (1/3) AND LOWER ONE-THIRD (1/3) OF ITS VERTICAL DIMENSIONS. AT THE LOWER POINT, A MINIMUM DISTANCE OF FOUR (4) INCHES SHALL BE MAINTAINED ABOVE THE CONTROLS WITH THE STRAPPING.



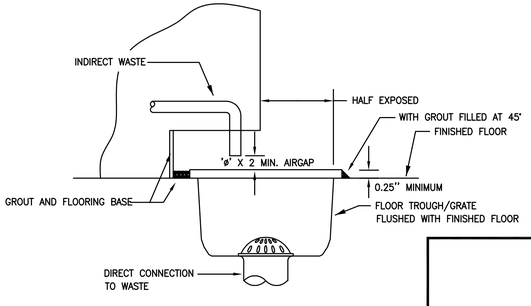
SEISMIC STRAPPING DETAIL — N.T.S. 12



3-COMPARTMENT SINK DETAIL — N.T.S. 9



ROOF OVERFLOW DRAIN DETAIL #3 — N.T.S. 6



FLOOR SINK SHALL BE EASILY AND FULLY ACCESSIBLE FOR CLEANING.
MOUNT FLOOR SINK FLUSH TO FINISHED FLOOR ONLY AT THE CUSTOMER SIDE.
RAISE FLOOR SINK PER DETAIL ABOVE AT THE OPERATION SIDE.

FLOOR SINK DETAIL — N.T.S. 3

CLIENT: bp / ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
1	2/6/24	PERMIT RESUBMITTAL
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SEAL: ALEXANDER ABASSIAN — STATE OF WASHINGTON — 21891 — REGISTERED PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

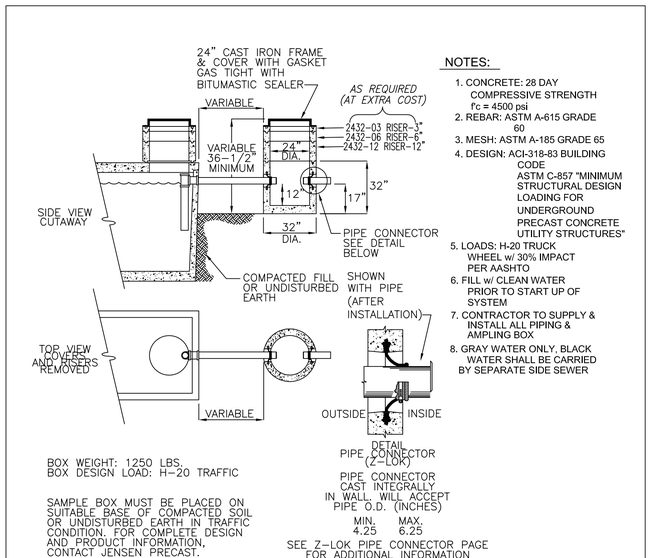
SITE ADDRESS:
1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: -	PROJECT NO: 21730

DRAWING TITLE:
PLUMBING DETAILS - II

SHEET NO:
P4.1



NOTES:

1. CONCRETE: 28 DAY COMPRESSIVE STRENGTH f'c = 4500 psi
2. REBAR: ASTM A-615 GRADE 60
3. MESH: ASTM A-185 GRADE 65
4. DESIGN: ACI-318-83 BUILDING CODE ASTM C-857 "MINIMUM STRUCTURAL DESIGN LOADING FOR UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES"
5. LOADS: H-20 TRUCK WHEEL w/ 30% IMPACT PER AASHTO
6. FILL w/ CLEAN WATER PRIOR TO START UP OF SYSTEM
7. CONTRACTOR TO SUPPLY & INSTALL ALL PIPING & AMPLING BOX
8. GRAY WATER ONLY, BLACK WATER SHALL BE CARRIED BY SEPARATE SIDE SEWER

BOX WEIGHT: 1250 LBS.
BOX DESIGN LOAD: H-20 TRAFFIC

SAMPLE BOX MUST BE PLACED ON SUITABLE BASE OF COMPACTED SOIL OR UNDISTURBED EARTH IN TRAFFIC CONDITION. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN PRECAST.

SAMPLING BOX DETAIL	N.T.S.	2

1

NOTE:

1. REFER TO CIVIL DRAWINGS FOR GREASE INTERCEPTOR DETAIL.

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
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SEAL:

ALEXANDER A. BOSSEN
STATE OF WASHINGTON
21891
REGISTERED
PROFESSIONAL ENGINEER

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI

3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S MERIDIAN
PUYALLUP, WA 98371

FACILITY #7184

DESIGNED BY:	ALLIANCE Z&DM:
CHECKED BY:	BP REPM:
DRAWN BY:	ALLIANCE PM:
VERSION: -	PROJECT NO: 21730

DRAWING TITLE:

PLUMBING DETAILS - III

SHEET NO:

P4.2

SITE PLAN

FOR

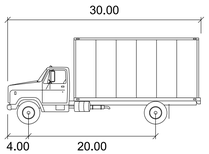
ARCO ampm PUYALLUP

SEC. 33, TWN. 20 N, RGE. 4 E, W.M.

CITY OF PUYALLUP, PIERCE COUNTY

CONSTRUCTION NOTES:

1. PROPOSED CONVENIENCE STORE. CONFIRM ALL DIMENSIONS WITH ARCHITECTURAL PLANS. SEE ARCHITECTURAL PLANS FOR DETAILS.
2. PROPOSED CAR WASH. CONFIRM ALL DIMENSIONS WITH ARCHITECTURAL PLANS. SEE ARCHITECTURAL PLANS FOR DETAILS.
3. PROPOSED LOCATION OF FUEL CANOPY. CONFIRM ALL DIMENSIONS WITH THE ARCHITECTURAL AND FUEL PLANS. SEE ARCHITECTURAL PLANS AND FUEL PLANS FOR DETAILS.
4. PROPOSED 25K AND 22K SPLIT UNDERGROUND STORAGE TANKS. SEE FUEL PLANS FOR DETAILS.
5. PROPOSED TRASH ENCLOSURE AND CONCRETE TRASH ENCLOSURE SLAB. SEE ARCHITECTURAL PLANS FOR DETAILS.
6. PROPOSED ON-SITE ASPHALT PAVEMENT. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
7. PROPOSED ON-SITE CONCRETE PAVEMENT. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
8. PROPOSED BARRIER CURB. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
9. PROPOSED CURB AND GUTTER. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
10. PROPOSED CONCRETE SIDEWALK, WIDTH VARIES. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
11. PROPOSED ACCESSIBLE PARKING STALL AND AISLE. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
12. PROPOSED BOLLARD MOUNTED ACCESSIBLE PARKING STALL SIGNAGE. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
13. PROPOSED PARKING STALL WITH 4" WIDE WHITE REFLECTIVE PAINT STRIPE (TYP.). REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
14. PROPOSED BOLLARD (TYP.). REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
15. PROPOSED LOT LIGHT. SEE DETAIL ON-SITE PHOTOMETRIC PLANS FOR MORE DETAILS. COORDINATE ALL CONDUIT RUNS, WIRING REQUIREMENTS, ETC. WITH ELECTRICAL PLANS. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
16. PROPOSED AIR/WATER UNIT. SEE ARCHITECTURAL PLANS FOR DETAILS.
17. PROPOSED BICYCLE STORAGE. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
18. PROPOSED SEATING BENCH. SEE ARCHITECTURAL PLANS FOR DETAILS.
19. PROPOSED LANDSCAPING. SEE LANDSCAPE PLANS.
20. PROPOSED CONCRETE TANK FUEL SLAB. SEE FUEL PLANS FOR DESIGN.
21. PROPOSED UNDER CANOPY CONCRETE SLAB. SEE ARCHITECTURAL PLANS FOR DETAILS.
22. PROPOSED FUEL DISPENSERS WITH HOOP BOLLARDS (TYP.). SEE FUEL PLANS FOR DETAILS.
23. PAVEMENT MARKINGS - 4" WIDE WHITE PAINTED STRIPES @ 2' O.C/45° ANGLE. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
24. PROPOSED VACUUM UNIT. SEE ARCHITECTURAL PLANS FOR DETAILS.
25. PROPOSED FUTURE VAN ACCESSIBLE AND STANDARD EV CHARGING STATION. FREEWIRE EV CHARGING STATION TO BE INSTALLED, REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
26. PROPOSED TRASH RECEPTACLE (TYP).
27. PROPOSED ACCESSIBLE PATH. REFER TO ACCESSIBLE PATH NOTE THIS SHEET.
28. PROPOSED BLOCK RETAINING WALL. REFER TO STRUCTURAL ENGINEERING PLANS FOR DETAILS. REFER TO RETAINING WALL BUILDING PERMIT PRRWF20231581.
29. PROPOSED ON-SITE MONUMENT SIGN. REFER TO SEPARATE SIGNAGE PLANS.
30. PROPOSED SITE FENCE. REFER TO ARCHITECTURAL PLANS FOR MORE DETAILS.
31. PROPOSED DIRECTIONAL ARROWS. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
32. PROPOSED BUS STOP BENCH PER PIERCE TRANSIT STANDARD BENCH. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423. CONTRACTOR TO GIVE PIERCE TRANSIT TWO (2) WEEKS NOTICE PRIOR TO CONSTRUCTION TO ALLOW PIERCE TRANSIT TO REMOVE THE BUS STOP SIGN AND BENCH. UPON COMPLETION OF CONSTRUCTION CONTRACTOR TO COORDINATE REINSTALLATION OF BUS STOP WITH PIERCE TRANSIT.
33. EXISTING FIRE HYDRANT TO REMAIN.
34. EXISTING ASPHALT TO REMAIN.
35. EXISTING DIRECTIONAL HOSPITAL ROAD SIGN TO BE RE-SET. FINAL LOCATION TO BE APPROVED WITH ROW INSPECTOR. THE PERMIT HOLDER SHALL NOTIFY MULTICARE GOOD SAMARITAN HOSPITAL BY CONTACTING AARON PICHE, MANAGER OF ENGINEERING SERVICES, AT AARON.PICHE@MULTICARE.ORG AND HEIDI ROCK AT HEIDI.ROCK@MULTICARE.ORG WITH THE PROPOSED IMPACTS AND SIGN DISPLACEMENT DURATION AT LEAST 48 HOURS IN ADVANCE OF JOB START. NO EMERGENCY SERVICE VEHICLE TRAVEL ROUTES SHALL BE BLOCKED OR REROUTED.
36. EXISTING CURB TO REMAIN.
37. RESTORE GRAVEL SURFACE.
38. PROPOSED TRANSFORMER.
39. PROPOSED MOUNTABLE CURB ISLAND. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
40. PROPOSED 12"x18" "NO PARKING FIRE LANE" SIGN (TYP. OF 8).
41. PROPOSED "DO NOT ENTER" SIGN.
42. PROPOSED "RIGHT TURN ONLY" SIGN.
43. PROPOSED CONCRETE SWALE. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
44. PROPOSED FIRE HYDRANT. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
45. PROPOSED STORMWATER DETENTION VAULT AND OIL/WATER SEPARATOR. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
46. PROPOSED TRASH ENCLOSURE ROOF DOWNSPOUT. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
47. PROPOSED CAR WASH RECLAIM TANKS AND OIL/WATER SEPARATOR. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
48. PROPOSED UNDER CANOPY OIL/WATER SEPARATOR. SEE SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
49. PROPOSED C-STORE GREASE INTERCEPTOR. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
50. PROPOSED SU-30 SINGLE UNIT TRUCK PATH. REFER TO CROSS SECTION OF VEHICLE ON THIS SHEET.



SU-30

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8

N

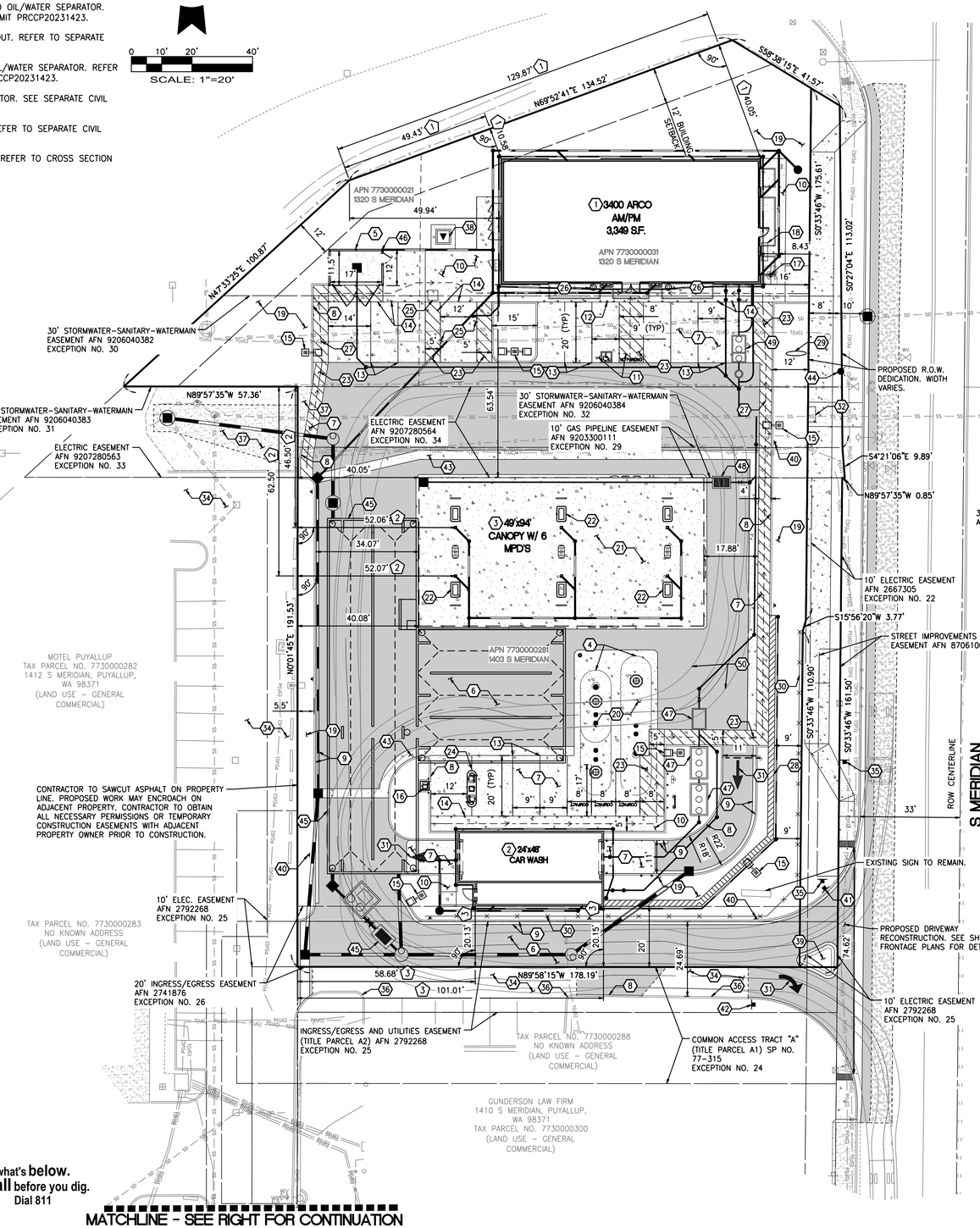
0 10' 20' 40'

SCALE: 1"=20'

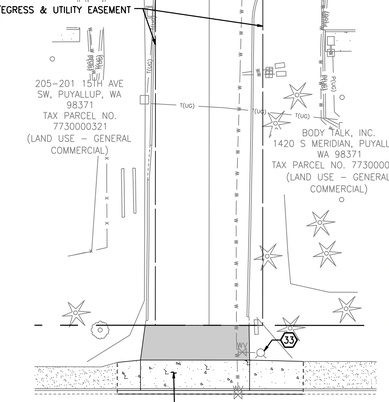
ACCESSIBLE PATH OF TRAVEL NOTE:

WALKWAYS ALONG ACCESSIBLE ROUTES OF TRAVEL SHALL BE CONTINUOUSLY ACCESSIBLE, BE A MINIMUM OF 48" IN WIDTH (PER PAR REQUIREMENTS FOUND IN PROWAG), HAVE A MAXIMUM 2.0% CROSS SLOPE, AND SHALL HAVE RAMPS COMPLYING WITH ACCESSIBILITY STANDARDS (SECTION 405) WHERE NECESSARY TO CHANGE ELEVATION AT A LONGITUDINAL SLOPE EXCEEDING 5% (1:20).

1. MEASUREMENT FROM NORTHWEST PROPERTY CORNER TO FINISH FACE OF BUILDING FOUNDATION (NOT FOOTING). C-STORE IS NOT PARALLEL TO NORTHWEST PROPERTY LINE. DIMENSIONS FROM NORTHWEST PROPERTY CORNER ARE ONLY ACCURATE TO BUILDING CORNERS AS SHOWN.
2. MEASUREMENT FROM NORTHWEST PROPERTY CORNER TO CENTER OF CANOPY COLUMNS. CANOPY IS NOT PARALLEL TO WEST PROPERTY LINE. DIMENSIONS FROM NORTHWEST PROPERTY CORNER ARE ONLY ACCURATE TO CENTER OF CANOPY COLUMNS AS SHOWN.
3. MEASUREMENT FROM SOUTHWEST PROPERTY CORNER TO FINISH FACE OF BUILDING FOUNDATION (NOT FOOTING). CAR WASH IS NOT PARALLEL TO SOUTH PROPERTY LINE. DIMENSIONS FROM SOUTHWEST PROPERTY CORNER ARE ONLY ACCURATE TO CAR WASH AS SHOWN.



MATCHLINE - SEE LEFT FOR CONTINUATION



UTILITY CONFLICT NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POTHOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE AT 811 48 HOURS IN ADVANCE AND THEN POTHOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL NOTIFY BARGHAUSEN CONSULTING ENGINEERS, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

811 Know what's **below.** **Call** before you dig. Dial 811

CLIENT: bp / ARCO — BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

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SEAL:

ALEX WHITE — STATE OF WASHINGTON — 21036777 — REGISTERED PROFESSIONAL ENGINEER

2/9/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S. MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY: JDF	ALLIANCE Z&DM:
CHECKED BY: AW	BP REPM:
DRAWN BY: JDF	ALLIANCE PM:
VERSION: -	PROJECT NO: 21730

DRAWING TITLE: **SITE PLAN**

SHEET NO: **1 OF 1**

P:\21000s\21730\engineering\21730-BUILDING.dwg 2/9/2024 2:08 PM JFLEHARTY

UTILITY PLAN - NORTH

FOR

ARCO ampm PUYALLUP

SEC. 33, TWN. 20 N, RGE. 4 E, W.M.

CITY OF PUYALLUP, PIERCE COUNTY

UTILITY CROSSING TABLE					
(!!!)	TOP UTILITY	TOP EL.	BOTTOM UTILITY	BOTTOM EL.	SEPARATION
1	STORM DRAIN	44.65'	SEWER	41.44'	3.20'
2	SEWER	47.07'	STORM DRAIN	42.80'	4.27'
3	SEWER	46.75'	STORM DRAIN	45.46'	1.30'
4	SEWER	45.94'	STORM DRAIN	42.80'	3.15'
5	SEWER	40.83'	STORM DRAIN	40.65'	0.18'
6	SEWER	45.92'	STORM DRAIN	42.80'	3.12'
7	STORM DRAIN	44.44'	STORM DRAIN	41.10'	3.34'
8	STORM DRAIN	45.04'	STORM DRAIN	42.80'	2.24'

N

0 5' 10' 20'

SCALE: 1"=10'

PIPE MATERIALS AND COVER:

CONTRACTOR SHALL USE PIPE/FITTING MATERIALS IN ACCORDANCE WITH CITY OF PUYALLUP REQUIREMENTS AND MANUFACTURER SPECIFICATIONS.

PVC PIPE SHALL BE SDR-35 WITH 3.0' MIN COVER WHERE SUBJECT TO VEHICULAR LOADING SHALL.

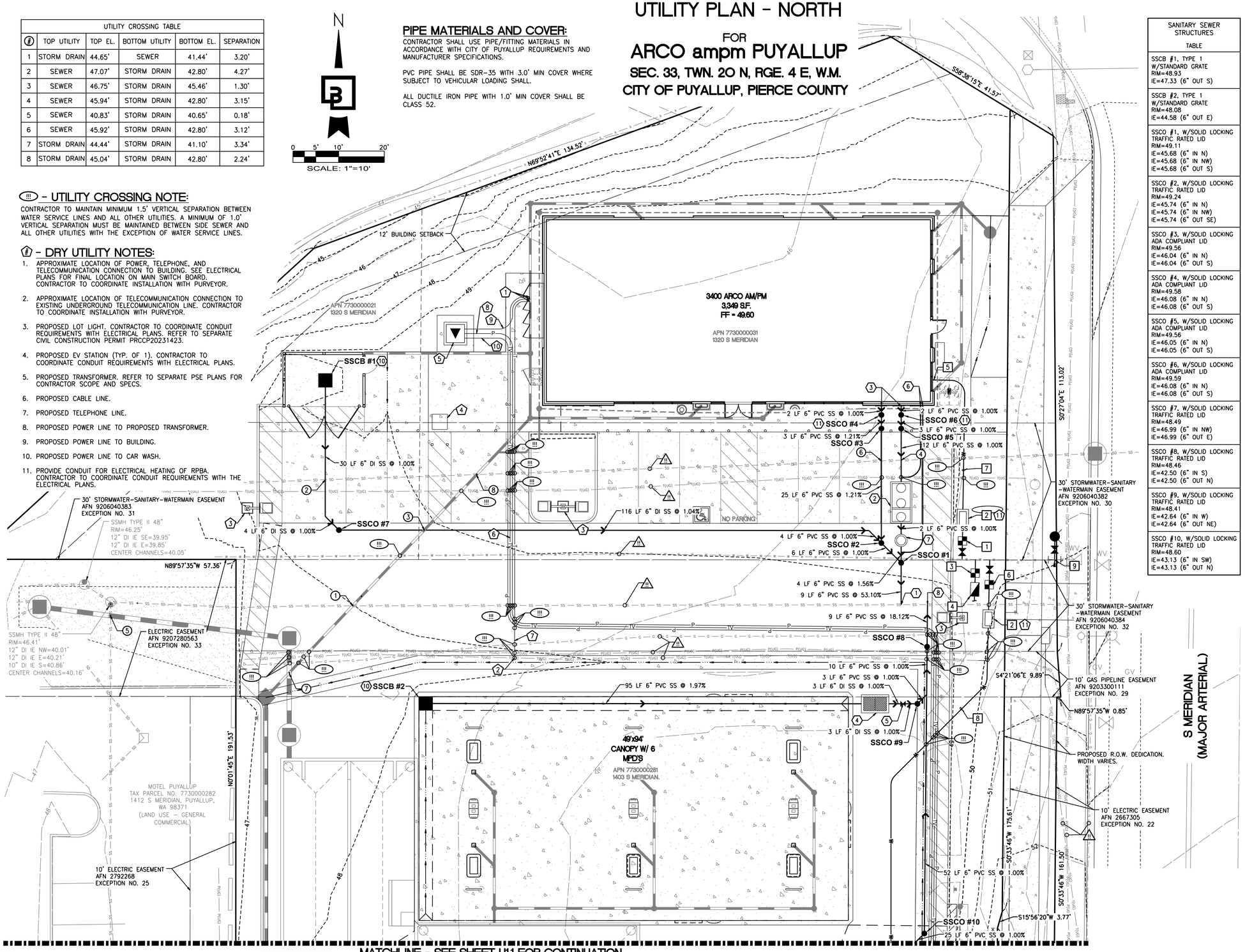
ALL DUCTILE IRON PIPE WITH 1.0' MIN COVER SHALL BE CLASS 52.

(!!!) - UTILITY CROSSING NOTE:

CONTRACTOR TO MAINTAIN MINIMUM 1.5' VERTICAL SEPARATION BETWEEN WATER SERVICE LINES AND ALL OTHER UTILITIES. A MINIMUM OF 1.0' VERTICAL SEPARATION MUST BE MAINTAINED BETWEEN SIDE SEWER AND ALL OTHER UTILITIES WITH THE EXCEPTION OF WATER SERVICE LINES.

(1) - DRY UTILITY NOTES:

1. APPROXIMATE LOCATION OF POWER, TELEPHONE, AND TELECOMMUNICATION CONNECTION TO BUILDING. SEE ELECTRICAL PLANS FOR FINAL LOCATION ON MAIN SWITCH BOARD. CONTRACTOR TO COORDINATE INSTALLATION WITH PURVEYOR.
2. APPROXIMATE LOCATION OF TELECOMMUNICATION CONNECTION TO EXISTING UNDERGROUND TELECOMMUNICATION LINE. CONTRACTOR TO COORDINATE INSTALLATION WITH PURVEYOR.
3. PROPOSED LOT LIGHT. CONTRACTOR TO COORDINATE CONDUIT REQUIREMENTS WITH ELECTRICAL PLANS. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
4. PROPOSED EV STATION (TYP. OF 1). CONTRACTOR TO COORDINATE CONDUIT REQUIREMENTS WITH ELECTRICAL PLANS.
5. PROPOSED TRANSFORMER. REFER TO SEPARATE PSE PLANS FOR CONTRACTOR SCOPE AND SPECS.
6. PROPOSED CABLE LINE.
7. PROPOSED TELEPHONE LINE.
8. PROPOSED POWER LINE TO PROPOSED TRANSFORMER.
9. PROPOSED POWER LINE TO BUILDING.
10. PROPOSED POWER LINE TO CAR WASH.
11. PROVIDE CONDUIT FOR ELECTRICAL HEATING OF RPBA. CONTRACTOR TO COORDINATE CONDUIT REQUIREMENTS WITH THE ELECTRICAL PLANS.



MATCHLINE - SEE SHEET U1.1 FOR CONTINUATION

SANITARY SEWER STRUCTURES TABLE
SSCB #1, TYPE 1 W/STANDARD GRATE RIM=48.93 IE=47.33 (6" OUT S)
SSCB #2, TYPE 1 W/STANDARD GRATE RIM=48.08 IE=44.58 (6" OUT E)
SSCO #1, W/SOLID LOCKING TRAFFIC RATED LID RIM=49.11 IE=45.68 (6" IN N) IE=45.68 (6" IN NW) IE=45.68 (6" OUT S)
SSCO #2, W/SOLID LOCKING TRAFFIC RATED LID RIM=49.24 IE=45.74 (6" IN N) IE=45.74 (6" IN NW) IE=45.74 (6" OUT SE)
SSCO #3, W/SOLID LOCKING ADA COMPLIANT LID RIM=49.56 IE=46.04 (6" IN N) IE=46.04 (6" OUT S)
SSCO #4, W/SOLID LOCKING ADA COMPLIANT LID RIM=49.58 IE=46.08 (6" IN N) IE=46.08 (6" OUT S)
SSCO #5, W/SOLID LOCKING ADA COMPLIANT LID RIM=49.56 IE=46.05 (6" IN N) IE=46.05 (6" OUT S)
SSCO #6, W/SOLID LOCKING ADA COMPLIANT LID RIM=49.59 IE=46.08 (6" IN N) IE=46.08 (6" OUT S)
SSCO #7, W/SOLID LOCKING TRAFFIC RATED LID RIM=48.49 IE=46.99 (6" IN NW) IE=46.99 (6" OUT E)
SSCO #8, W/SOLID LOCKING TRAFFIC RATED LID RIM=48.46 IE=42.50 (6" IN S) IE=42.50 (6" OUT N)
SSCO #9, W/SOLID LOCKING TRAFFIC RATED LID RIM=48.41 IE=42.64 (6" IN W) IE=42.64 (6" OUT NE)
SSCO #10, W/SOLID LOCKING TRAFFIC RATED LID RIM=48.60 IE=43.13 (6" IN SW) IE=43.13 (6" OUT N)

(#) - SEWER NOTES:

1. APPROXIMATE LOCATION OF SEWER CONNECTION TO EXISTING SEWER LINE PER CITY OF PUYALLUP STANDARD DETAIL 04.02.01 - SEWER MAIN TAP. SEE DETAIL 4/U2.2. IE = 40.81
2. PROPOSED 1,000 GALLON GREASE INTERCEPTOR. SEE CITY OF PUYALLUP STANDARD DETAIL 4.06.01. DETAIL 3/U2.3. RIM = ±49.46 IE = 45.93 (6" N) IE = 45.76 (6" S)
3. APPROXIMATE LOCATION OF SEWER CONNECTION TO BUILDING. SEE PLUMBING PLANS FOR CONTINUATION. CONFIRM EXACT LOCATION WITH PLUMBING PLANS. IE = 46.10 (6" S)
4. PROPOSED OIL/WATER SEPARATOR PER OLDCASTLE 660-CPS. SEE DETAIL 1/U2.0. RIM = ±48.60 IE = 42.70 (6" W) IE = 42.70 (6" E)
5. PROPOSED 6" GATE VALVE (MJ) IN TRAFFIC RATED VALVE BOX.
6. 2 - 3" GREASE INTERCEPTOR VENT LINES. REFER TO MEP PLANS FOR MORE DETAIL.
7. PROPOSED SAMPLING BOX. SEE DETAIL 4/U2.3 RIM = ±49.36 IE = 45.74 (6" N) IE = 45.74 (6" S)
8. APPROXIMATE LOCATION OF SEWER CONNECTION TO EXISTING SEWER LINE PER CITY OF PUYALLUP STANDARD DETAIL 04.02.01 - SEWER MAIN TAP. SEE DETAIL 4/U2.2. IE = 40.83
10. SANITARY SEWER CATCH BASIN TYPE I PER CITY OF PUYALLUP STANDARD DETAIL 02.01.03. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
11. SAMPLING TEE PER CITY OF PUYALLUP STANDARD DETAIL 04.03.04. SEE DETAIL 5/U2.3.

(#) - WATER NOTES:

1. PROPOSED DOMESTIC 1-1/2" WATER METER PER CITY OF PUYALLUP STANDARD DETAILS 03.03.02. SEE DETAIL 2/U2.2.
2. PROPOSED 1-1/2" RPBA PER CITY OF PUYALLUP STANDARD DETAIL 03.04.02. SEE DETAIL 3/U2.2. RPBA IS TO BE ELECTRICALLY HEATED FOR FREEZE PROTECTION.
3. PROPOSED IRRIGATION 1" WATER METER PER CITY OF PUYALLUP STANDARD DETAILS 03.03.01-2. SEE DETAIL 1/U2.3.
4. PROPOSED 1" DCVA PER CITY OF PUYALLUP STANDARD DETAIL 03.04.01. SEE DETAIL 2/U2.3.
5. WATER SUPPLY CONNECTION TO PROPOSED BUILDING. SEE PLUMBING PLANS FOR CONTINUATION. CONTRACTOR TO VERIFY EXACT POINT OF CONNECTION WITH PLUMBING PLANS.
6. PROPOSED CAR WASH 1-1/2" WATER METER PER CITY OF PUYALLUP STANDARD DETAIL 03.03.02. SEE DETAIL 2/U2.2.
7. 34 LF - 1-1/2" AMERICAN, TYPE K COPPER, RIGID, SEAMLESS PIPE, CONFORMING TO ASTM B88.
8. 183 LF - 1-1/2" AMERICAN, TYPE K COPPER, RIGID, SEAMLESS PIPE, CONFORMING TO ASTM B88.
9. PROPOSED FIRE HYDRANT ASSEMBLY PER CITY OF PUYALLUP STANDARD DETAIL 03.05.02. SEE DETAIL 2/U2.0. 1 - 8"x6" TEE (FLxMG) 1 - 6" AUXILIARY GATE VALVE (FLxMJ) 5 LF - 6" CL 52 DUCTILE IRON PIPE (MJ) CONCRETE TEE THRUST BLOCK PER CITY OF PUYALLUP STANDARD DETAIL 03.02.01. SEE DETAIL 3/U2.0

UTILITY CONFLICT NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POTHOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE AT 811 48 HOURS IN ADVANCE AND THEN POTHOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL NOTIFY BARGHAUSEN CONSULTING ENGINEERS, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

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UTILITY POTHOLING NOTE:

(!!!) THE CIRCLED LOCATIONS ARE REQUIRED TO BE POTHOLED TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITY AND/OR POTENTIAL CONFLICTS WITH EXISTING UTILITIES. POTHOLING SHALL BE PERFORMED PRIOR TO INSTALLING ANY PROPOSED UTILITIES. CONTRACTOR SHALL NOTIFY BARGHAUSEN CONSULTING ENGINEERS, INC. OF ANY CONFLICTS.

UTILITY PROTECTION NOTE:

APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN ON THESE PLANS. CONTRACTOR TO COORDINATE WITH PURVEYORS AND USE EXTREME CAUTION WHEN EXCAVATING ON-SITE, UNTIL EXISTING GAS AND POWER SERVICE LOCATIONS ARE CONFIRMED. CONTRACTOR TO ORDER INDEPENDENT UTILITY LOCATES (INCLUDING GAS AND POWER) FOR THE FULL SCOPE OF WORK PRIOR TO CONSTRUCTION OR ANY GROUND DISTURBING ACTIVITIES.

CLIENT: bp / ARCO
BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
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SEAL: ALEX WHITE, STATE OF WASHINGTON, 21036777, REGISTERED PROFESSIONAL ENGINEER
2/9/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
1402 S. MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY: JDF	ALLIANCE Z&DM:
CHECKED BY: AW	BP REPM:
DRAWN BY: JDF	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE: UTILITY PLAN - NORTH

SHEET NO: **U1.0**

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UTILITY PLAN - SOUTH

FOR

ARCO ampm PUYALLUP

SEC. 33, TWN. 20 N, RGE. 4 E, W.M.

CITY OF PUYALLUP, PIERCE COUNTY

⚠ UTILITY POTHOLING NOTE:

THE CIRCLED LOCATIONS ARE REQUIRED TO BE POTHOLED TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITY AND/OR POTENTIAL CONFLICTS WITH EXISTING UTILITIES. POTHOLING SHALL BE PERFORMED PRIOR TO INSTALLING ANY PROPOSED UTILITIES. CONTRACTOR SHALL NOTIFY BARGHAUSEN CONSULTING ENGINEERS, INC. OF ANY CONFLICTS.

UTILITY PROTECTION NOTE:

APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN ON THESE PLANS. CONTRACTOR TO COORDINATE WITH PURVEYORS AND USE EXTREME CAUTION WHEN EXCAVATING ON-SITE, UNTIL EXISTING GAS AND POWER SERVICE LOCATIONS ARE CONFIRMED. CONTRACTOR TO ORDER INDEPENDENT UTILITY LOCATES (INCLUDING GAS AND POWER) FOR THE FULL SCOPE OF WORK PRIOR TO CONSTRUCTION OR ANY GROUND DISTURBING ACTIVITIES.

(!!!) - UTILITY CROSSING NOTE:

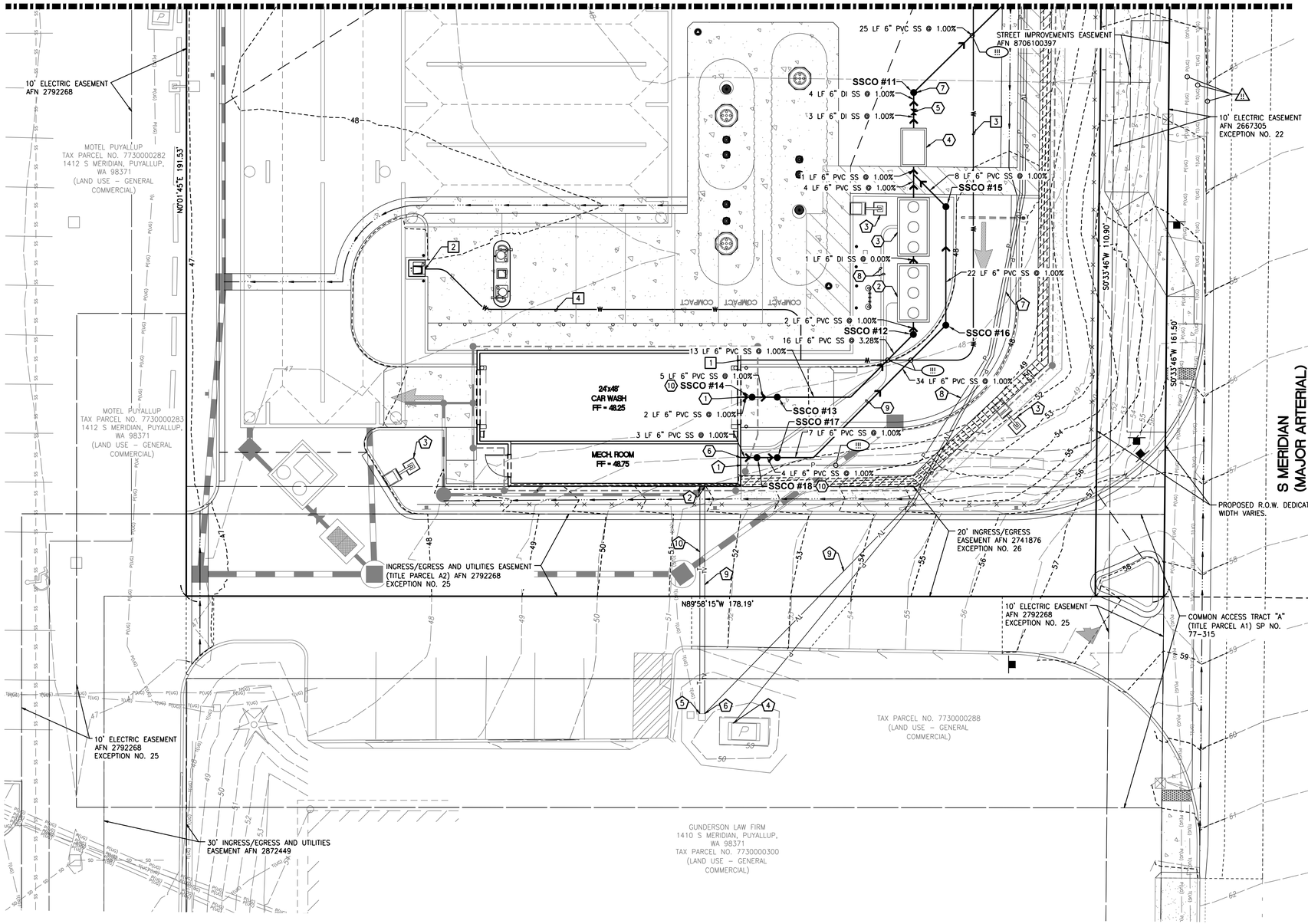
CONTRACTOR TO MAINTAIN MINIMUM 1.5' VERTICAL SEPARATION BETWEEN WATER SERVICE LINES AND ALL OTHER UTILITIES. A MINIMUM OF 1.0' VERTICAL SEPARATION MUST BE MAINTAINED BETWEEN SIDE SEWER AND ALL OTHER UTILITIES WITH THE EXCEPTION OF WATER SERVICE LINES.

N

0 5' 10' 20'

SCALE: 1"=10'

MATCHLINE - SEE SHEET U1.0 FOR CONTINUATION



SANITARY SEWER STRUCTURES TABLE
SSCO #11, W/SOLID LOCKING TRAFFIC RATED LID RIM=48.41 IE=43.39 (6" IN S) IE=43.39 (6" OUT NE)
SSCO #12, W/SOLID LOCKING LID RIM=48.47 IE=44.02 (6" IN SW) IE=44.02 (6" OUT N)
SSCO #13, W/TRAFFIC RATED SOLID LOCKING LID RIM=48.12 IE=44.68 (6" IN W) IE=44.68 (6" OUT E)
SSCO #14, W/SOLID LOCKING TRAFFIC RATED LID RIM=48.21 IE=44.73 (6" IN W) IE=44.73 (6" OUT E)
SSCO #15, W/SOLID LOCKING LID RIM=48.52 IE=44.06 (6" IN S) IE=44.06 (6" OUT NW)
SSCO #16, W/SOLID LOCKING TRAFFIC RATED LID RIM=47.91 IE=44.28 (6" IN SW) IE=44.28 (6" OUT N)
SSCO #17, W/SOLID LOCKING LID RIM=48.76 IE=44.68 (6" IN W) IE=44.68 (6" OUT E)
SSCO #18, W/SOLID LOCKING LID RIM=48.67 IE=44.72 (6" IN W) IE=44.72 (6" OUT E)

(#) - SEWER NOTES:

1. APPROXIMATE LOCATION OF SANITARY SEWER TO CAR WASH. SEE PLUMBING PLANS FOR CONTINUATION. CONFIRM EXACT LOCATION WITH PLUMBING PLANS.
   IE = 44.75 (6" E)
2. RECLAIM TANK #1, SEE DETAIL 1/U2.1 FOR RECLAIM TANK
   OLD CASTLE PRECAST 1,500 GAL RECLAIM TANK
   RIM = 48.04
   INLET IE = 44.00 (6" S)
   OUTLET IE = 44.00 (6" N)
3. RECLAIM TANK #2, SEE DETAIL 2/U2.1 FOR RECLAIM TANK
   OLD CASTLE PRECAST 1,500 GAL RECLAIM TANK
   RIM = 48.11
   INLET IE = 44.00 (6" S)
   OUTLET IE = 44.00 (6" N)
4. OLD CASTLE OIL/WATER 577-SA SEPARATOR
   SEE DETAIL 1/U2.2.
   RIM = 48.25
   INLET IE = 43.96 (6" S)
   OUTLET IE = 43.46 (6" N)
5. PROPOSED 6" GATE VALVE (MJ) (TYP.) IN TRAFFIC RATED VALVE BOX.
6. APPROXIMATE LOCATION OF SANITARY SEWER TO CAR WASH. SEE PLUMBING PLANS FOR CONTINUATION. CONFIRM EXACT LOCATION WITH PLUMBING PLANS.
   IE = 44.75 (6" E)
7. PROVIDE ADAPTOR FOR PIPE MATERIAL CHANGE.
8. 2-2" SCHD-80 PVC RECLAIM LINES FROM RECLAIM TANK #2 BACK TO PROPOSED CAR WASH.
9. 1-1" SCHD-80 PVC OZONE SENSOR CONDUIT LINE FROM RECLAIM TANK #1 BACK TO PROPOSED CAR WASH.
10. SAMPLING TEE PER CITY OF PUYALLUP STANDARD DETAIL 04.03.04. SEE DETAIL 5/U2.3

[#] - WATER NOTES:

1. WATER SUPPLY CONNECTION TO PROPOSED CAR WASH. SEE PLUMBING PLANS FOR CONTINUATION. CONTRACTOR TO VERIFY EXACT POINT OF CONNECTION WITH PLUMBING PLANS.
2. WATER SUPPLY CONNECTION TO PROPOSED AIR/WATER UNIT. SEE PLUMBING PLANS FOR CONTINUATION. CONTRACTOR TO VERIFY EXACT POINT OF CONNECTION WITH PLUMBING PLANS.
3. 183 LF - 1-1/2" AMERICAN, TYPE K COPPER, RIGID, SEAMLESS PIPE, CONFORMING TO ASTM B88.
4. 80 LF - 1/2" AMERICAN, TYPE K COPPER, RIGID, SEAMLESS PIPE, CONFORMING TO ASTM B88.

(#) - DRY UTILITY NOTES:

1. APPROXIMATE LOCATION OF POWER CONNECTION TO CAR WASH. SEE ELECTRICAL PLANS FOR FINAL LOCATION ON MAIN SWITCH BOARD. CONTRACTOR TO COORDINATE INSTALLATION WITH PURVEYOR.
2. APPROXIMATE LOCATION OF TELEPHONE AND CABLE CONNECTION TO CAR WASH. CONTRACTOR TO COORDINATE INSTALLATION WITH PURVEYOR.
3. PROPOSED LOT LIGHT (TYP. OF 6). CONTRACTOR TO COORDINATE CONDUIT REQUIREMENTS WITH ELECTRICAL PLANS. REFER TO SEPARATE CIVIL CONSTRUCTION PERMIT PRCCP20231423.
4. PROPOSED POWER LINE CONNECTION TO EXISTING POWER VAULT. CONTRACTOR TO COORDINATE CONNECTION WITH PURVEYOR.
5. PROPOSED TELEPHONE LINE CONNECTION TO EXISTING TELEPHONE RISER. CONTRACTOR TO COORDINATE CONNECTION WITH PURVEYOR.
6. PROPOSED CABLE LINE CONNECTION TO EXISTING TELEPHONE RISER. CONTRACTOR TO COORDINATE CONNECTION WITH PURVEYOR.
7. PROPOSED POWER LINE TO PROPOSED TRANSFORMER.
8. PROPOSED POWER LINE TO CAR WASH.
9. PROPOSED CABLE LINE.
10. PROPOSED TELEPHONE LINE.

PIPE MATERIALS AND COVER:

CONTRACTOR SHALL USE PIPE/FITTING MATERIALS IN ACCORDANCE WITH CITY OF PUYALLUP REQUIREMENTS AND MANUFACTURER SPECIFICATIONS.

PVC PIPE SHALL BE SDR-35 WITH 3.0' MIN COVER WHERE SUBJECT TO VEHICULAR LOADING SHALL.

ALL DUCTILE IRON PIPE WITH 1.0' MIN COVER SHALL BE CLASS 52.

UTILITY CONFLICT NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POTHOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE AT 811 48 HOURS IN ADVANCE AND THEN POTHOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL NOTIFY BARGHAUSEN CONSULTING ENGINEERS, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

811 Know what's **below.** **Call** before you dig. Dial 811

CLIENT: bp / ARCO — BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

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SEAL: ALEX WHITE, STATE OF WASHINGTON, 21036777, REGISTERED PROFESSIONAL ENGINEER

2/9/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
1402 S. MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY: JDF	ALLIANCE Z&DM:
CHECKED BY: AW	BP REPM:
DRAWN BY: JDF	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE: UTILITY PLAN - SOUTH

SHEET NO: **U1.1**

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UTILITY NOTES AND DETAILS

FOR

ARCO ampm PUYALLUP

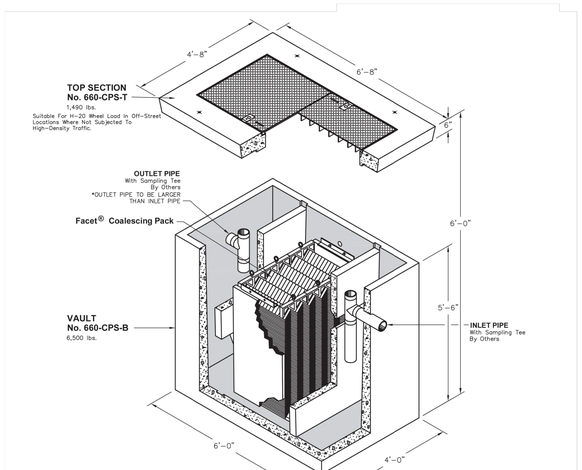
SEC. 33, TWN. 20 N, RGE. 4 E, W.M.

CITY OF PUYALLUP, PIERCE COUNTY

Oldcastle Precast AUBURN — *Delivering Reliability*

660-CPS OIL WATER SEPARATOR

Project Plate Area = 444 Sq/ft
Maximum Process Flow = 415 GPM



FOR DETAILS, SEE REVERSE>>

Items Shown Are Subject To Change Without Notice
Issue Date: April 2016

141

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Mailing Address
PO Box 588
Auburn, WA 98071

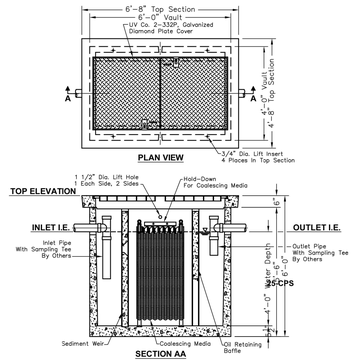
Phone: 800-892-1538
Fax: 253-735-4201
Email: opauburn@oldcastle.com

opauburn.com

Oldcastle Precast — *Delivering Reliability*

660-CPS

Project Plate Area = 444 Sq/ft
Maximum Process Flow = 415 GPM



STRUCTURAL NOTES:
1. Concrete: 28 Day Compressive Strength f'c= 7000 psi
2. Rebar: ASTM A-615 Grade 60
3. Mesh: ASTM A-185 Grade 65
4. Design: ACI-318-05 Building Code
   ASTM C-890 "Minimum Structural Design Loading For Underground Precast Concrete Water and Wastewater Structures"
5. Loads: HS-20 Truck Wheel w/ 30% Impact Per AASHTO

GENERAL NOTES:
1. All Baffles and Weirs To Be Precast Concrete
2. Static Water Depth = 4'-0"
3. Contractor to:
   Supply and Install All Piping & Sampling Tees
   Grout In All Pipes
   Fill With Clean Water Prior To "Start-Up" Of System
   Verify All Blockout Sizes and Locations

INFORMATION NEEDED:
Top Of Separator Elevation: _____
Inlet Pipe Size: _____
Inlet Pipe Elevation: _____
Outlet Pipe Size: _____
Outlet Pipe Elevation: _____

BASIC DESIGN INFORMATION:
INFLUENT CHARACTERISTICS:
Oil Specific Gravity: 0.88
Operating Temperature: 50°
Influent Oil Concentration: 100 ppm
Mean Oil Droplet Size: 130 Microns
0.33 ft/min. Rise Rate
Designed Per Washington State Department Of Ecology

FLOW RATE	EFFLUENT QUALITY	COLLECTED SIZE
		100%
110 GPM	10 ppm	60 Micron

SCALE: 3/8"=1'-0"

141.1

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opauburn.com

1 U2.0 UNDER CANOPY OLDCASTLE 660-CPS OIL/WATER SEPARATOR

SCALE: NTS

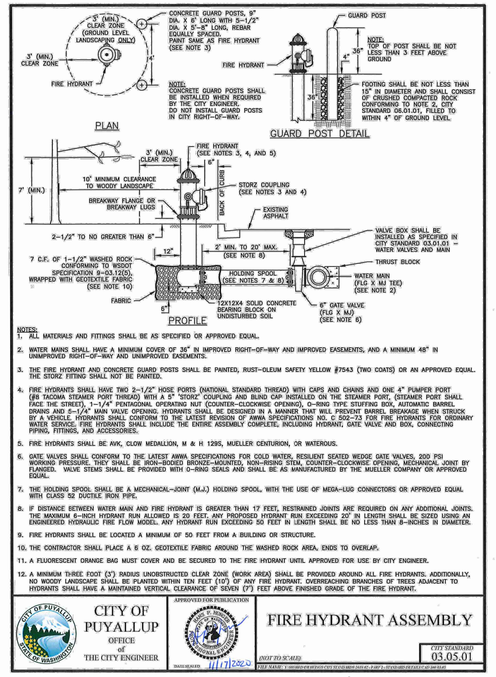
UNDER CANOPY
OIL/WATER SEPARATOR SIZING CALCULATIONS

Project Name: Arco Puyallup — **Date:** 01/12/24
Site Location: 1402 S Meridian — **Our Job No.:** 21730
Municipality: City of Puyallup
Engineer: James Fleharty

Sizing per 2019 DOE Stormwater Management Manual for Western Washington
Section 6.6.2.1, page 6-144

Specific Gravity of Water, S_w =	1.0	
Specific Gravity of Oil, S_o =	0.85	
Absolute Viscosity of Water, μ =	0.015674	
Water Quality Design Flow Rate, Q =	0.01	CFS
k =	4.35	
Adjusted Water Quality Flow Rate(Q * k)	2.61	CFM
Required Effective Plate Area of Surface Media, A_s =	70.65	SF

Use OldCastle Precast Oil Water Separator 660-CPS (Plate Area = 444 SF)



NOTES:
1. ALL MATERIALS AND FITTINGS SHALL BE AS SPECIFIED OR APPROVED EQUAL.
2. WATER MAINS SHALL HAVE A MINIMUM COVER OF 36" IN IMPROVED RIGHT-OF-WAY AND IMPROVED EASEMENTS, AND A MINIMUM 48" IN UNIMPROVED RIGHT-OF-WAY AND UNIMPROVED EASEMENTS.
3. THE FIRE HYDRANT AND CONCRETE GUARD POSTS SHALL BE PAINTED, RUST-OLEUM SAFETY YELLOW #7543 (TWO COATS) OR AN APPROVED EQUAL. THE STORZ FITTING SHALL NOT BE PAINTED.
4. FIRE HYDRANTS SHALL HAVE TWO 2-1/2" HOSE PORTS (NATIONAL STANDARD THREAD) WITH CAPS AND CHAINS AND ONE 4" PUMPER PORT (4R TACOMA STEAMER PORT THREAD) WITH A 5" "STORZ" COUPLING AND BLIND CAP INSTALLED ON THE STEAMER PORT, (STEAMER PORT SHALL FACE THE STREET), 1-1/4" PENTAGONAL OPERATING NUT (COUNTER-CLOCKWISE OPENING), O-RING TYPE STUFFING BOX, AUTOMATIC BARREL DRAINS AND 5-1/4" MAIN VALVE OPENING. HYDRANTS SHALL BE DESIGNED IN A MANNER THAT WILL PREVENT BARREL BREAKAGE WHEN STRUCK BY A VEHICLE. HYDRANTS SHALL CONFORM TO THE LATEST REVISION OF AWWA SPECIFICATIONS NO. C 502-73 FOR FIRE HYDRANTS FOR ORDINARY WATER SERVICE. FIRE HYDRANTS SHALL INCLUDE THE ENTIRE ASSEMBLY COMPLETE, INCLUDING HYDRANT; GATE VALVE AND BOX, CONNECTING PIPING, FITTINGS, AND ACCESSORIES.
5. FIRE HYDRANTS SHALL BE AVK, CLOW MEDALLION, M & H 1290, MUELLER CENTURION, OR WATEROUS.
6. GATE VALVES SHALL CONFORM TO THE LATEST AWWA SPECIFICATIONS FOR COLD WATER, RESILIENT SEATED WEDGE GATE VALVES, 200 PSI WORKING PRESSURE. THEY SHALL BE IRON-BODIED BRONZE-MOUNTED, NON-RISING STEM, COUNTER-CLOCKWISE OPENING, MECHANICAL JOINT BY FLANGED. VALVE STEMS SHALL BE PROVIDED WITH O-RING SEALS AND SHALL BE AS MANUFACTURED BY THE MUELLER COMPANY OR APPROVED EQUAL.
7. THE HOLDING SPOOL SHALL BE A MECHANICAL-JOINT (M.J.) HOLDING SPOOL, WITH THE USE OF MEGA-LUG CONNECTORS OR APPROVED EQUAL WITH CLASS 52 DUCTILE IRON PIPE.
8. IF DISTANCE BETWEEN WATER MAIN AND FIRE HYDRANT IS GREATER THAN 17 FEET, RESTRAINED JOINTS ARE REQUIRED ON ANY ADDITIONAL JOINTS. THE MAXIMUM 6-INCH HYDRANT RUN ALLOWED IS 20 FEET. ANY PROPOSED HYDRANT RUN EXCEEDING 20' IN LENGTH SHALL BE SIZED USING AN ENGINEERED HYDRAULIC FIRE FLOW MODEL. ANY HYDRANT RUN EXCEEDING 50 FEET IN LENGTH SHALL BE NO LESS THAN 8-INCHES IN DIAMETER.
9. FIRE HYDRANTS SHALL BE LOCATED A MINIMUM OF 50 FEET FROM A BUILDING OR STRUCTURE.
10. THE CONTRACTOR SHALL PLACE A 8 OZ. GEOTEXTILE FABRIC AROUND THE WASHED ROCK AREA, ENDS TO OVERLAP.
11. A FLUORESCENT ORANGE BAG MUST COVER AND BE SECURED TO THE FIRE HYDRANT UNTIL APPROVED FOR USE BY CITY ENGINEER.
12. A MINIMUM THREE FOOT (3') RADIUS UNOBSTRUCTED CLEAR ZONE (WORK AREA) SHALL BE PROVIDED AROUND ALL FIRE HYDRANTS. ADDITIONALLY, NO WOODY LANDSCAPE SHALL BE PLANTED WITHIN TEN FEET (10') OF ANY FIRE HYDRANT. OVERREACHING BRANCHES OF TREES ADJACENT TO HYDRANTS SHALL HAVE A MAINTAINED VERTICAL CLEARANCE OF SEVEN (7') FEET ABOVE FINISHED GRADE OF THE FIRE HYDRANT.

CITY OF PUYALLUP
OFFICE of THE CITY ENGINEER

APPROVED FOR PUBLICATION — DATE ISSUED: 11/7/2022

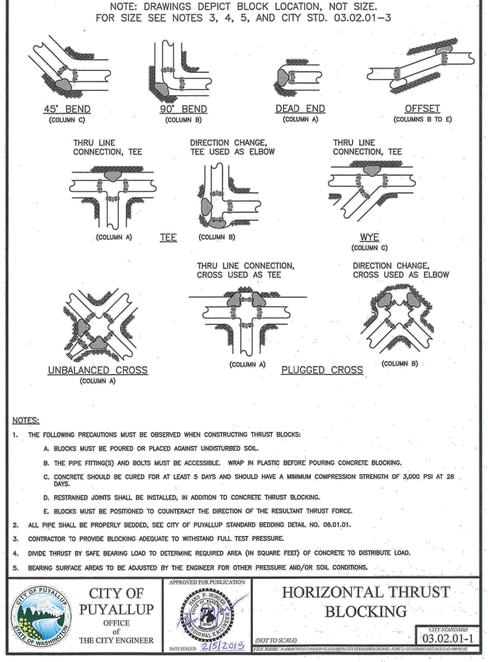
FIRE HYDRANT ASSEMBLY

(NOT TO SCALE) — CITY STANDARD 03.01.01

FILE NAME: P:\21000s\21730\engineering\21730-U.dwg

2 U2.0 FIRE HYDRANT ASSEMBLY

SCALE: NTS



NOTES:
1. THE FOLLOWING PRECAUTIONS MUST BE OBSERVED WHEN CONSTRUCTING THRUST BLOCKS:
   A. BLOCKS MUST BE POURED OR PLACED AGAINST UNDISTURBED SOIL.
   B. THE PIPE FITTING(S) AND BOLTS MUST BE ACCESSIBLE. WRAP IN PLASTIC BEFORE POURING CONCRETE BLOCKING.
   C. CONCRETE SHOULD BE CURED FOR AT LEAST 5 DAYS AND SHOULD HAVE A MINIMUM COMPRESSION STRENGTH OF 3,000 PSI AT 28 DAYS.
   D. RESTRAINED JOINTS SHALL BE INSTALLED, IN ADDITION TO CONCRETE THRUST BLOCKING.
   E. BLOCKS MUST BE POSITIONED TO COUNTERACT THE DIRECTION OF THE RESULTANT THRUST FORCE.
2. ALL PIPE SHALL BE PROPERLY BEDDED, SEE CITY OF PUYALLUP STANDARD BEDDING DETAIL NO. 05.01.01.
3. CONTRACTOR TO PROVIDE BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE.
4. DIVIDE THRUST BY SAFE BEARING LOAD TO DETERMINE REQUIRED AREA (IN SQUARE FEET) OF CONCRETE TO DISTRIBUTE LOAD.
5. BEARING SURFACE AREAS TO BE ADJUSTED BY THE ENGINEER FOR OTHER PRESSURE AND/OR SOIL CONDITIONS.

CITY OF PUYALLUP
OFFICE of THE CITY ENGINEER

APPROVED FOR PUBLICATION — DATE ISSUED: 2/9/2015

HORIZONTAL THRUST BLOCKING

(NOT TO SCALE) — CITY STANDARD 03.02.01-1

FILE NAME: P:\21000s\21730\engineering\21730-U.dwg

3 U2.0 THRUST BLOCKING

SCALE: NTS

UTILITY CONFLICT NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POTHOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE AT 811 48 HOURS IN ADVANCE AND THEN POTHOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL NOTIFY BARGHAUSEN CONSULTING ENGINEERS, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

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CLIENT: bp / ARCO — BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
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SEAL: ALEX WHITE — STATE OF WASHINGTON — 21036777 — REGISTERED PROFESSIONAL ENGINEER

2/9/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
1402 S. MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY: JDF	ALLIANCE Z&DM:
CHECKED BY: AW	BP REPM:
DRAWN BY: JDF	ALLIANCE PM:
VERSION: -	PROJECT NO: 21730

DRAWING TITLE: UTILITY NOTES AND DETAILS

SHEET NO: **U2.0**

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UTILITY DETAILS

FOR

ARCO ampm PUYALLUP

SEC. 33, TWN. 20 N, RGE. 4 E, W.M.

CITY OF PUYALLUP, PIERCE COUNTY

CAR WASH RECLAIM SYSTEM NOTE:

THE CAR WASH PROPOSES IMPLEMENTATION OF A RECLAIM SYSTEM TO FACILITATE RECYCLING EFFORTS OF DISCHARGE RINSE WATER FROM CAR WASH OPERATIONS. DISCHARGE WOULD BE ROUTED THROUGH TWO 1500 GAL RECLAIM TANKS, ROUTING DRAINAGE THROUGH A SYSTEM OF BAFFLE SECTIONS, WHICH ALLOW DRAINAGE TO COLLECT PRIOR BEING CONVEYED TO THE NEXT BAFFLE AREA. THIS PROCESS ALLOWS DISCHARGE TO SEPARATE CONTRIBUTING DEBRIS AND SOLID PARTICLES TO SETTLE TO THE BOTTOM OF THE TANK, AND OILS FLOAT TO THE TOP WHERE THEY ARE TRAPPED WITHIN THE SYSTEM. THE FINAL BAFFLE SECTION CONTAINS TWO-2" SUCTION LINES WHICH PUMP TREATED WATER BACK TO THE RECLAIM SYSTEM FOR REUSE. EXCESS DISCHARGE WILL BE RELEASED FROM THE SYSTEM TO THE PUBLIC SEWER. SETTLED SOLIDS AND FLOATING OILS ARE PERIODICALLY REMOVED (TYPICALLY 3-6 MONTHS) FROM THE SYSTEM VIA MANUAL PUMPING AND MAINTENANCE EFFORTS

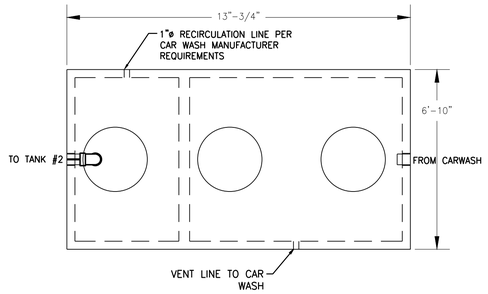
CAR WASH RECLAIM SIZING:

PER MANUFACTURES RECOMMENDATIONS:

TYPICAL IN-BAY AUTOMATICS:
PW100-PW200 (30-60 GPM) RECLAIM SERIES
MINIMUM STORAGE REQUIREMENTS
(2) 1,500 GALLON TANKS = 3,000 GALLONS MINIMUM

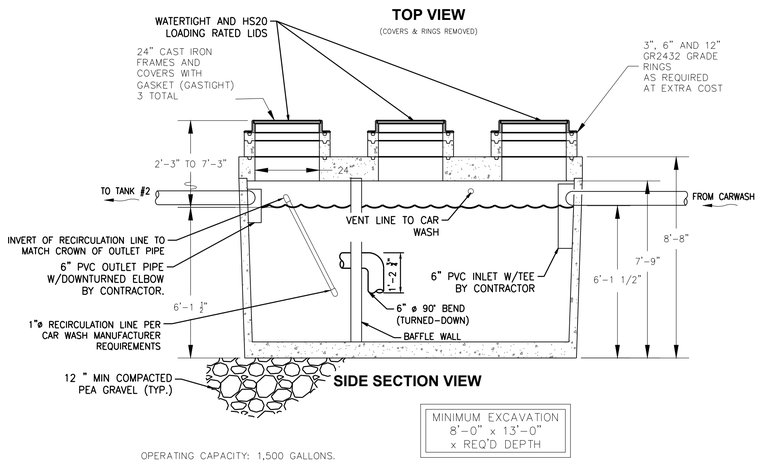
SPECIFICATIONS:

1. CONCRETE: DESIGN STRENGTH OF 5500 PSI AT 28 DAYS.
2. STEEL REINFORCEMENT: ASTM A-615 GRADE 60.
3. LOADING: DESIGNED FOR HS-20 LOADING.
4. C.I. CASTINGS: ASTM A-48 CLASS 30/35.



TOP VIEW

(COVERS & RINGS REMOVED)



SIDE SECTION VIEW

MINIMUM EXCAVATION
8'-0" x 13'-0"
x REQ'D DEPTH

OPERATING CAPACITY: 1,500 GALLONS.

DESIGN LOAD: H-20 TRAFFIC WITH DRY SOIL CONDITIONS (WATER LEVEL BELOW TANK) AND 1'-6' EARTH COVER.

SUITABLE SUB-BASE BEDDED WITH GRANULAR MATERIAL SHALL BE PREPARED TO HANDLE ANTICIPATED LOADS.

FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT OLDCASTLE PRECAST.

MODIFIED OLDCASTLE PRECAST 1500 GALLON

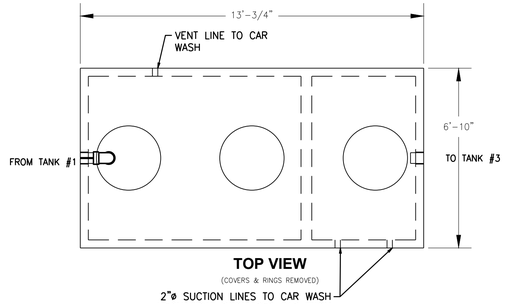
NOT TO SCALE
MODEL NO. GT-1500

1 U2.1 RECLAIM TANK #1

SCALE: NTS

SPECIFICATIONS:

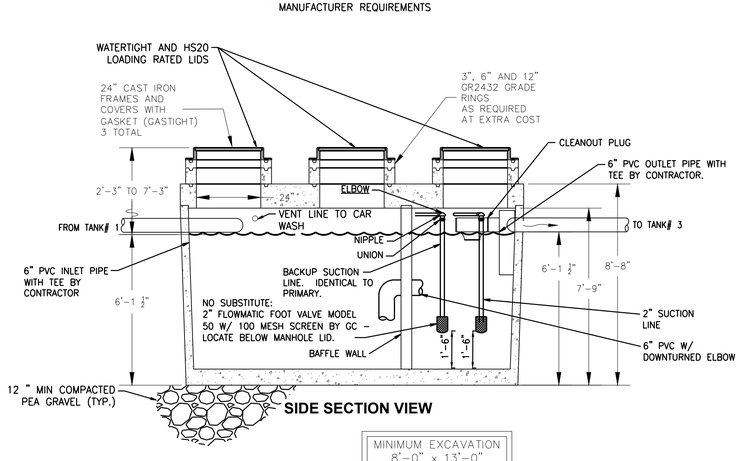
1. CONCRETE: DESIGN STRENGTH OF 5500 PSI AT 28 DAYS.
2. STEEL REINFORCEMENT: ASTM A-615 GRADE 60.
3. LOADING: DESIGNED FOR HS-20 LOADING.
4. C.I. CASTINGS: ASTM A-48 CLASS 30/35.



TOP VIEW

(COVERS & RINGS REMOVED)

2"ø SUCTION LINES TO CAR WASH MECHANICAL ROOM PER CAR WASH MANUFACTURER REQUIREMENTS



SIDE SECTION VIEW

MINIMUM EXCAVATION
8'-0" x 13'-0"
x REQ'D DEPTH

OPERATING CAPACITY: 1,500 GALLONS.

DESIGN LOAD: H-20 TRAFFIC WITH DRY SOIL CONDITIONS (WATER LEVEL BELOW TANK) AND 1'-6' EARTH COVER.

SUITABLE SUB-BASE BEDDED WITH GRANULAR MATERIAL SHALL BE PREPARED TO HANDLE ANTICIPATED LOADS.

FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT OLDCASTLE PRECAST.

MODIFIED OLDCASTLE PRECAST 1500 GALLON

NOT TO SCALE
MODEL NO. GT-1500

2 U2.1 RECLAIM TANK #2

SCALE: NTS

UTILITY CONFLICT NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POTHOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE AT 811 48 HOURS IN ADVANCE AND THEN POTHOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL NOTIFY BARGHAUSEN CONSULTING ENGINEERS, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

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CLIENT:

bp

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BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

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SEAL:

ALEX WHITE — STATE OF WASHINGTON — 21036777 — REGISTERED PROFESSIONAL ENGINEER

2/9/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S. MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY: JDF	ALLIANCE Z&DM:
CHECKED BY: AW	BP REPM:
DRAWN BY: JDF	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
UTILITY DETAILS

SHEET NO:
U2.1

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UTILITY DETAILS

FOR

ARCO ampm PUYALLUP

SEC. 33, TWN. 20 N, RGE. 4 E, W.M.

CITY OF PUYALLUP, PIERCE COUNTY

OIL WATER SEPARATOR SIZING CALCULATIONS

THE FOLLOWING ARE CALCUATIONS DEMONSTRATING ADEQUATE SIZE OF THE OIL/WATER SEPARATORS FOR THE CAR WASH.

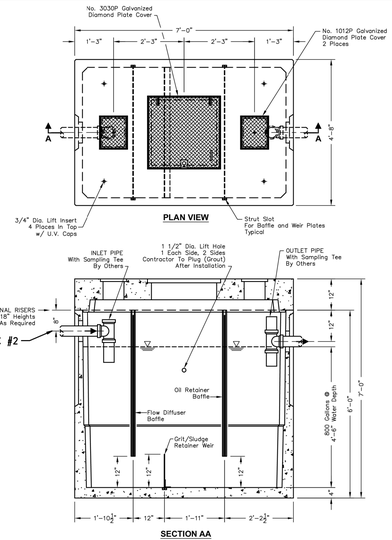
CAR WASH OIL/WATER SEPARATOR
GALLONS OF FRESH WATER USED PER CAR = 18 GALLONS
TOTAL CARS WASHED IN 30 MINUTES = 5
TOTAL GALLONS OF FRESH WATER USED PER 30 MINUTES = 90 GALLONS

PER TABLE 1014.3.6 OF THE UNIFORM PLUMBING CODE GREASE INTERCEPTOR VOLUME SHALL BE EQUAL TO THE KNOWN FLOW RATE MULTIPLIED BY 30 MINUTES.

VOLUME PROVIDED BY 577-SA SEPARATOR = 800 GALLONS.

Oldcastle Precast® *Delivering Reliability*

577-SA



SCALE: 1/2"=1'-0"

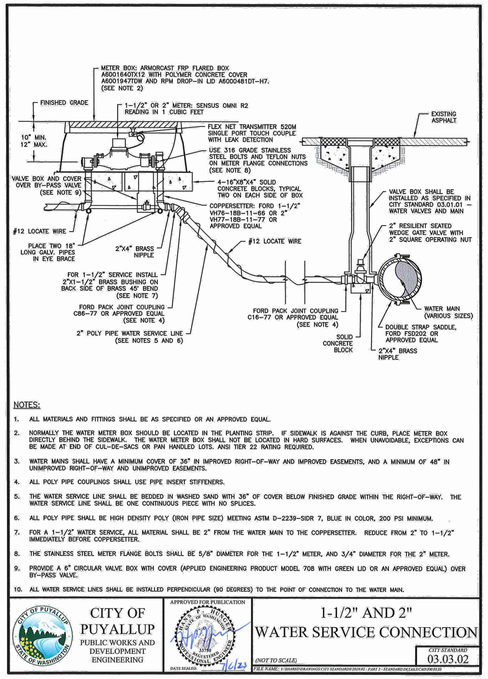
135.1 © 1995-2016 Oldcastle Precast, Inc.

opauburn.com

OIL/WATER SEPARATOR TANK #3
MODIFIED OLDCASTLE PRECAST 800 GALLON

MODEL NO. 577-SA-800
NOT TO SCALE

1 U2.2 **RECLAIM TANK #3**
SCALE: NTS



NOTES:

1. ALL MATERIALS AND FITTINGS SHALL BE AS SPECIFIED OR AN APPROVED EQUAL.
2. NORMALLY THE WATER METER BOX SHOULD BE LOCATED IN THE PLANTING STRIP. IF SIDEWALK IS AGAINST THE CURB, PLACE METER BOX DIRECTLY BEHIND THE SIDEWALK. THE WATER METER BOX SHALL NOT BE LOCATED IN HARD SURFACES. WHEN UNAVOIDABLE, EXCEPTIONS CAN BE MADE AT END OF CUL-DE-SACS OR PAN HANDLED LOTS. ANSI TIER 22 RATING REQUIRED.
3. WATER MAINS SHALL HAVE A MINIMUM COVER OF 36" IN IMPROVED RIGHT-OF-WAY AND IMPROVED EASEMENTS, AND A MINIMUM OF 48" IN UNIMPROVED RIGHT-OF-WAY AND UNIMPROVED EASEMENTS.
4. ALL POLY PIPE COUPLINGS SHALL USE PIPE INSERT STIFFENERS.
5. THE WATER SERVICE LINE SHALL BE BEDDED IN WASHED SAND WITH 36" OF COVER BELOW FINISHED GRADE WITHIN THE RIGHT-OF-WAY. THE WATER SERVICE LINE SHALL BE ONE CONTINUOUS PIECE WITH NO SPLICES.
6. ALL POLY PIPE SHALL BE HIGH DENSITY POLY (IRON PIPE SIZE) MEETING ASTM D-2239-SIDR 7, BLUE IN COLOR, 200 PSI MINIMUM.
7. FOR A 1-1/2" WATER SERVICE, ALL MATERIAL SHALL BE 2" FROM THE WATER MAIN TO THE COPPERSETTER. REDUCE FROM 2" TO 1-1/2" IMMEDIATELY BEFORE COPPERSETTER.
8. THE STAINLESS STEEL METER FLANGE BOLTS SHALL BE 5/8" DIAMETER FOR THE 1-1/2" METER, AND 3/4" DIAMETER FOR THE 2" METER.
9. PROVIDE A 6" CIRCULAR VALVE BOX WITH COVER (APPLIED ENGINEERING PRODUCT MODEL 708 WITH GREEN LID OR AN APPROVED EQUAL) OVER BY-PASS VALVE.
10. ALL WATER SERVICE LINES SHALL BE INSTALLED PERPENDICULAR (90 DEGREES) TO THE POINT OF CONNECTION TO THE WATER MAIN.

CITY OF PUYALLUP
PUBLIC WORKS AND DEVELOPMENT ENGINEERING

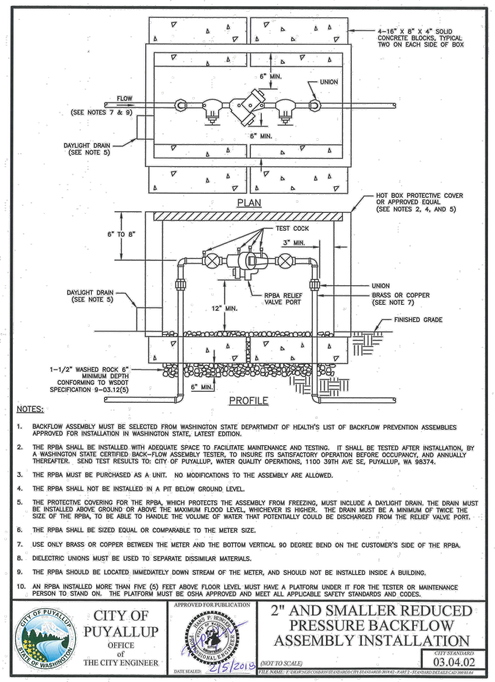
APPROVED FOR PUBLICATION — DATE ISSUED: 7/6/22

1-1/2" AND 2" WATER SERVICE CONNECTION

(NOT TO SCALE) CITY STANDARD 03.03.02

FILE NAME: I:\SHARED\PARAMETER\CITY STANDARDS\2019\PART 3 - STANDARDS\DETAILS\DET-SEWER.DGN

2 U2.2 **CITY OF PUYALLUP 1-1/2" AND 2" WATER SERVICE CONNECTION**
SCALE: NTS



NOTES:

1. BACKFLOW ASSEMBLY MUST BE SELECTED FROM WASHINGTON STATE DEPARTMENT OF HEALTH'S LIST OF BACKFLOW PREVENTION ASSEMBLIES APPROVED FOR INSTALLATION IN WASHINGTON STATE, LATEST EDITION.
2. THE RPBA SHALL BE INSTALLED WITH ADEQUATE SPACE TO FACILITATE MAINTENANCE AND TESTING. IT SHALL BE TESTED AFTER INSTALLATION, BY A WASHINGTON STATE CERTIFIED BACK-FLOW ASSEMBLY TESTER, TO INSURE ITS SATISFACTORY OPERATION BEFORE OCCUPANCY, AND ANNUALLY THEREAFTER. SEND TEST RESULTS TO: CITY OF PUYALLUP, WATER QUALITY OPERATIONS, 1100 39TH AVE SE, PUYALLUP, WA 98374.
3. THE RPBA MUST BE PURCHASED AS A UNIT. NO MODIFICATIONS TO THE ASSEMBLY ARE ALLOWED.
4. THE RPBA SHALL NOT BE INSTALLED IN A PIT BELOW GROUND LEVEL.
5. THE PROTECTIVE COVERING FOR THE RPBA, WHICH PROTECTS THE ASSEMBLY FROM FREEZING, MUST INCLUDE A DAYLIGHT DRAIN. THE DRAIN MUST BE INSTALLED ABOVE GROUND OR ABOVE THE MAXIMUM FLOOD LEVEL, WHICHEVER IS HIGHER. THE DRAIN MUST BE A MINIMUM OF TWICE THE SIZE OF THE RPBA, TO BE ABLE TO HANDLE THE VOLUME OF WATER THAT POTENTIALLY COULD BE DISCHARGED FROM THE RELIEF VALVE PORT.
6. THE RPBA SHALL BE SIZED EQUAL OR COMPARABLE TO THE METER SIZE.
7. USE ONLY BRASS OR COPPER BETWEEN THE METER AND THE BOTTOM VERTICAL 90 DEGREE BEND ON THE CUSTOMER'S SIDE OF THE RPBA.
8. DIELECTRIC UNIONS MUST BE USED TO SEPARATE DISSIMILAR MATERIALS.
9. THE RPBA SHOULD BE LOCATED IMMEDIATELY DOWN STREAM OF THE METER, AND SHOULD NOT BE INSTALLED INSIDE A BUILDING.
10. AN RPBA INSTALLED MORE THAN FIVE (5) FEET ABOVE FLOOR LEVEL MUST HAVE A PLATFORM UNDER IT FOR THE TESTER OR MAINTENANCE PERSON TO STAND ON. THE PLATFORM MUST BE OSHA APPROVED AND MEET ALL APPLICABLE SAFETY STANDARDS AND CODES.

CITY OF PUYALLUP
OFFICE of THE CITY ENGINEER

APPROVED FOR PUBLICATION — DATE ISSUED: 2/5/2019

2" AND SMALLER REDUCED PRESSURE BACKFLOW ASSEMBLY INSTALLATION

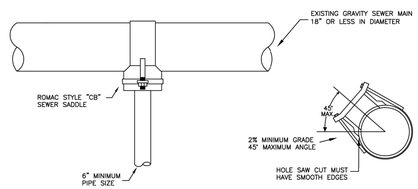
(NOT TO SCALE) CITY STANDARD 03.04.02

FILE NAME: K:\DEVDOC\STANDARDS\2019\PART 3 - STANDARDS\DETAILS\DET-WATER.DGN

3 U2.2 **CITY OF PUYALLUP 2" AND SMALLER RPBA**
SCALE: NTS

NOTES FOR CONNECTING TAPS ON EXISTING SEWER MAINS

1. THE TEE FITTING SHALL BE A ROMAC INDUSTRIES STYLE "CB" SEWER SADDLE (OR APPROVED EQUAL). ONLY NEW SADDLE AND PARTS SHALL BE INSTALLED. DUE TO PIPE SIZE MATERIALS OR PIPE CONDITION, THE CITY ENGINEER MAY REQUIRE AN ALTERNATE METHOD/MATERIAL BE USED.
2. THE SEWER MAIN TAP SHALL BE CUT WITH A SEWER PIPE TAPPING MACHINE (HOLE SAW) CAPABLE OF RETAINING THE COUPON.
3. THE ROUND HOLE CUT INTO THE SEWER MAIN SHALL BE NO LARGER THAN THE INSIDE DIAMETER OF THE SADDLE GASKET. THE HOLE SAW CUT EDGES SHALL BE SMOOTH.
4. THE COUPON SHALL BE RETAINED AND SURRENDERED TO THE INSPECTOR. THE PERMIT HOLDER WILL PAY ALL COSTS ASSOCIATED WITH THE LOCATION AND RETRIEVAL OF A LOST COUPON. ADDITIONALLY THE PERMIT HOLDER WILL BE HELD LIABLE FOR ANY SUBSEQUENT DAMAGES CAUSED BY A LOST COUPON.
5. BOLTS SHALL BE TORQUED TO MANUFACTURE SPECIFICATIONS, THEN RETORQUED AFTER 10 MINUTES.
6. NO TAPS SHALL BE ALLOWED ON EXISTING SEWER MAINS OVER 18" IN DIAMETER. CONNECTIONS INTO SEWER MAINS OVER 18" IN DIAMETER SHALL INTERSECT THE SEWER MAIN IN A MANHOLE. IN SOME CASES THE CITY ENGINEER MAY ALLOW A VARIANCE TO THIS REQUIREMENT.
7. ALL TRENCHING, BEDDING, AND BACKFILL SHALL BE IN ACCORDANCE WITH CITY STANDARD DETAIL NO. 06.01.01. ALL ASPHALT REPAIR SHALL BE IN ACCORDANCE WITH CITY STANDARD NO. 01.01.20. ALL ADDITIONAL UTILITY AND RIGHT OF WAY REPAIRS SHALL BE INACCORDANCE WITH THE "CITY STANDARDS" MANUAL.
8. THE CITY OF PUYALLUP WILL CONDUCT A "SEWER MAIN VIDEO INSPECTION" OF THE SEWER TAP. THE PERMIT HOLDER WILL BE REQUIRED TO REPAIR ANY SEWER TAP CONSTRUCTION DEFECTS FOUND BY THE CITY INSPECTORS. THE COST OF ALL REPAIRS AND SUBSEQUENT "SEWER MAIN VIDEO INSPECTIONS" WILL BE THE RESPONSIBILITY OF THE PERMIT HOLDER. THE DAMAGE DEPOSIT POSTED BY THE BUILDER WILL BE HELD UNTIL PROBLEMS ARE CORRECTED. DUE TO PUBLIC HEALTH AND SAFETY, BUILDING OCCUPANCY WILL NOT BE ALLOWED UNTIL REPAIRS ARE COMPLETED AND ACCEPTED BY THE CITY ENGINEER.



CITY OF PUYALLUP
DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

SEWER MAIN TAP

DRAWN BY	CHECKED BY	APPROVED BY	REVISED BY	CITY STANDARD
JIM DEWEN-SVOBODA	LINDA LUM	COLLEEN HARRIS	XXXX	
FILE NAME: I:\DWGS\COMMON\STDS\CITY\2009\04_SEWER\04-02.01		DATE APPROVED: 01/01/2009	DATE REVISED: XX/XX/XX	SCALE: 1:1	04.02.01

4 U2.2 **CITY OF PUYALLUP SEWER MAIN TAP**
SCALE: NTS

UTILITY CONFLICT NOTE:

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CLIENT: bp / ARCO — BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
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SEAL:

ALEX WHITE — STATE OF WASHINGTON — 21036777 — REGISTERED PROFESSIONAL ENGINEER

2/9/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
1402 S. MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY: JDF	ALLIANCE Z&DM:
CHECKED BY: AW	BP REPM:
DRAWN BY: JDF	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE: **UTILITY DETAILS**

SHEET NO: **U2.2**

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UTILITY DETAILS

FOR

ARCO ampm PUYALLUP

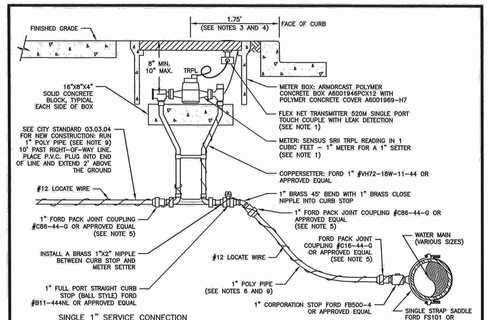
SEC. 33, TWN. 20 N, RGE. 4 E, W.M.

CITY OF PUYALLUP, PIERCE COUNTY

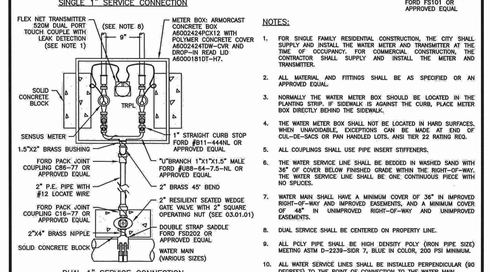
MINIMUM INTERCEPTOR SIZE = 1,000 GAL.	
PLUMBING FIXTURES SERVED.	
TOTAL DFU	25
REFER TO SHEET P2.0 OF THE PLUMBING PLANS FOR MORE DETAIL.	

UPC TABLE 10-3
GRAVITY GREASE INTERCEPTOR SIZING

DFU CONNECTED TO INTERCEPTOR	INTERCEPTOR SIZE
8	500 GALLONS
21	750 GALLONS
35	1,000 GALLONS
90	1,250 GALLONS



SINGLE 1" SERVICE CONNECTION



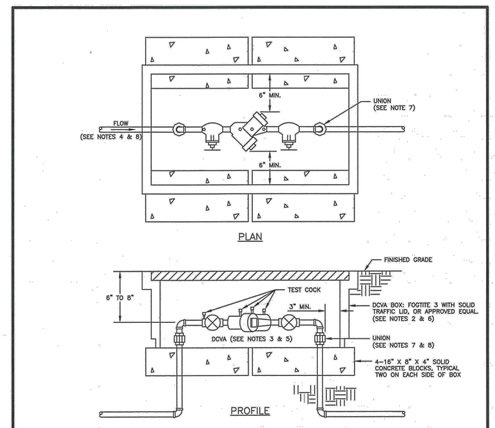
DUAL 1" SERVICE CONNECTION

NOTES:

1. FOR SINGLE FAMILY RESIDENTIAL CONSTRUCTION, THE CITY SHALL SUPPLY AND INSTALL THE WATER METER AND TRANSMITTER AT THE TIME OF OCCUPANCY. FOR COMMERCIAL CONSTRUCTION, THE CONTRACTOR SHALL SUPPLY AND INSTALL THE METER AND TRANSMITTER.
2. ALL MATERIAL AND FITTINGS SHALL BE AS SPECIFIED OR AN APPROVED EQUAL.
3. NORMALLY THE WATER METER BOX SHOULD BE LOCATED IN THE PLANTING STRIP. IF SIDEWALK IS AGAINST THE CURB, PLACE METER BOX DIRECTLY BEHIND THE SIDEWALK.
4. THE WATER METER BOX SHALL NOT BE LOCATED IN HARD SURFACES. WHEN UNAVOIDABLE, EXCEPTIONS CAN BE MADE AT END OF CUL-DE-SACS OR PAN HANDLED LOTS. ANSI TIER 22 RATING REQ.
5. ALL COUPLINGS SHALL USE PIPE INSERT STIFFENERS.
6. THE WATER SERVICE LINE SHALL BE BEDDED IN WASHED SAND WITH 36" OF COVER BELOW FINISHED GRADE WITHIN THE RIGHT-OF-WAY. THE WATER SERVICE LINE SHALL BE ONE CONTINUOUS PIECE WITH NO SPLICES.
7. WATER MAIN SHALL HAVE A MINIMUM COVER OF 36" IN IMPROVED RIGHT-OF-WAY AND IMPROVED EASEMENTS, AND A MINIMUM COVER OF 48" IN UNIMPROVED RIGHT-OF-WAY AND UNIMPROVED EASEMENTS.
8. DUAL SERVICE SHALL BE CENTERED ON PROPERTY LINE.
9. ALL POLY PIPE SHALL BE HIGH DENSITY POLY (IRON PIPE SIZE) MEETING ASTM D-2239-SIDR 7, BLUE IN COLOR, 200 PSI MINIMUM.
10. ALL WATER SERVICE LINES SHALL BE INSTALLED PERPENDICULAR (90 DEGREES) TO THE POINT OF CONNECTION TO THE WATER MAIN.

CITY OF PUYALLUP PUBLIC WORKS AND DEVELOPMENT ENGINEERING	APPROVED FOR PUBLICATION	1" WATER SERVICE CONNECTION	CITY STANDARD 03.03.01-2
	DATE ISSUED: 7/6/23	(NOT TO SCALE) FILE NAME: I:\ENGINEERING\STANDARDS\03 STANDARDS\03.03 - PART 3 - SEWER\03.03.01-2.DWG	

1 U2.3 **CITY OF PUYALLUP 1" WATER SERVICE CONNECTION**
SCALE: NTS

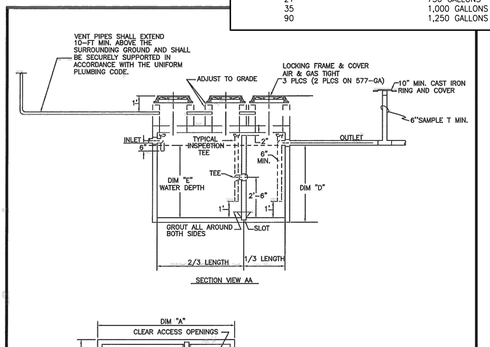


NOTES:

1. BACKFLOW ASSEMBLY MUST BE SELECTED FROM WASHINGTON STATE DEPARTMENT OF HEALTH'S LIST OF BACKFLOW PREVENTION ASSEMBLIES APPROVED FOR INSTALLATION IN WASHINGTON STATE, LATEST EDITION.
2. THE DCVA SHALL BE INSTALLED WITH ADEQUATE SPACE TO FACILITATE MAINTENANCE AND TESTING. IT SHALL BE TESTED AFTER INSTALLATION, BY A WASHINGTON STATE CERTIFIED BACK-FLOW ASSEMBLY TESTER, TO INSURE ITS SATISFACTORY OPERATION BEFORE OCCUPANCY, AND ANNUALLY THEREAFTER. SEND TEST RESULTS TO: CITY OF PUYALLUP, WATER QUALITY OPERATIONS, 1100 39TH AVE SE, PUYALLUP, WA 98374.
3. DCVA MUST BE PURCHASED AS A UNIT. NO MODIFICATIONS TO THE ASSEMBLY ARE ALLOWED.
4. DCVA SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF WATER METER. WHEN IRRIGATION SYSTEM IS CONNECTED OFF DOMESTIC WATER LINE, IRRIGATION DCVA SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF THE BRANCH CONNECTION.
5. DCVA SHALL BE SIZED EQUAL OR COMPARABLE TO METER SIZE.
6. METER BOX SHALL BE LARGE ENOUGH TO ALLOW THE MINIMUM SETBACKS ILLUSTRATED ABOVE. METER BOX LID SHALL BE A TRAFFIC LID WITH A H-20 LOADING.
7. DIELECTRIC UNIONS MUST BE USED TO SEPARATE DISSIMILAR MATERIALS.
8. USE ONLY BRASS OR COPPER BETWEEN THE METER AND THE UNION ON THE CUSTOMER'S SIDE OF THE DCVA.

CITY OF PUYALLUP OFFICE of THE CITY ENGINEER	APPROVED FOR PUBLICATION	2" AND SMALLER DOUBLE CHECK VALVE ASSEMBLY INSTALLATION	CITY STANDARD 03.04.01
	DATE ISSUED: 2/5/2019	(NOT TO SCALE) FILE NAME: I:\ENGINEERING\STANDARDS\03 STANDARDS\03.04 - PART 3 - SEWER\03.04.01.DWG	

2 U2.3 **CITY OF PUYALLUP 2" AND SMALLER DCVA**
SCALE: NTS



NOTES:

1. CONCRETE: 28 DAY COMPRESSIVE STRENGTH f'c = 4500 psi
2. REBAR: ASTM A-615 GRADE 60
3. MESH: ASTM A-185 GRADE 65
4. DESIGN: ACI-318-83 BUILDING CODE ASTM C-857 "MINIMUM STRUCTURAL DESIGN LOADING FOR UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES"
5. MINIMUM VAULT DIMENSIONS BASED ON UTILITY VAULT. OTHER MANUFACTURER'S SIZING MAY VARY.

* SEE CITY STANDARD DETAIL NO. 04.06.02 FOR ADDITIONAL NOTES

CAPACITY (Min. Size)	DIM "A"	DIM "B"	DIM "C"	DIM "D"	WATER DEPTH DIM "E"
750	7'-0"	4'-8"	7'-0"	4'-3"	3'-11"
1000	9'-0"	5'-0"	7'-2"	4'-2"	3'-10"
1500	11'-2"	5'-8"	7'-2"	4'-3"	3'-11"
2000	12'-8"	6'-8"	8'-0"	4'-7"	3'-10"
2500	12'-8"	6'-8"	8'-0"	5'-6"	4'-9"
3000	13'-1"	8'-0"	8'-7"	5'-1"	4'-8"
4000	13'-1"	8'-0"	8'-7"	6'-8"	6'-3"
5000	15'-7"	9'-7"	10'-0"	7'-4"	6'-1"
6000	15'-11"	9'-11"	10'-5"	7'-1"	5'-8"
7000	19'-11"	9'-11"	10'-5"	8'-0"	6'-7"

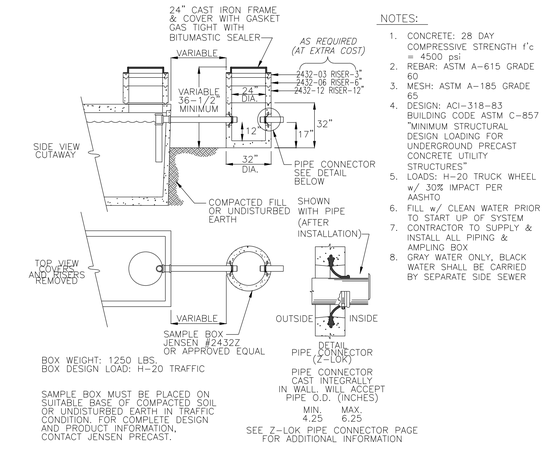
CITY OF PUYALLUP OFFICE of THE CITY ENGINEER	GREASE INTERCEPTOR				
	DRAWN BY: LINDA LIAM	CHECKED BY: COLLEEN HARRIS	APPROVED BY: MARK PALMER	REVISED BY: LINDA LIAM	DATE REVISED: 11/2018 XX/XX/XX XX/XX/XX
	FILE NAME: P:\PWDOCS\MKDOCS\TEDCITY\200968_SS.VOL01.01.PW.DGN		DATE APPROVED: 11/30/2016	SCALE: 3/4	CITY STANDARD 04.06.01

3 U2.3 **GREASE INTERCEPTOR**
SCALE: NTS

NOTES FOR GREASE INTERCEPTORS:

1. THE PLANS & SPECIFICATIONS SHALL ILLUSTRATE PROPERTY BOUNDARIES, PIPING/DRAINAGE DETAILS AND CONNECTIONS TO THE SANITARY SEWER. DETAIL AND ELEVATION DRAWINGS OF THE GREASE INTERCEPTOR SHALL INCLUDE SIZING CALCULATIONS IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE CURRENTLY ADOPTED BY THE CITY OF PUYALLUP.
2. VENTING OF THE INTERCEPTOR SHALL BE IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE CURRENTLY ADOPTED BY THE CITY OF PUYALLUP.
3. EFFLUENT FROM GREASE INTERCEPTORS SHALL NOT EXCEED 100 mg/L FAT, OIL, AND/OR GREASE DISCHARGED TO THE DOWNSTREAM SANITARY SEWER SYSTEM.
4. GREASE INTERCEPTORS INSTALLED IN PAVED AREAS SHALL COMPLY WITH H-20 LOADING CRITERIA.
5. THE GREASE INTERCEPTOR SHALL BE INSTALLED AND CONNNECTED SUCH THAT IT SHALL BE EASILY ACCESSIBLE FOR INSPECTION, CLEANING, AND REMOVAL AT ALL TIMES. MANHOLE COVERS SHALL BE GAS TIGHT AND HAVE A MINIMUM OPENING OF 24-INCHES IN DIAMETER.
6. NO SANITARY WASTEWATER SHALL BE CONVEYED TO THE SEPARATOR. A SEPARATE SIDE SEWER SHALL BE REQUIRED TO CARRY SANITARY WASTEWATER TO THE SEWER MAIN AND SHALL BE PLACED AS CLOSE TO THE SERVICE AREA AS PRACTICAL.
7. PLUMBING/PIPING SHALL BE CONSTRUCTED TO ESTABLISH "PARALLEL FLOW" (90-DEGREES TO THE TANK BAFFLE) THROUGH THE GREASE INTERCEPTOR. NO RADIUS, BEND, OR ELBOW SHALL BE ALLOWED IN THE INLET PIPE UPSTREAM OF THE INTERCEPTOR FOR A MINIMUM OF 10-FEET, OR 20-PIPE DIAMETERS, WHICHEVER IS GREATER.
8. ANY PUMP MECHANISM SHALL BE INSTALLED DOWNSTREAM OF THE INTERCEPTOR TO PREVENT FAT, OIL AND GREASE EMULSIFICATION. A "TEE" CONNECTION SHALL BE INSTALLED IN THE DISCHARGE PIPING TO PROVIDE FOR SAMPLE COLLECTION
9. ALL GREASE INTERCEPTORS SHALL BE FILLED WITH CLEAN WATER BEFORE USE.
10. THE DESIGN ENGINEER SHALL PROVIDE ENGINEERING SERVICES STAFF WITH A LETTER OF INSPECTION CERTIFYING THAT THE INSTALLATION WAS PERFORMED IN ACCORDANCE WITH ALL REGULATIONS AND THE APPROVED PLAN.
11. FINAL INSPECTION IS REQUIRED BY ENGINEERING SERVICES STAFF PRIOR TO CONNECTING TO THE SANITARY SEWER.
12. THE PROPERTY OWNER SHALL RETAIN OWNERSHIP OF THE GREASE INTERCEPTOR AND SIDE SEWER LINES AND SHALL BE RESPONSIBLE FOR THEIR OPERATION AND MAINTENANCE. A SERVICE/MAINTENANCE RECORD SHALL BE KEPT ON THE PREMISES AT ALL TIMES AND SHALL BE IMMEDIATELY AVAILABLE TO CITY OF PUYALLUP STAFF UPON REQUEST.
13. THE PROPERTY OWNER SHALL REPORT IMMEDIATELY TO THE CITY'S INDUSTRIAL PRETREATMENT SPECIALIST ANY SPILL, SURCHARGE, BYPASS, OR MECHANICAL FAULT AND/OR FAILURE WHICH INTERRUPTS, OR OTHERWISE REDUCES THE CAPACITY OR REMOVAL EFFICIENCY OF THE GREASE INTERCEPTOR BY CALLING (253) 841-5523.

CITY OF PUYALLUP OFFICE of THE CITY ENGINEER	GREASE INTERCEPTOR (NOTES)				
	DRAWN BY: LINDA LIAM	CHECKED BY: COLLEEN HARRIS	APPROVED BY: MARK PALMER	REVISED BY: LINDA LIAM	DATE REVISED: 11/2018 XX/XX/XX XX/XX/XX
	FILE NAME: P:\PWDOCS\MKDOCS\TEDCITY\200968_SS.VOL01.01.PW.DGN		DATE APPROVED: 11/30/2016	SCALE: NTS	CITY STANDARD 04.06.02



NOTES:

1. CONCRETE: 28 DAY COMPRESSIVE STRENGTH f'c = 4500 psi
2. REBAR: ASTM A-615 GRADE 60
3. MESH: ASTM A-185 GRADE 60
4. DESIGN: ACI-318-83 BUILDING CODE ASTM C-857 "MINIMUM STRUCTURAL DESIGN LOADING FOR UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES"
5. LOADS: H-20 TRUCK WHEEL w/ 30% IMPACT PER AASHTO
6. FILL w/ CLEAN WATER PRIOR TO START UP OF SYSTEM
7. CONTRACTOR TO SUPPLY & INSTALL ALL PIPING & AMPLING BOX
8. GRAY WATER ONLY, BLACK WATER SHALL BE CARRIED BY SEPARATE SIDE SEWER

BOX WEIGHT: 1250 LBS.
BOX DESIGN LOAD: H-20 TRAFFIC

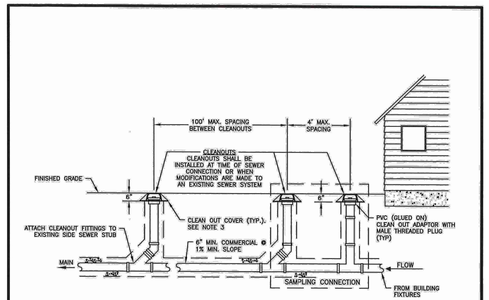
SAMPLE BOX MUST BE PLACED ON SUITABLE BASE OF COMPACTED SOIL OR UNDISTURBED EARTH IN TRAFFIC CONDITION. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN PRECAST.

PIPE CONNECTOR CAST INTEGRALLY IN WALL WILL ACCEPT PIPE O.D. (INCHES)

MIN.	MAX.
4.25	6.25

SEE Z-LOK PIPE CONNECTOR PAGE FOR ADDITIONAL INFORMATION

4 U2.3 **GREASE INTERCEPTOR SAMPLING BOX**
SCALE: NTS



NOTES:

1. SAMPLING CONNECTION SHALL BE INSTALLED OUTSIDE WITH UNOBSTRUCTED ACCESS AT ALL TIMES.
2. SAMPLING CONNECTION SHALL BE INSTALLED FOR EACH COMMERCIAL / RETAIL UNIT OR SPACE.
3. CLEAN OUT AND SAMPLING CONNECTION COVERS:
   A) FOR NON-VEHICULAR TRAFFIC INSTALLATIONS USE "CARSON" MODEL 910 GREEN YARD BOX WITH BOLT DOWN LID MARKED SEWER OR APPROVED EQUAL.
   B) FOR ASPHALT, GRAVEL, OR TRAFFIC INSTALLATIONS, SEE CITY STANDARD DETAIL NO. 04.03.05 FOR FRAME AND COVER SECTION.
4. EACH CLEANOUT ASSEMBLY SHALL CONSIST OF: ONE CLEANOUT ADAPTER, HUB x FEMALE. FIPT, PVC SI AND ONE CLEANOUT PLUG, MOPT WITH RAISED NUT, PVC SDR35.

CITY OF PUYALLUP PUBLIC WORKS AND DEVELOPMENT ENGINEERING	APPROVED FOR PUBLICATION	COMMERCIAL SIDE SEWER CONNECTION WITH SAMPLING CONNECTION	CITY STANDARD 04.03.04
	DATE ISSUED: 7/6/23	(NOT TO SCALE) FILE NAME: I:\ENGINEERING\STANDARDS\03 STANDARDS\03.04 - PART 3 - SEWER\03.04.04.DWG	

5 U2.3 **SAMPLING TEE CONNECTION**
SCALE: NTS

UTILITY CONFLICT NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POTHOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE AT 811 48 HOURS IN ADVANCE AND THEN POTHOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL NOTIFY BARGHAUSEN CONSULTING ENGINEERS, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

811 Know what's **below.** **Call** before you dig. Dial 811

CLIENT:

bp

ARCO

BP WEST COAST PRODUCTS, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

NO.	DATE	REVISION DESCRIPTION
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SEAL:

ALEX WHITE — STATE OF WASHINGTON — 21108777 — REGISTERED PROFESSIONAL ENGINEER

2/9/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
1402 S. MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY: JDF	ALLIANCE Z&DM:
CHECKED BY: AW	BP REPM:
DRAWN BY: JDF	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
UTILITY DETAILS

SHEET NO:
U2.3

P:\21000s\21730\engineering\21730-U.dwg 2/9/2024 2:23 PM JFEHARY

SEWER PROFILE - BUILDING + TRASH ENCLOSURE

FOR

ARCO ampm PUYALLUP

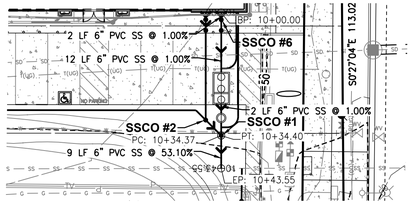
SEC. 33, TWN. 20 N, RGE. 4 E, W.M.

CITY OF PUYALLUP, PIERCE COUNTY

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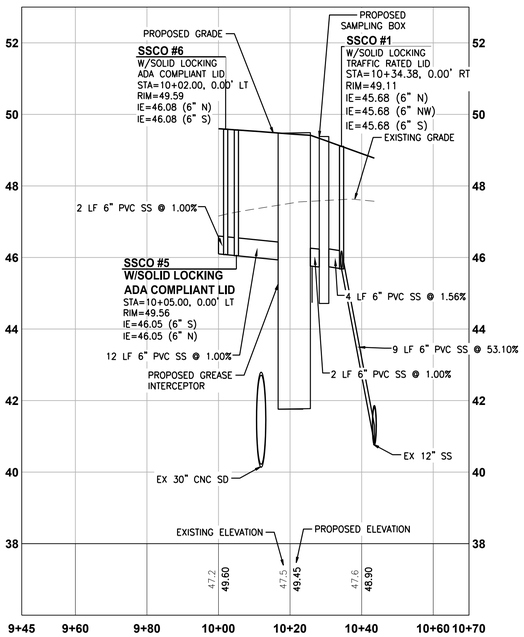
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SCALE: 1"=10'



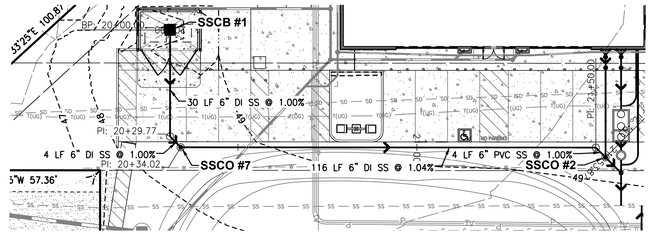
SANITARY SEWER BUILDING ALIGNMENT EXHIBIT - C-STORE TO SEWER TAP

HORIZONTAL SCALE: 1"=20'



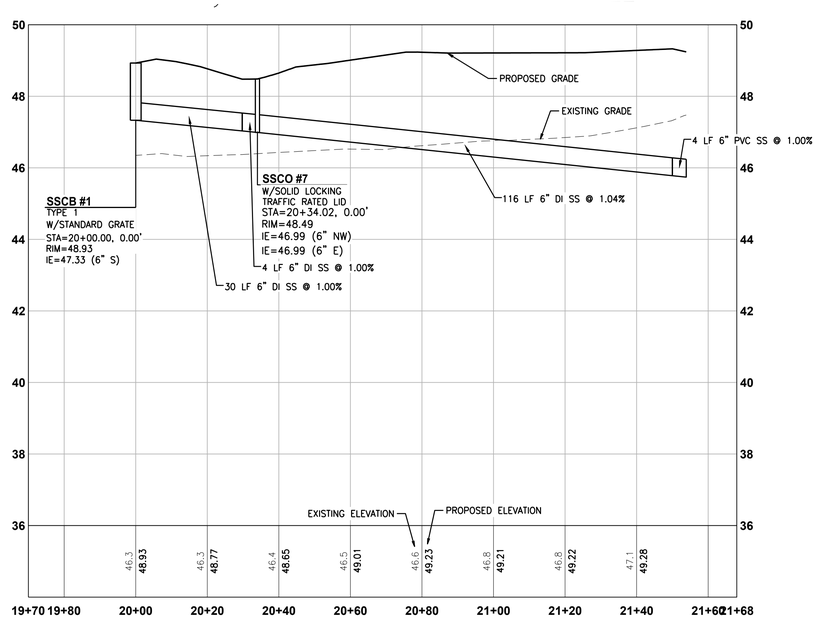
SANITARY SEWER BUILDING PROFILE - C-STORE TO SEWER TAP

HORIZONTAL SCALE: 1"=20', VERTICAL SCALE: 1" = 2'



SANITARY SEWER TRASH ENCLOSURE ALIGNMENT EXHIBIT - SSCB #1 TO SSCO #2

HORIZONTAL SCALE: 1"=20'



SANITARY SEWER TRASH ENCLOSURE PROFILE - SSCB #1 TO SSCO #2

HORIZONTAL SCALE: 1"=20', VERTICAL SCALE: 1" = 2'

UTILITY CONFLICT NOTE:

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18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

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SEAL: ALEX WHITE STATE OF WASHINGTON 21030777 REGISTERED PROFESSIONAL ENGINEER

2/9/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:

ARCO NTI

3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:

1402 S. MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY: JDF	ALLIANCE Z&DM:
CHECKED BY: AW	BP REPM:
DRAWN BY: JDF	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE: SEWER PROFILE - BUILDING & TRASH ENCLOSURE

SHEET NO: **U2.4**

P:\21000s\21730\engineering\21730-UP.dwg 2/9/2024 2:22 PM JFLEHARTY

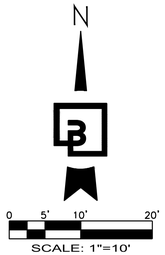
SEWER PROFILE - CANOPY + CAR WASH

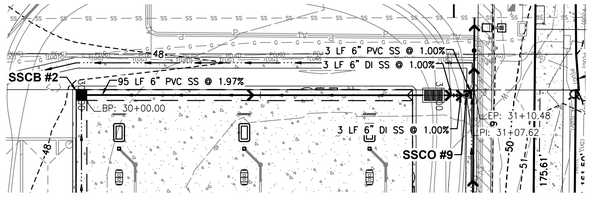
FOR

ARCO ampm PUYALLUP

SEC. 33, TWN. 20 N, RGE. 4 E, W.M.

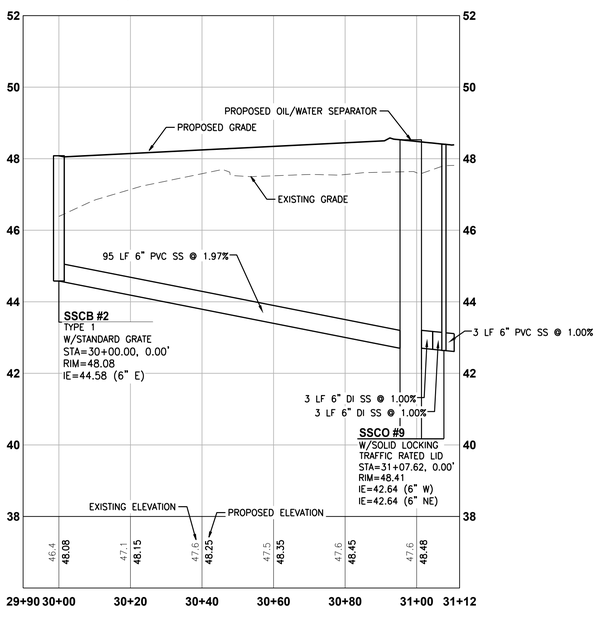
CITY OF PUYALLUP, PIERCE COUNTY





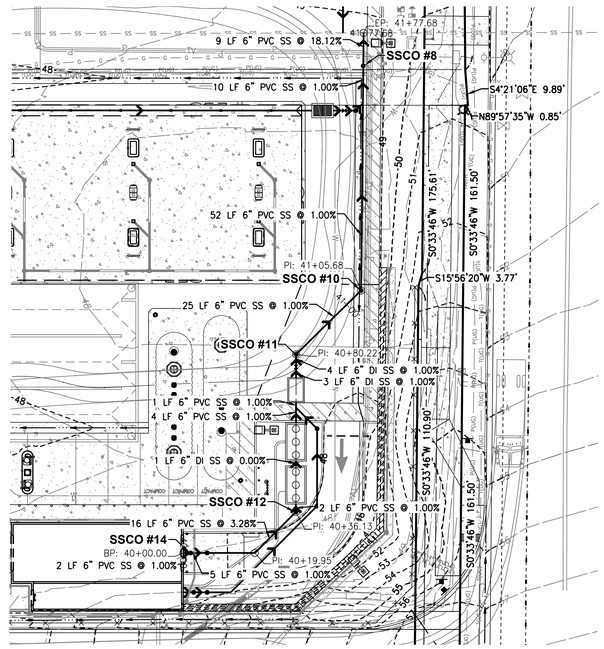
SANITARY SEWER CANOPY
ALIGNMENT EXHIBIT - SSCB #2 TO SSCO #9

HORIZONTAL SCALE: 1"=20'



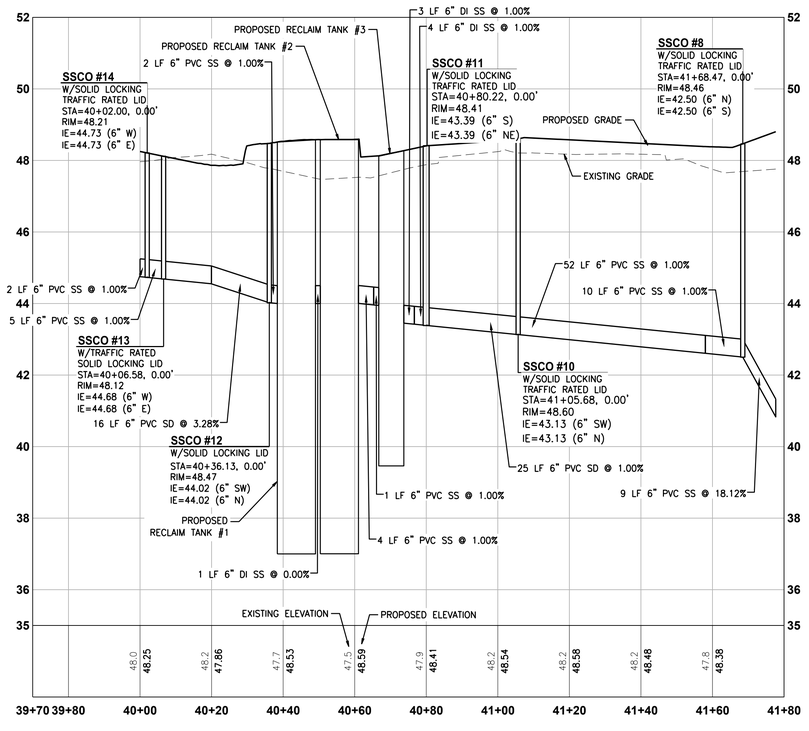
SANITARY SEWER
CANOPY PROFILE - SSCB #2 TO SSCO #9

HORIZONTAL SCALE: 1"=20', VERTICAL SCALE: 1" = 2'



SANITARY SEWER CAR WASH
ALIGNMENT EXHIBIT - CAR WASH TO SEWER TAP

HORIZONTAL SCALE: 1"=20'



SANITARY SEWER
CAR WASH PROFILE - CAR WASH TO SEWER TAP

HORIZONTAL SCALE: 1"=20', VERTICAL SCALE: 1" = 2'

UTILITY CONFLICT NOTE:

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SEAL:

ALEX WHITE — STATE OF WASHINGTON — 21036777 — REGISTERED PROFESSIONAL ENGINEER

2/9/24

PRCNC20231424
Convenience Store

DEVELOPMENT INFORMATION:
ARCO NTI
3400 am/pm
FUEL CANOPY w/ 6 MPD's

SITE ADDRESS:
1402 S. MERIDIAN
@ HIGHWAY 512
PUYALLUP, WASHINGTON

FACILITY #TBD

DESIGNED BY: JDF	ALLIANCE Z&DM:
CHECKED BY: AW	BP REPM:
DRAWN BY: JDF	ALLIANCE PM:
VERSION: - -	PROJECT NO: 21730

DRAWING TITLE:
SEWER PROFILE - CANOPY & CAR WASH

SHEET NO:
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