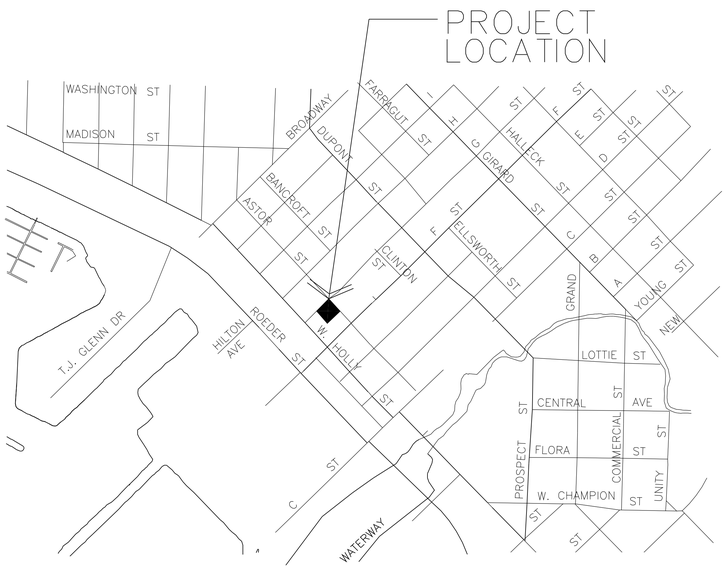
REVISED 8-18-2020

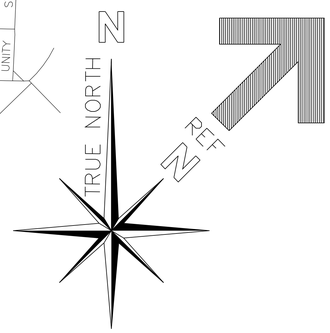
HARBORSIDE APARTMENTS

DEVELOPED BY: Bad Reinetz L.L.C.

NOTE: Deferred submittal of portions of the **stairway pressurization system** required per IBC 504.4.1 for the five stories of Type VA construction is at the permit holder's risk. It is the permit holder's responsibility to coordinate all disciplines and provide any changes to construction drawings for each applicable permit as necessary.



VICINITY MAP



APPROVED
Subject to Field Inspection
09/11/2020 8:31:46 AM
intorres

PROJECT INFORMATION:

DESCRIPTION:	6 STORIES INCLUDING 5 STORIES OF APARTMENTS CONSTRUCTED OVER BASEMENT AND GROUND LEVEL PARKING. TOTAL OF 50 APARTMENTS
ADDRESS:	1310 "G" STREET
LEGAL:	LOTS 13 THROUGH 16 INCLUSIVE, BLOCK 13, SUPPLEMENTAL MAP OF THE TOWN OF WHATCOM, RECORDED IN BOOK 1 OF PLATS, PAGE 42, RECORDS OF WHATCOM COUNTY, WASHINGTON
PARCEL No.	380225531389
SITE AREA:	10,003 SQ. FT.
SITE ANALYSIS:	BUILDING COVER: 9,539 s.f. 96% HARDSURFACING: 232 s.f. 2% OPEN SPACE: 232 s.f. 2% TOTAL: 10,003 s.f. 100%

INDEX OF DRAWINGS

A0.1	COVER, BLDG CODE & LAND USE
A1.1	SITE PLAN
A2.1	BASEMENT & 1st STORY GROUND FLOOR PLANS
A2.2	2nd FLOOR & 3rd FLOOR PLANS
A2.3	4th & 5th FLOOR PLANS
A2.4	6th FLOOR & ROOF PLANS
A2.5	WALL TYPES, HORIZONTAL SYSTEMS & DOOR SCHEDULE
A3.1	BUILDING ELEVATIONS
A3.2	BUILDING SECTION @ BASEM'T RAMP
A3.3	WALL SECTIONS
A4.1	LARGE SCALE GROUND LEVEL FLOOR PLAN
A4.2	DETAIL UNIT FLOOR PLANS
A4.3	DETAIL UNIT FLOOR PLANS
A4.4	DETAIL UNIT FLOOR PLANS
A4.5	DETAIL UNIT FLOOR PLAN & WINDOW TYPES
A5.1	DETAIL UNIT FLOOR PLANS
A7.1	STAIR No. 1 SECTION & DETAIL PLANS
A7.2	STAIR No. 2 SECTION & DETAIL PLANS
A8.1	MISC DETAILS
1 of 1	SITE LIGHTING PLAN
STRUCTURAL DRAWINGS	STRUCTURAL DWGS UNDER SEPARATE INDEX
MECHANICAL PLUMBING DRAWINGS	DWGS UNDER SEPARATE INDEX
MECHANICAL HVAC DRAWINGS	DWGS UNDER SEPARATE INDEX
CIVIL SITE DRAWINGS	CIVIL DWGS UNDER SEPARATE INDEX

BUILDING CODE SUMMARY

CURRENT CODE:
2015 INTERNATIONAL BUILDING CODE (IBC), FIRE CODE (IFC), MECHANICAL CODE (IMC), UNIFORM PLUMBING CODE, WASHINGTON STATE RESIDENTIAL ENERGY CODE, ALL AS ADOPTED AND AMENDED BY WASHINGTON STATE & THE CITY OF BELLINGHAM.

OCCUPANCY / CONSTRUCTION TYPE:
PARKING BASEMENT & GROUND FLOOR (1st STORY): S2 / TYPE 1A - 3 HOUR WITH NFPA 13 FIRE SPRINKLER SYSTEM NON-COMBUSTIBLE WITH LIMITED COMBUSTIBLE MATERIAL ALLOWED PER IBC 603
2nd, 3rd, 4th, 5th & 6th RESIDENTIAL FLOORS: R2 / TYPE VA - 1 HOUR WITH NFPA 13 FIRE SPRINKLER SYSTEM

PARKING & RESIDENTIAL - 2 SEPARATE BUILDINGS PER IBC 510.2 HORIZONTAL BUILDING SEPARATION

GRADE PLANE: ELEVATION 42.72 ESTIMATED

ALLOWABLE FLOOR AREAS:
PARKING GARAGE - ONE STORY ABOVE GRADE PLANE, ALLOWED AREA IS UNLIMITED, IBC TABLE 506.2

RESIDENTIAL BUILDING - 5 STORIES ABOVE GARAGE, HEIGHT ABOVE GRADE PLANE 64'± NOT INCL. PENTHOUSE
At = TABULAR AREA FROM IBC TABLE 506.2 = 36,000 s.f. WITH NFPA 13 FIRE SPRINKLERS
If = [F/P - 0.25] W/30, F = 189', P = 378', W IS LIMITED TO 30 BY 506.3.2
If = [(189 / 378) - 0.25] 30/30 > If = 0.25

ALLOWABLE AREA: Aa = [At + (NS If)], per story, Aa = [36,000 + (36,000 x 0.25)], Aa = 45,000 s.f. per story
TOTAL ALLOWABLE AREA = Aa x 3, = 135,000 s.f. > PROPOSED AREA = 36,613 s.f. OKAY COMPLIES

ALLOWABLE HEIGHT:
IBC TABLE 504.3 70 ft. ALLOWED, PROPOSED HEIGHT ABOVE GRADE PLANE = 64 ft. ± PENTHOUSE EXCLUDED
ALLOWABLE HGT IN STORIES 4 PER INC TABLE 504.4, PROPOSED 4+1 STORIES. REF IBC 504.4.1 STAIR PRESSURIZATION. OKAY COMPLIES

SHAFTS:
SHAFTS & STAIRWAY ENCLOSURES THROUGH THE HORIZONTAL ASSEMBLY SHALL HAVE NOT LESS THAN A 2-HOUR FIRE RESISTANCE RATING WITH OPENINGS PROTECTED PER SECTION 716.5. REF IBC 510.2, CONDITION #3.

ELEVATOR:
IBC 1104.4 ELEVATOR (ACCESSIBLE ROUTE) IS REQUIRED.
IBC 3002.4 ELEVATOR CAR TO ACCOMODATE A 24" x 84" STRECHER.
IBC 3006.1 ELEVATOR LOBBIES ARE NOT REQUIRED AS NONE OF THE LISTED 5 CONDITIONS APPLY TO THIS BUILDING.
IBC 3006.2 HOISTWAY OPENINGS ARE NOT REQUIRD TO BE PROTECTED NONE OF THE 5 LISTED CONDITIONS APPLY.
PER CITY REVIEW PROTECTION OF ELEVATOR HOISTWAY OPENINGS IS REQUIRED. ELEVATOR HOISTWAY DOORS HAVE FIRE RESISTANCE RATING BUT ARE NOT RATED FOR SMOKE. SEE DRAWINGS FOR SMOKE CURTAINS ADDED TO HOISTWAY ENTRANCES.

NOTE: The elevator hoistway openings are required to be protected with assemblies that meet the requirements for a smoke and draft control door assembly tested in accordance with UL 1784 where opening onto fire-resistance rated corridors (per 1020.1) in accordance with IBC 716.5.3.1.

ACCESSIBLE MEANS OF EGRESS:
IBC 1009.1 ACCESSIBLE MEANS OF EGRESS IS REQUIRED, WHERE 2 OR MORE EXITS ARE REQUIRED, 2 ACCESSIBLE MEANS OF EGRESS ARE REQUIRED.
IBC1009.2 COMPONENTS, INTERIOR EXIT STAIRWAYS COMPLYING WITH 1009.3 & 1023 ARE ACCESSIBLE MEANS
IBC 1009.3 STAIRWAYS NOT REQUIRED TO BE 48" WIDE BETWEEN HANDRAILS NOR HAVE AREAS OF REFUGE, SEE EXCEPTIONS #2, 5 & 8.
IBC 1009.2.1 ELEVATOR REQUIRED FOR OVER 4 STORIES COMPLYING WITH IBC 1009.4 (STANDBY POWER) IS NOT REQUIRED, EXCEPTION #1: BUILDINGS WITH SPRINKLER SYSTEM AND A HORIZONTAL EXIT LOCATED AT OR ABOVE LEVEL OF EXIT DISCHARGE. A 2 HOUR FIRE BARRIER WALL AND HORIZONTAL EXITS ARE PROVIDED AT EACH RESIDENTIAL FLOOR LEVEL.

ACCESSIBLE UNITS:
IBC 1107.6.2.2.1 WA STATE AMENDED 3 - TYPE "A" ACCESSIBLE UNITS REQUIRED. ALL OTHER UNITS TO BE TYPE "B"
TYPE "A" UNITS INCLUDE: #501, 504 & 604

EXTERIOR WALLS:
5A CONST: ONE-HOUR EXTERIOR WALLS REQUIRED - IBC TABLE 602 & EXTERIOR BEARING WALLS - IBC TABLE 601.
ROOF IS 1-HR FIRE RESISTIVE, PARAPET WALLS NOT REQUIRED.
1A CONST: THREE-HOUR EXTERIOR & BEARING WALLS REQUIRED.

STAIR PRESSURIZATION:
STANDBY POWER SOURCE IS REQUIRED TO OPERATE PRESSURIZATION FANS. REF IBC 504.4.1
THIS PROJECT PROPOSES TO INSTALL UNITERUPTIBLE POWER SUPPLY AS STANDBY POWER. POWER SUPPLY WILL BE LOCATED IN A SEPARATE ROOM ON THE TOP FLOOR NEAR THE STAIR No. 2. SEE DRAWING A2.4.

STANDPIPES
PROVIDE CLASS I STANDPIPE SYSTEMS IN STAIRWELLS. REF IBC 905.3.

FIRE EXTINGUISHERS
PROVIDE PORTABLE DIRE EXTINGUISHERS FOR EA 3,000 SQ. FT. OF FLOOR AREA, SIZE 2A10BC. REFR IBC 906.

EXIT SIGNS
PROVIDE ILLUMINTAED EXIT SIGNS AT EXITS AND EXIT ACCESS DOORWAYS IN ACCORD WITH IBC 1013. PROVIDE BACK-UP POWER TO MAINTAIN SIGN ILLUMINATION FOR A MINIMUM OF 90 MINUTES AFTER PRIMARY POWER FAILURE.

EGRESS ILLUMINATION
PROVIDE ILLUMINATION OF MEANS OF EGRESS. WHERE 2 OR MORE MEANS OF EGRESS ARE REQUIRED PROVIDE STANDBY BACK-UP POWER TO OPERATE MEANS OF EGRESS LIGHTING FOR NOT LESS THAN 90 MINUTES AFTER PRIMARY POWER FAILURE. IN ADDITION TO EXITS PROVIDE ILLUMINATION FOR ELECTRICAL EQUIPMENT ROOMS AND FIRE SPRINKLER SYSTEM RISER ROOM.

FIRE ALARM
PROVIDE A MONITORED MANUAL FIRE ALARM SYSTEM ACTIVATED BY WATERFLOW WITHIN FIRE SPRINKLER SYSTEM WITH ANNUNICIATROR PANEL LOCATED IN FRONT LOBBY. LOCATE FIRE ALARM CONTROL PANEL IN FIRE SPRINKLER RISER ROOM. PROVIDE INTERCONNECT OF FIRE ALARM TO STAIR PRESSURIZATION FAN CONTROL. FANS TO START ON DETECTION OF SMNOKE. PROVIDE BACK-UP POWER FOR FIRE ALARM SYSTEM.

BUILDING ENCLOSURE DOCUMENTS:
THE ARCHITECT HAS DETERMINED THAT THESE CONSTRUCTION DRAWINGS WHEN USED IN CONJUNCTION WITH THE PRINTED INSTALLATION RECOMMENDATIONS OF THE MANUFACTURERS OF THE PRODUCTS SPECIFIED HEREIN ARE IN HIS / MY PROFESSIONAL JUDGEMENT APPROPRIATE TO STATISFY THE REQUIREMENTS OF RCW 64.55.005 THROUGH 64.55.090. COPIES OF THE MANUFACTURERS RECOMMENDED INSTALLATION INSTRUCTIONS WILL BE PROVIDED ON THE JOBSITE AT THE TIME OF INSTALLATION.

PROPOSED FLOOR AREAS:

BASE TYPE 1A CONST BUILDING

BASEMENT:	8253 S.F. DOES NOT CONTRIBUTE TO BUILDING AREA (IBC 506.1.3)
1st. (GROUND) FLOOR:	9229 S.F.
GROSS BUILDING AREA =	9,229 S.F.

UPPER TYPE 5A CONST BUILDING

2nd FLOOR:	8651 S.F.
3rd FLOOR:	8651 S.F.
4th FLOOR:	6437 S.F.
5th FLOOR:	6437 S.F.
6th FLOOR:	6437 S.F.
GROSS BUILDING AREA:	36,613 S.F.

PARKING
31 INSIDE PARKING SPACES ARE PROVIDED
PER IBC 1106.2 ONE ACCESSIBLE SPACE IS REQUIRED. (1 ACCESSIBLE SPACES PROVIDED.)

WSEC (ENERGY CODE)
ENVELOPE COMPLIANCE PER COMPONENT "U" FACTOR ALTERNATIVE. SEE ATTACHED ENVELOPE ANAYLSIS.
ADDITIONAL EFFICIENCY PACKAGE OPTIONS PER WSEC C406.1 WILL BE PROVIDED AS FOLLOWS:
1.) THE COMPLETED ELECTRICAL DESIGN WILL PROVIDE "REDUCED LIGHTING POWER ON ACCORDANCE WIH SECTION C406.3.
2.) ENHANCED ENVELOPE PERFORMANCE IN ACCORDANCE WITH SECTION C406.8 IS PROVIDED. SEE ATTACHED ENVELOPE EVALUATION.

LAND USE REGULATIONS:

NEIGHBORHOOD:	LETTERED STREETS, AREA 10 BMC 20.35.010 COMMERCIAL OLD TOWN OVERLAY DISTRICT
SETBACKS:	NONE
DENSITY:	FLOOR AREA RATIO (FAR) 3.5 ALLOWED PROJECT AREAS: EXCLUDING PARKING & BASEMENT 1st & 2nd RESIDENTIAL FLOORS @ 8,821 s.f. EACH = 17,642 s.f. 3rd - 5th RESIDENTIAL FLOORS @ 6,644 s.f. EACH = 19,932 s.f. GROUND FLOOR: W/O PARKING 2,242 s.f. TOTAL FLOOR AREA: 39,816 s.f.
PROPOSED FAR:	40,042 s.f. / 10,003 s.f. = 3.98 FAR > 3.5 OKAY WITH 0.5 BONUS
ALLOWABLE HEIGHT:	75' DEF. #1 SUBJECT TO BMC 20.35.070, C, 1-4

PROPOSED BUILDING GROSS FLOOR AREAS:

	BASEMENT:	9,488 s.f. INCLUSIVE OF DRIVE RAMP
1st STORY	GROUND FLOOR:	8,622 s.f. EXCLUSIVE OF DRIVE RAMP
2nd STORY	1st APARTMENT FLOOR:	8,821 s.f.
3rd STORY	2nd APARTMENT FLOOR:	8,821 s.f.
4th STORY	3rd APARTMENT FLOOR:	6,644 s.f.
5th STORY	4th APARTMENT FLOOR:	6,644 s.f.
6th STORY	5th APARTMENT FLOOR:	6,644 s.f.
	TOTAL FLOOR AREA:	55,684 s.f.

PROPOSED UNIT MIX:
1 EA. LIVE / WORK UNIT
7 EA. ONE BEDROOM UNITS
42 EA STUDIO UNITS
50 TOTAL UNITS

BLD2020-0129/ MEC2020-0472/ PLM2020-0069
1310 G ST

RECEIVED
09/04/2020
CITY OF BELLINGHAM PERMIT CENTER

PARKING REQUIRED: 50 APT. UNITS x 1.0 SPACES = 50 SPACES

PARKING PROPOSED: 31 INSIDE PARKING (INCL 1 ACCESSIBLE SPACES)
7 STREET PARKING CONSTRUCTED
38 TOTAL SPACES PROPOSED < 50 REQ'D
SECURE INSIDE BICYCLE PARKING IS PROVIDED FOR UP TO 28 BICYCLES

DEFERRED SUBMITTALS

DEFERRED SUBMITTALS ARE TO BE SUBMITTED TO THE DESIGN PROFESSIONAL FOR REVIEW AND THEN FORWARDED TO BUILDING OFFICIAL WITH DESIGN PROFESSIONAL NOTE THAT THE SUBMITTALS ARE IN GENERAL COMPLIANCE WITH THE BUILDING DESIGN

- GEO-PIER DESIGN (SOILS IMPROVEMENT)
- ELECTRICAL PLANS SEPARATE PERMIT REQUIRED *SEE NOTE BELOW
- FIRE SERVICE MAIN EXTENSION SEPARATE PERMIT REQUIRED
- FIRE SPRINKLER & STANDPIPE SYSTEMS SEPARATE PERMIT REQUIRED
- FIRE ALARM SYSTEM SEPARATE PERMIT REQUIRED
- EMERGENCY RESPONDER RADIO SYSTEM SEPARATE PERMIT REQUIRED IF SYSTEM REQ'D AFTER TESTING WHEN BUILDING IS SUBSTABTIALLY COMPLETE.

NOTE:
STAIRWAY PRESSUIZATION FANS COMPLETE WITH STAND BY OR BACK-UP POWER IS SHOWN AND SPECIFIED HEREIN - SEE DWGS A2.4, A7.1 & A7.2.

THIS DOCUMENT WAS PREPARED SOLELY AND EXCLUSIVELY FOR THE CLIENT NAMED HEREIN AND IS NOT TO BE USED IN WHOLE OR IN PART BY ANYONE OTHER THAN THE CLIENT NAMED HEREIN WITHOUT THE EXPRESS WRITTEN CONSENT OF ARA. IT MAY NOT BE REUSED BY ANYONE ON ANY OTHER PROJECT OR EXTENSION TO THIS PROJECT WITHOUT THE EXPRESS WRITTEN CONSENT OF ARA. IT IS NOT TO BE TRANSFERRED TO ANY PERSON OR ENTITY WITHOUT THE EXPRESS WRITTEN CONSENT OF ARA. ANY REUSE OR MODIFICATION OF THIS DOCUMENT WITHOUT THE EXPRESS WRITTEN CONSENT OF ARA SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO ARA. THE USER SHALL FURTHER INDEMNIFY AND HOLD HARMLESS ARA FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM. THE USER SHALL ALSO COMPENSATE ARA FOR ANY TIME SPENT OR EXPENSES INCURRED BY ARA IN DEFENSE OF ANY SUCH CLAIM. THE USER AND ARA AGREE TO MUTUALLY BINDING MEDIATION AND ARBITRATION, IN ACCORDANCE WITH THE CONSTRUCTION INDUSTRY ARBITRATION RULES OF THE AMERICAN ARBITRATION ASSOCIATION, FOR ANY DISPUTE ARISING OUT OF THE USE OF THIS DOCUMENT BY ANY PERSON OR ENTITY OTHER THAN ARA. THE USER AGREES TO PAY ARA'S REASONABLE ATTORNEY'S FEES AND EXPENSES TO ENFORCE THIS PROVISION.

ENGINEER'S SEAL

No.	REVISION	DATE

ISSUE	DATE

HARBORSIDE APARTMENTS
1310 "G" STREET
BELLINGHAM, WA
For
Bad Reinetz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

LICENSED ARCHITECT ROGER A. AXELSON STATE OF WASHINGTON

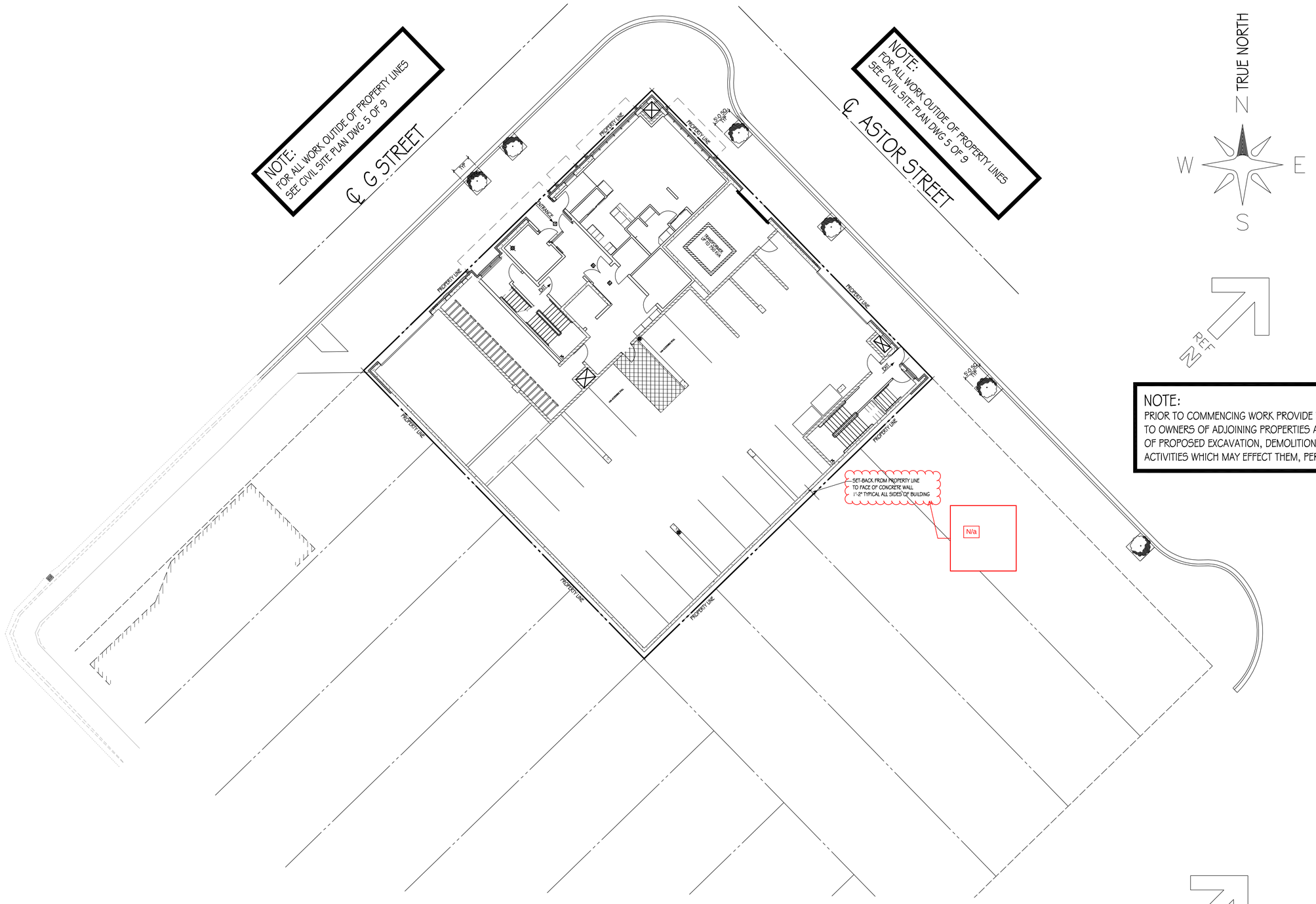
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Project Architect - Roger Axelson
Ph:360-671-0933 / E-Mail: ARA@pro-services.net

Drawing Title:
COVER
BLDG CODE
& LAND USE

PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A0.1
OVERALL DRAWING SCALE: 1" = 0" - 1"

PHOTO REDUCTION SCALE 0" 1 INCH 2 INCHES 3 INCHES 4 INCHES



SITE PLAN

SCALE: 1" = 10' - 0"

NOTE:
SEE CIVIL DWG #2 OF 9 "EXISTING CONDITION SITE PLAN" FOR EXISTING SITE CONDITIONS.

REVISED 7-16-2020

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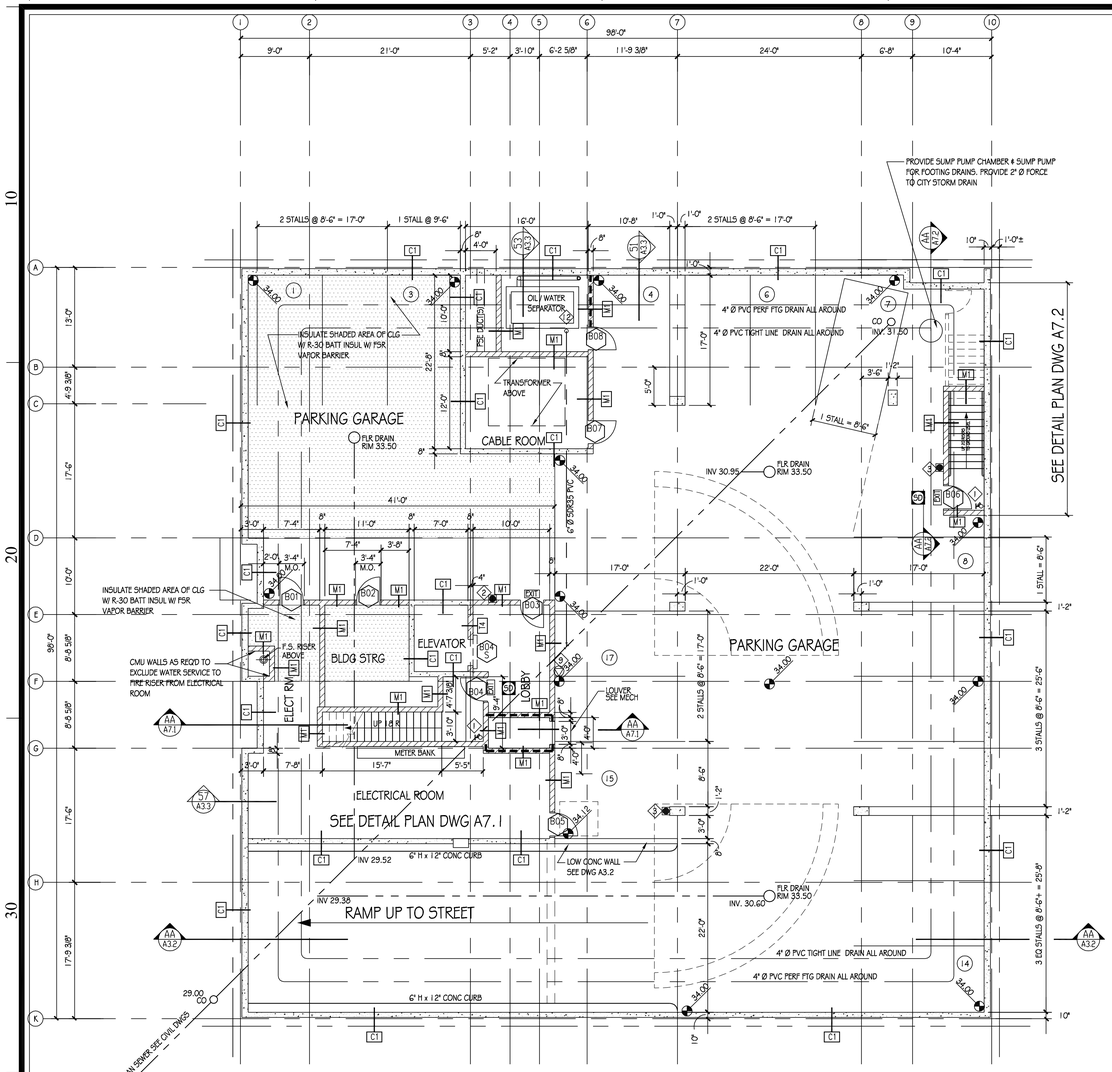
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PH.360-671-1933 / E-Mail: ARAdmin-services.net

Drawing Title:
SITE PLAN

PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A1.1
OVERALL DRAWING
SCALE: 1" = 10' - 0"

PHOTO REDUCTION SCALE 0 1 INCH 2 INCHES 3 INCHES 4 INCHES



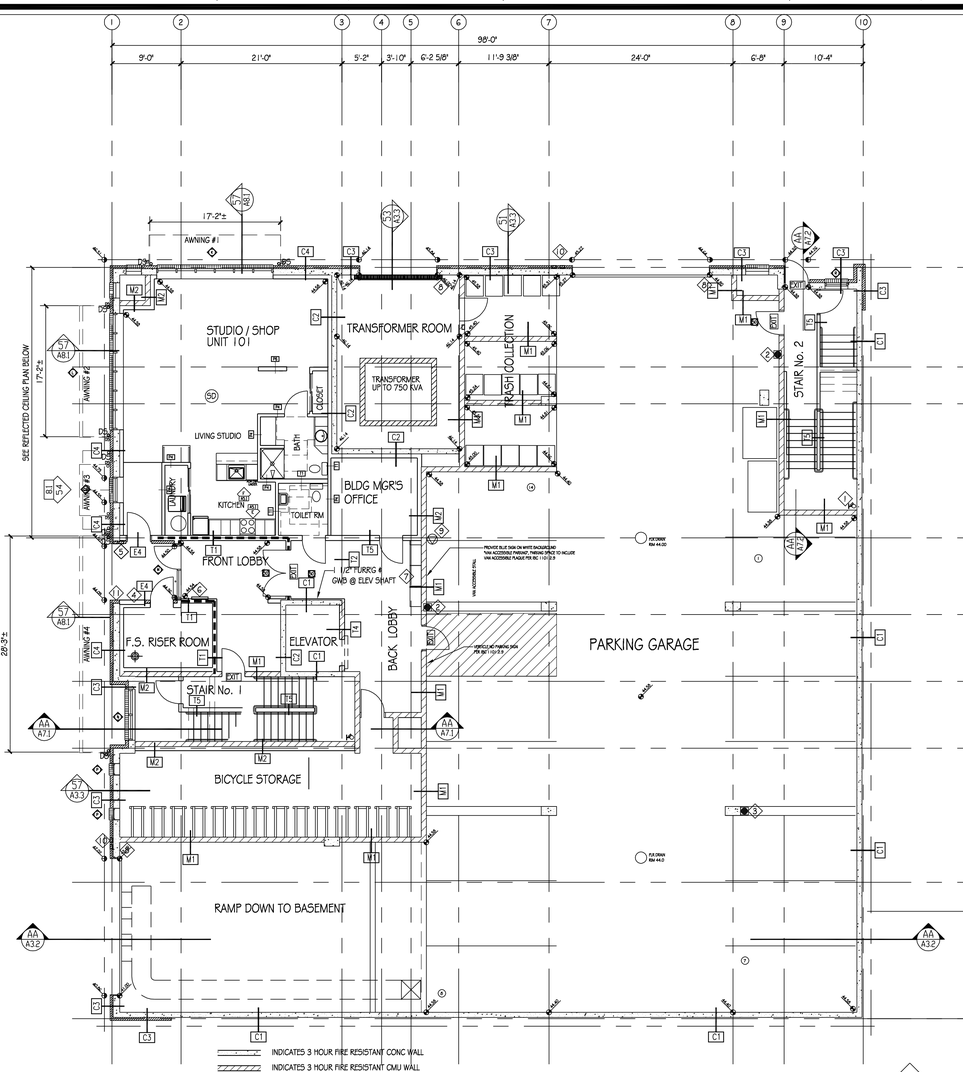
INDICATES 3 HOUR FIRE RESISTANT CONC WALL
INDICATES 3 HOUR FIRE RESISTANT CMU WALL
(50) SMOKE DETECTOR CONNECTED TO FIRE ALARM SYS. TYPICAL
EXIT INDICATES ILLUMINATED EXIT SIGN WITH STANDBY POWER

BASEMENT FLOOR PLAN

IBC FLOOR AREA: 8253 SQ. FT. EXCLUDING UPPER RAMP

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

REF N



INDICATES 3 HOUR FIRE RESISTANT CONC WALL
INDICATES 3 HOUR FIRE RESISTANT CMU WALL
INDICATES 2 HOUR FIRE RESISTANT FRAME WALL
(50) SMOKE DETECTOR NOT ON FIRE ALARM SYS
(50) SMOKE DETECTOR CONNECTED TO FIRE ALARM SYS. TYPICAL
EXIT INDICATES ILLUMINATED EXIT SIGN WITH STANDBY POWER

1st STORY, GROUND FLOOR PLAN

IBC FLOOR AREA: 9229 SQ. FT. INCLUDING RAMP TO BASEMENT

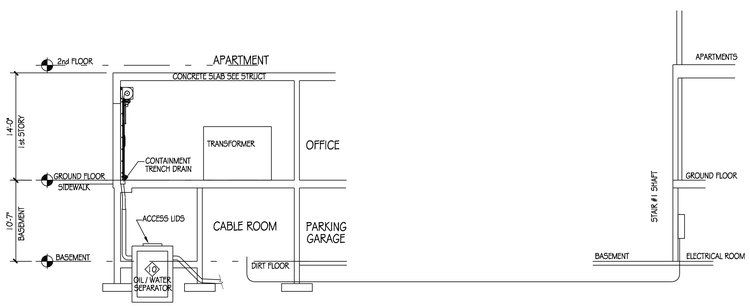
SCALE: 1/8" = 1'-0"

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SEE DWG A4.1 FOR LARGE SCALE GROUND LEVEL PLAN

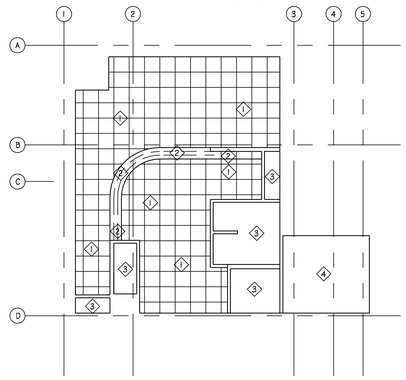
FLOOR PLAN KEYNOTES:

1. CLASS I STANDPIPE CONN
2. SEMI RECESSED FIRE EXTINGHUISHER CABT WITH 2A I OBC FIRE EXTINGUISHER. PREPARE WALL RECESS TO MAINTAIN FIRE RESISTANT RATING OF WALL. CABT AS SELECTED BY OWNER. TOP OF CABT 48" ABOVE FLR
3. SURFACE MTD. FIRE EXTINGHUISHER CABT WITH 2A I OBC FIRE EXTINGUISHER. CABT AS SELECTED BY OWNER. TOP OF CABT 48" ABOVE FLR.
4. APPROVED RECESSED KNOX BOX (KEY BOX).
5. SEMI RECESSED INTERCOM CALL BOX AS APPROVED BY OWNER
6. FIRE ALARM ANNUNCIATOR PANEL
7. SALSBURY OR APPROVED 4C HORIZINTAL MAILBOX UNITS , 17 MAILBOXES # 2 PARCEL BOXES IN EACH UNIT. PROVIDE 3-UNITS TOTAL 51 MAILBOXES # 6 PARCEL BOXES.
8. CHAIN HOIST DOOR OPENER
9. PROVIDE ELECTRIC VEHICLE CHARGING STATION.
10. PROVIDE "FSE" KEY BOX WITH REMOTE OPENER FOR COILING DOOR AND KEY FOR ELECTRICAL RM OR TRANSFORMER RM ACCESS.
11. PROVIDE "FSE" KEY BOX WITH ENTRY DOOR PASS KEY AND KEY(S) NECESSARY FOR ELECTRICAL & TRANSFORMER ROOM ACCESS.
12. CONTECT VORTCLARDX MODEL VCL40 OIL / WATER SEPARATOR. INSTALL AS SHOWN AND PER MANUFACTURERS DIRECTIONS WITH INLET # OUTLETS AT ELEV. 34.0' (NOMINAL BASEMENT FLOOR LEVEL) CONNECT OUTLET TO DRAIN AS SHOWN. CONNECT INLET TO TRENCH DRAIN ABOVE IN TRANSFORMER VAULT. UNIT RATED FOR 150 GPM FLOW WITH APPROX 650 GAL WASTE OIL STORAGE CAPACITY.



SECTION DIAGRAM @ TRANSFORMER ROOM

SEE ELECTRICAL ONE-LINE RISER DIAGRAM



REFLECTED CLG PLAN KEYNOTES

1. 2' x 2' SUSPENDED CEILING AT +10'-0" ABOVE FLOOR ARMSTRONG OR USG FISSURED MINIBOARD OR AS SELECTED. SEE ELECTRICAL FOR LIGHT FIXTURE LAYOUT.
2. LIGHT GAUGE STEEL FRAMED GYP BD SOFFIT WITH BOTTOM OF SOFFIT +8'-0" ABOVE FLOOR.
3. LIGHT GAUGE STEEL FRAMED GYP BD CEILING AT +8'-0" ABOVE FLOOR.
4. LIGHT GAUGE STEEL FRAMED GYP BD CEILING AT +10'-0" ABOVE FLOOR.

GROUND FLOOR PARTIAL REFLECTED CLG PLAN

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

REVISED 8-18-2020

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No.	REVISION	DATE

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HARBORSIDE APARTMENTS

1310 "C" STREET
BELLINGHAM, WA

For
Bad Reinertz L.L.C.
1000 ASOR STREET #101, BELLINGHAM, WA 98225

REGISTERED ARCHITECT ROGER A. AXELSON STATE OF WASHINGTON

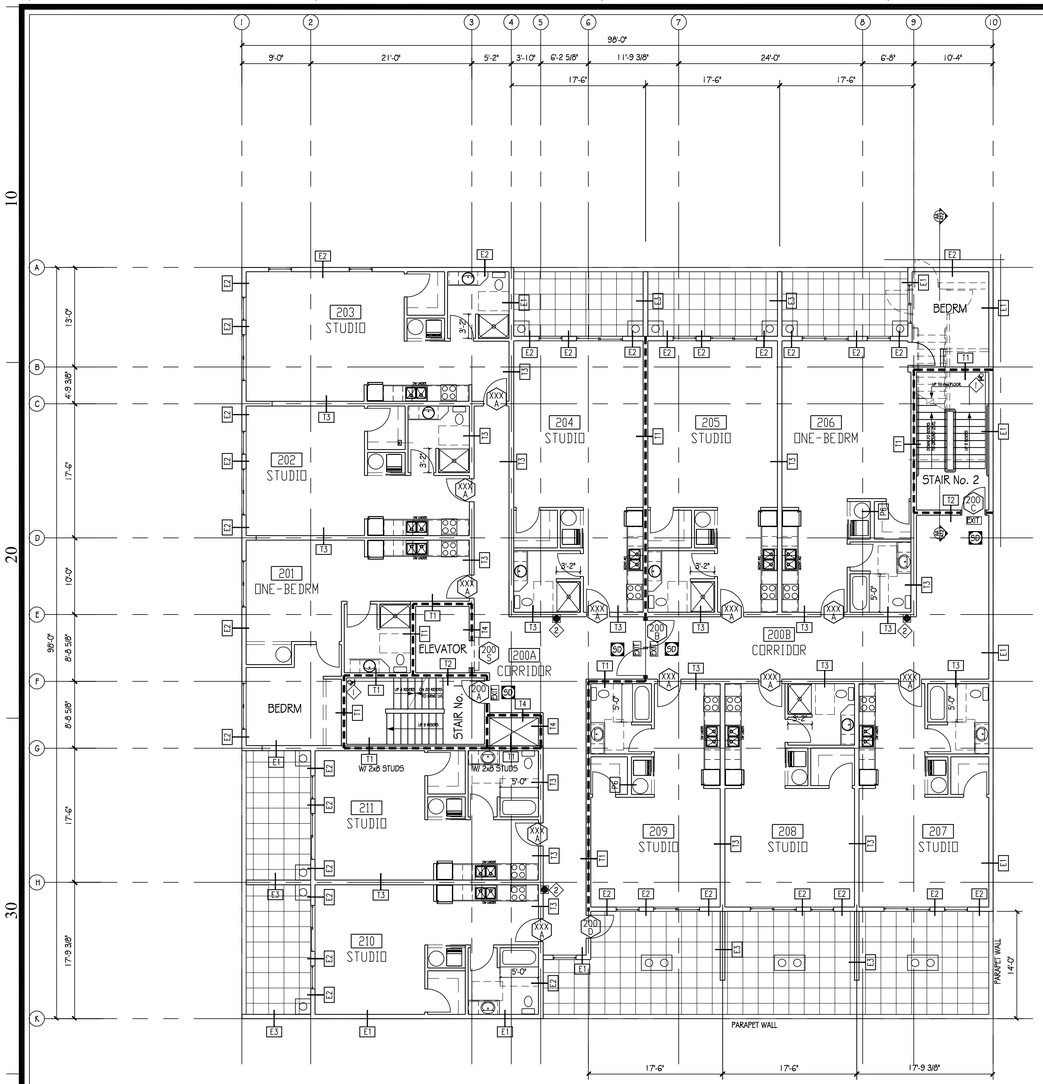
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Project Architect - Roger Axelson
360-671-1933 / E-Mail: ARAMail@Comcast.net

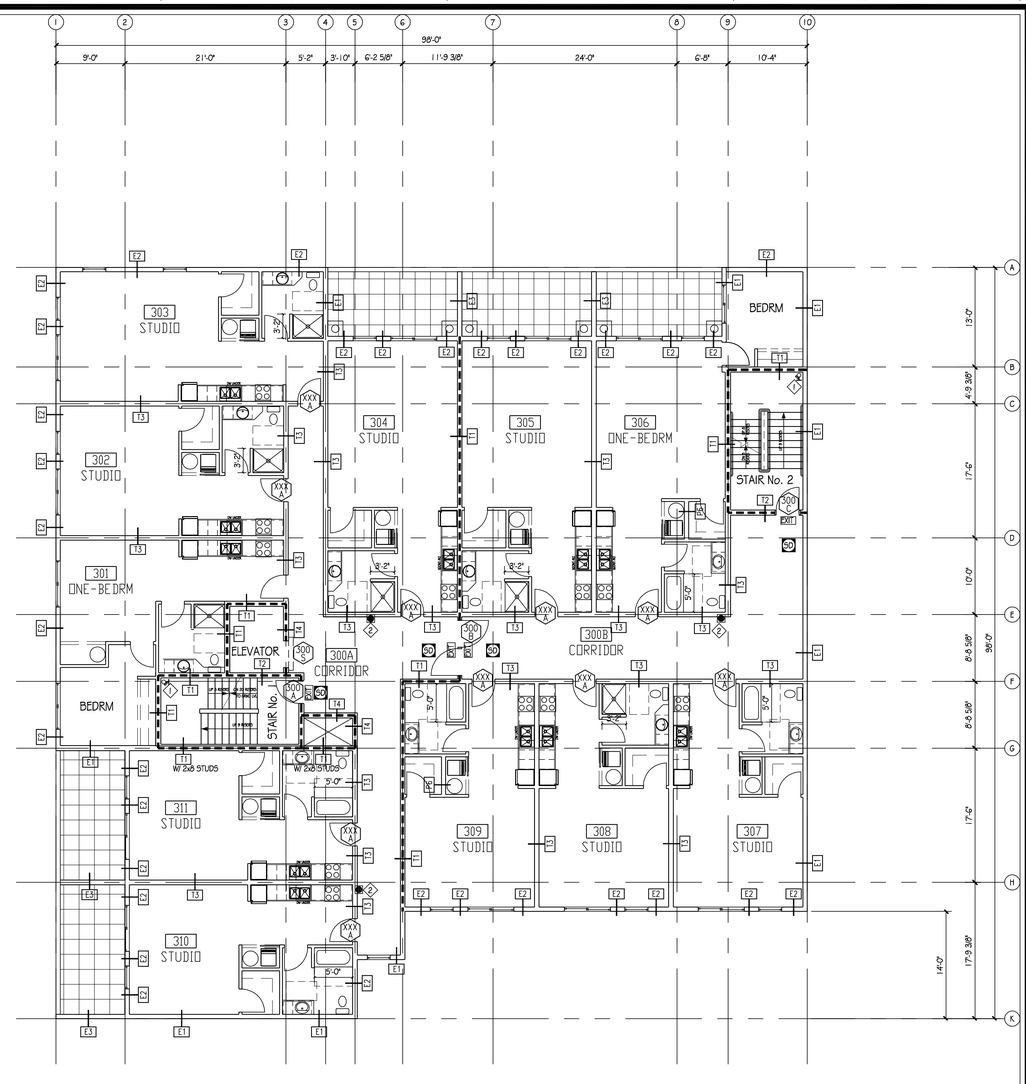
Drawing Title:
BASEMENT & 1st STORY GRND FLOOR PLANS

PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A2.1
OVERALL DRAWING SCALE: 1" = 8'-0"

PHOTO REDUCTION SCALE 0 1 INCH 2 INCHES 3 INCHES 4 INCHES





FLOOR PLAN KEYNOTES:

1. CLASS I STANDPIPE CONN
2. SEMI RECESSED FIRE EXTINGHUISHER CABT WITH 2A10BC FIRE EXTINGUISHER. PREPARE WALL RECESS TO MAINTAIN FIRE RESISTANT RATING OF WALL. CABT AS SELECTED BY OWNER. TOP OF CABT 48" ABOVE FLR.

INDICATES 2 HOUR FIRE RESISTANT WALL

(50) SMOKE DETECTOR NOT ON FIRE ALARM SYS

(50) SMOKE DETECTOR CONNECTED TO FIRE ALARM SYS. TYPICAL

EXIT INDICATES ILLUMINTAED EXIT SIGN WITH STANDBY POWER

2nd FLOOR

IBC FLOOR AREA: 8651

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

REF N

INDICATES 2 HOUR FIRE RESISTANT WALL

(50) SMOKE DETECTOR NOT ON FIRE ALARM SYS

(50) SMOKE DETECTOR CONNECTED TO FIRE ALARM SYS. TYPICAL

EXIT INDICATES ILLUMINTAED EXIT SIGN WITH STANDBY POWER

3rd FLOOR

IBC FLOOR AREA: 8651

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

REF N

REVISED 8-18-2020

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ENGINEER'S SEAL

No.	REVISION	DATE

ISSUE DATE:

HARBORSIDE APARTMENTS

1310 "C" STREET
BELLINGHAM, WA

For
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

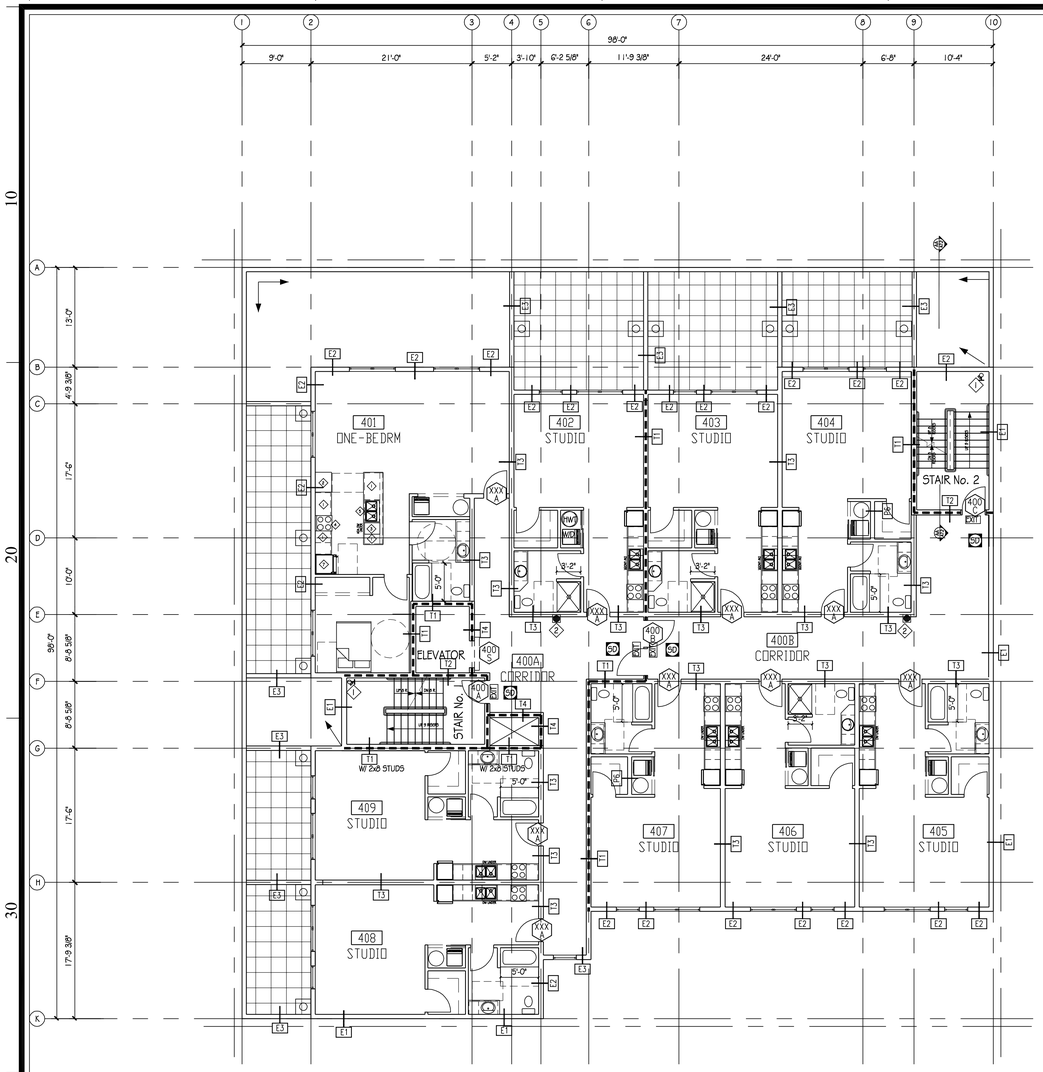
ARA Architects
Roger Axelson NCARB Certified
1313 Commercial Street, Suite 201
Bellingham, Washington 98225
Ph:360-671-0833 / E-Mail: AKMArq-Service.net
Project Architect - Roger Axelson

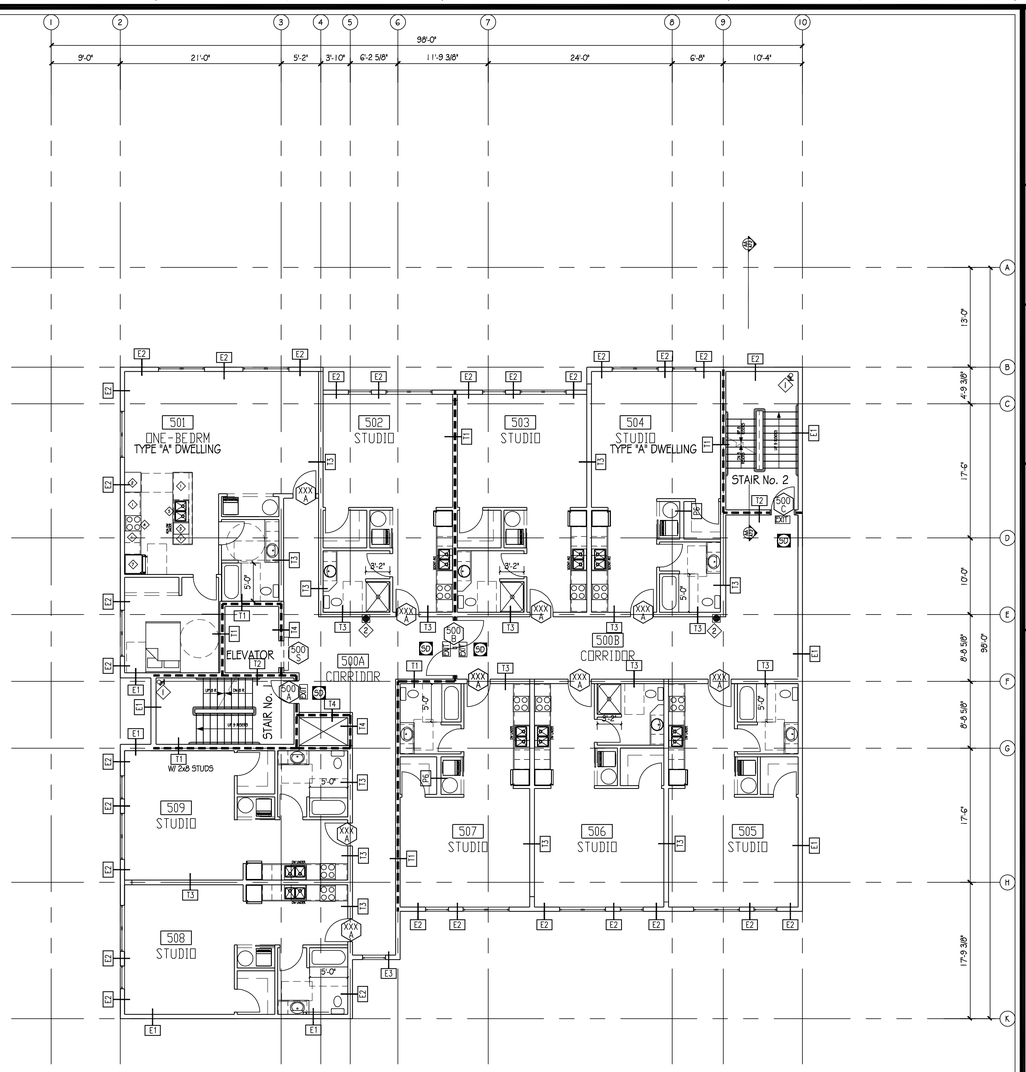
Drawing Title:
SECOND AND THIRD FLOOR PLANS

PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A2.2
OVERALL DRAWING
SCALE: 1" = 8' - 0"

PHOTO REDUCTION SCALE 0 1 INCH 2 INCHES 3 INCHES 4 INCHES





FLOOR PLAN KEYNOTES:

1. CLASS I STANDPIPE CONN
2. SEMI RECESSED FIRE EXTINGHUISHER CABT WITH 2A10BC FIRE EXTINGUISHER. PREPARE WALL RECESS TO MAINTAIN FIRE RESISTANT RATING OF WALL. CABT AS SELECTED BY OWNER, TOP OF CABT 48" ABOVE FLR.

INDICATES 2 HOUR FIRE RESISTANT WALL

(50) SMOKE DETECTOR NOT ON FIRE ALARM SYS

(50) SMOKE DETECTOR CONNECTED TO FIRE ALARM SYS. TYPICAL

EXIT INDICATES ILLUMINTAED EXIT SIGN WITH STANDBY POWER

4th FLOOR

IBC FLOOR AREA: 6437 S.F.

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

REF N

INDICATES 2 HOUR FIRE RESISTANT WALL

(50) SMOKE DETECTOR NOT ON FIRE ALARM SYS

(50) SMOKE DETECTOR CONNECTED TO FIRE ALARM SYS. TYPICAL

EXIT INDICATES ILLUMINTAED EXIT SIGN WITH STANDBY POWER

5th FLOOR

IBC FLOOR AREA: 6437 S.F.

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

REF N

REVISED 8-18-2020

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ENGINEER'S SEAL

No.	REVISION	DATE

ISSUE	DATE

HARBORSIDE APARTMENTS

1310 "C" STREET
BELLINGHAM, WA

For
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

REGISTERED ARCHITECT ROGER A. AXELSON STATE OF WASHINGTON 7200

ARA Architects
Roger Axelson NCARB Certified
1313 Commercial Street, Suite 201
Bellingham, Washington 98225
Ph:360-671-0933 / E-Mail: AKMArq-Service.net
Project Architect - Roger Axelson

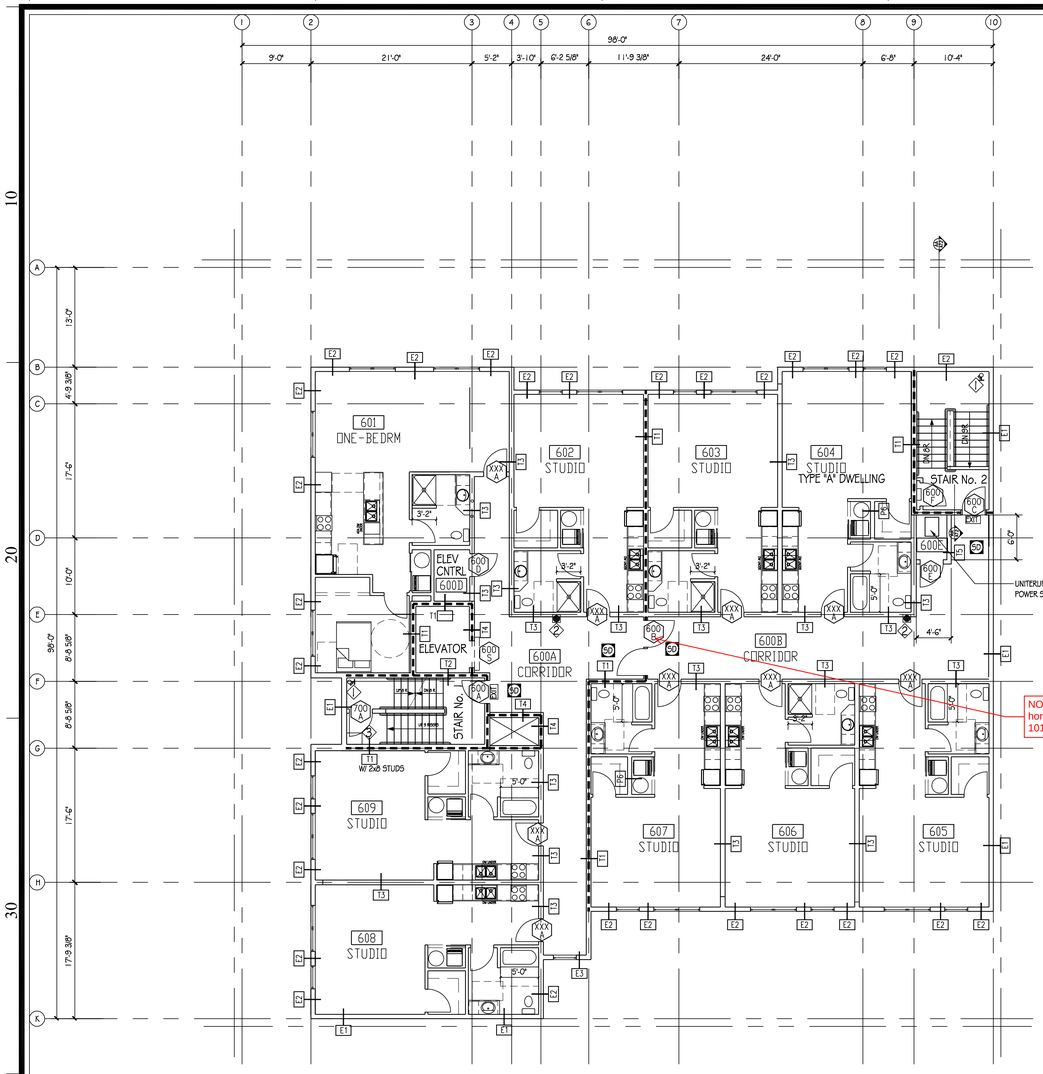
Drawing Title:
4th & 5th FLOOR PLANS

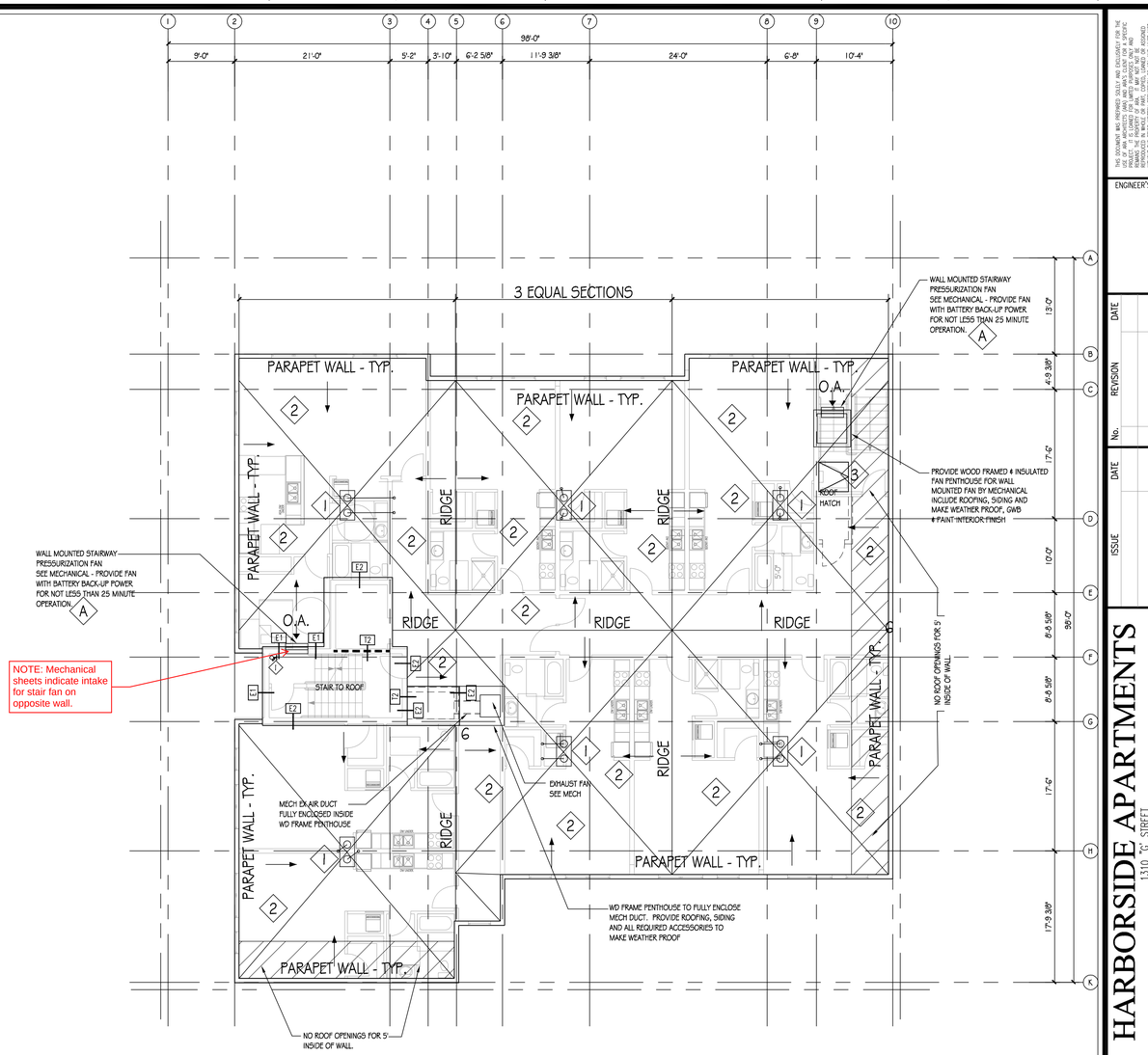
PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A2.3

OVERALL DRAWING
SCALE: 1" = 8'-0"

PHOTO REDUCTION SCALE 0 1 INCH 2 INCHES 3 INCHES 4 INCHES





INDICATES 2 HOUR FIRE RESISTANT WALL

(SD) SMOKE DETECTOR NOT ON FIRE ALARM SYS

SD SMOKE DETECTOR CONNECTED TO FIRE ALARM SYS. TYPICAL

EXIT INDICATES ILLUMINTAED EXIT SIGN WITH STANDBY POWER

6th FLOOR

IBC FLOOR AREA: 6437 S.F.

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

REF N

FLOOR PLAN KEYNOTES:

1. CLASS I STANDPIPE CONN
2. SEMI RECESSED FIRE EXTINGHUISHER CABT WITH 2A10BC FIRE EXTINGUISHER. PREPARE WALL RECESS TO MAINTAIN FIRE RESISTANT RATING OF WALL. CABT AS SELECTED BY OWNER. TOP OF CABT 48" ABOVE FLR.
3. STANDBY POWER UNIT (UNINTERUPTIBLE POWER) CONSISTING OF BATTERY, POWER INVERTER, CHARGER & CONTROL FEATURES COMPLYING WITH THE FOLLOWING: BATTERY: LITHIUM-ION ($LiFePO_4$) WITH NOT LESS THAN A 10 YEAR WARRANTEE. RUN-TIME: NOT LESS THAN 25 MINUTES USING 90% OF BATTERY CAPACITY @ 120% OF ACTUAL LOAD. UNIT TO POWER FANS FOR STAIR #1 & 2. COORDINATE WITH MECHANICAL CONTRACTOR FOR FINAL SELECTION OF STAIRWAY PRESSURIZATION FANS, VOLTAGE, SIZE AND ELECTRICAL LOAD. COMPLY WITH THE MORE RESTRICTIVE OF THE ABOVE OR IBC CODE SECTIONS 909.4.6; 2701: 2702:. MITSUBISHI MODEL 701 11B-12 KVA, 208 VOLT, SINGLE PHASE, OR BATTERY BACKUP POWER INC., MODEL #BBP-ADV-10000-PSW-ONL, 10KVA/10KW SINGLE PHASE UPS. COMPLY WITH APPLICABLE PORTIONS OF NFPA 70, 1104 & 111.

NOTE:
PROVIDE ROOF ARREST ANCHORS AS REQ'D

ROOF PLAN

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

REF N

ROOF PLAN KEYNOTES

1. ZURN Z": 8 3/8 DIAMETER COMBINATION ROOF & OVERFLOW DRAIN W/ LOW SILHOUETTE DOMES & DOUBLE TOP-SET DECK PLATE. PROVIDE DOG-LEG OFF-SET AT TOP OF VERTICAL DRAIN PIPING BEFORE CONNECTING TO ROOF DRAINS. PROVIDE SEPARATE PIPING FOR MAIN ROOF DRAIN AND OVERFLOW DRAIN UNTIL OUTSIDE OF BUILDING.
2. TAPERED / SLOPED 1/4" PER FOOT POLYISOCYANUATE ROOF INSULATION INTEGRALLY BONDED TO INORGANIC COATED GLASS FACERS. ASTM C1289, CLASS 2, GRADE 3. PROVIDE MINIMUM R10 AT ROOF DRAINS WITH 1/4" / FOOT UNIFORM SLOPE UP TO HIGH POINTS. PROVIDE TOTAL AVERAGE R VALUE ACROSS AREA OF ROOF NOT LESS THAN 15.
3. 48 x 48 BABCOCK-DAVIS THERMAL BROKE ROOF HATCH MODEL #BRHTA W/ INTERGAL CURB & BASE FLASH. PROVIDE WITH #SSPY LADDERS ACCESS SAFETY POST.
4. TPO SINGLE PLY ROOF MEMBRANE, MINIMUM CLASS "B" FIRE CLASSIFICATION. PROVIDE MANUFACTURERS RECOMMENDED FASTENERS FOR HIGH WIND INSTALLATION CONDITIONS. INSTALL MEMBRANE OVER TAPERED INSULATION COMPLYING WITH NOTE #2 ABOVE AND MANUFACTURERS RECOMMENDATIONS. EXTEND MEMBRANE UP PARAPET WALLS AND OVER TOP OF WALL, TERMINATE UNDER FLASHING ON OUTSIDE FACE OF WALLS. PROVIDE AND INSTALL PREFORMED PIPE JACKS AND FLASHINGS AS REQUIRED. COORDINATE WITH OTHER TRADES.
5. STAIR PRESSURIZATION FAN: COOLAIR "MODEL CBC30ME123, BELT DRIVE, 7000 CFM @ 0.5"Wg, 1,039 RPM, 1.13 BHP, 1,750 RPM, 208V WITH BG MWXAP S WALL HOUSING AND MOTORIZED DAMPER, OR APPROVED SUBSTITUTE. FAN TO TURN ON UPON SENSING SMOKE BY FIRE ALARM. FAN TO RUN CONTINUOUSLY FOR NOT LESS THAN 25 MINUTES. PROVIDE WITH UNINTERUPTABLE POWER BACK-UP PER KEY NOTE #3 ON 6th FLOOR PLAN. PROVIDE FAN CONFIGURED TO COMPLY WITH ALL PARTS OF IBC SECTION 909.10.5. PROVIDE FAN AT STAIRWAY #2 WITH CONTROLLED 5 SECOND DELAY START. STAIRWAY #2 FAN TO START 5 SECONDS AFTER STAIRWAY #1 FAN UPON DETECTION OF SMOKE BY FIRE ALARM SYSTEM. COORDINATE WITH ELECTRICAL BEFORE ORDERING EQUIPMENT.

REVISED 8-18-2020

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ARA Architects
Roger Axelson NCARB Certified
1313 Bay Street, Suite 202
Bellingham, Washington 98225
Ph:360-671-0933 / E-Mail: AKRAhq-Service.net
Project Architect - Roger Axelson

Drawing Title:
6th FLOOR & ROOF PLANS

PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A2.4

OVERALL DRAWING
SCALE: 1" = 8'-0"

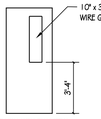
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DOOR ELEVATIONS



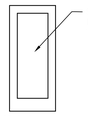
FLUSH HOLLOW METAL STEEL DOOR

DOOR #1



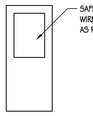
FLUSH HOLLOW METAL STEEL DOOR

DOOR #2



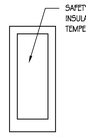
MEDIUM STYLE 4 RAIL ALUMINUM STORE FRONT DOOR W/ EXIT DEVICE

DOOR #3



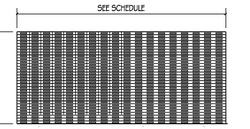
FLUSH HOLLOW METAL STEEL DOOR W/ INSULATED CORE

DOOR #4



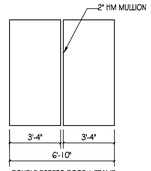
FLUSH HOLLOW METAL STEEL DOOR W/ INSULATED CORE

DOOR #5



STEEL COILING SERVICE DOOR WITH FULLY PERFORATED SLATS PERFORATIONS 10" X 1" UNIFORMLY SPACED. CONFIRM PERFORATION SELECTION WITH OWNER PRIOR TO ORDERING.

DOOR #6



DOUBLE EGRESS DOOR 4 FRAME

DOOR #7



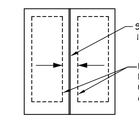
H. MTL. DOOR (APT ENTRY DOOR) STYLE 4 DESIGN AS SELECTED

DOOR #8



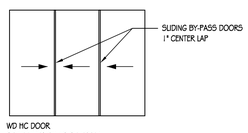
WD HC DOOR STYLE 4 DESIGN AS SELECTED

DOOR #9



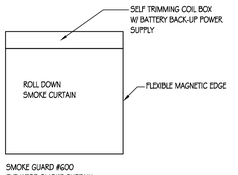
WD HC DOOR STYLE 4 DESIGN AS SELECTED

DOOR #10



WD HC DOOR STYLE 4 DESIGN AS SELECTED

DOOR #11



SMOKE GUARD #GOO ELEVATOR SMOKE CURTAIN

DOOR #12

DOOR SCHEDULE

PLAN LOCATION	DOOR ELEVATION	OPENING SIZE WIDTH	HEIGHT	THICK	DOOR CONSTR	FRAME	FINISH	THRESHOLD	CLOSER	FIRE RATING IN MINUTES	HARDWARE GROUP	NOTES
101	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	45	3	1, 2,
102	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	45	2	2,
103	2	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	45	1	2, 11,
104	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	180	1	2, 11, 450° TEMP RISE RATED
105	12	3'-10	7'-0	---	HM	HM	PAINT	NO	AUTO	NA	NA	AUTOMATIC SMOKE CURTAIN @ ELEVATOR
106	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	45	3	2,
107	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	180	1	2, 11, 450° TEMP RISE RATED
108	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	3	2, 8,
109	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	3	2, 8,
201	3	3'-0	7'-0	1 3/4	ALUM	ALUM	MFR	YES	YES	NA	4	3, 4, 11,
202	1	6'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	6	11, PROVIDE KEYED LOCKSETS THIS OPNG
203	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	45	2	
204	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	2	PROVIDE PRIVACY LOCKSET THIS OPNG
205	2	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	45	1	2, 11,
206	4	3'-0	7'-0	1 3/4	HM	HM	PAINT	YES	YES	45	3	2, KEY ACCESS MULTI TENANTS
207	1	3'-0	3'-6	1 3/4	HM	HM	PAINT	NO	NO	NA	7	LATCHING GATE W/ JAMB5 ONLY
208	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	YES	YES	180	4	11,
209	12	3'-10	7'-0	---	HM	HM	PAINT	NO	AUTO	NA	NA	AUTOMATIC SMOKE CURTAIN @ ELEVATOR
209	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	YES	YES	NA	2	4, 8, 12
612	5	3'-0	7'-0	1 3/4	HM	HM	PAINT	YES	YES	NA	2	11, FULL WEATHER STRIP ALL SIDES
615	2	3'-0	7'-0	1 3/4	HM	HM	PAINT	YES	YES	NA	2	11, FULL WEATHER STRIP ALL SIDES
616	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	YES	YES	180	1	2, 11, 450° TEMP RISE RATED
617	1	3'-0	3'-6	1 3/4	HM	HM	PAINT	NO	NO	NA	7	LATCHING GATE W/ JAMB5 ONLY
618	6	18'-0"	10'-0"	-----	STL	-----	PAINT	NO	NO	NA	NA	6, 7,
619	1	3'-0"	7'-0"	1 3/4"	HM	HM	PAINT	NO	YES	90	3	8,
620	6	10'-0"	10'-0	-----	STL	-----	PAINT	NO	NO	NA	NA	9,
621	6	18'-0"	10'-0"	-----	STL	-----	PAINT	NO	NO	NA	NA	6, 7,
200 A	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	1	11, 450° TEMP RISE RATED
200 B	7	6'-10	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	6	11, (2 SIGNS) DBL EGRESS DOORS 4 FRM
200 C	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	1	11, 450° TEMP RISE RATED
200 D	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	2	FULL WEATHER STRIP 8,
200 E	12	3'-10	7'-0	---	HM	HM	PAINT	NO	AUTO	NA	NA	AUTOMATIC SMOKE CURTAIN @ ELEVATOR
500	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	1	11, 450° TEMP RISE RATED
300 A	7	6'-10	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	6	11, (2 SIGNS) DBL EGRESS DOORS 4 FRM
500	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	YES	YES	90	1	11, 450° TEMP RISE RATED
300	12	3'-10	7'-0	---	HM	HM	PAINT	NO	AUTO	NA	NA	AUTOMATIC SMOKE CURTAIN @ ELEVATOR
400	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	1	11, 450° TEMP RISE RATED
400 A	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	1	11, 450° TEMP RISE RATED
400 B	7	6'-10	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	6	11, (2 SIGNS) DBL EGRESS DOORS 4 FRM
400 C	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	1	11, 450° TEMP RISE RATED
400 D	12	3'-10	7'-0	---	HM	HM	PAINT	NO	AUTO	NA	NA	AUTOMATIC SMOKE CURTAIN @ ELEVATOR
400 A	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	1	11, 450° TEMP RISE RATED
400 B	7	6'-10	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	6	11, (2 SIGNS) DBL EGRESS DOORS 4 FRM
400 C	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	90	1	11, 450° TEMP RISE RATED
400 D	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	45	2	SECURITY DOOR 8,
400 E	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	45	2	SECURITY DOOR 8,
400 F	12	3'-10	7'-0	---	HM	HM	PAINT	NO	AUTO	NA	NA	AUTOMATIC SMOKE CURTAIN @ ELEVATOR
ROOF LEVEL C	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	NO	NA	2	INTERNAL SECURITY 8,
ROOF LEVEL B	1	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	YES	NA	2	4 SIDED FRAME W/ WEATHER STRIP. 8,
XXX A	8	3'-0	7'-0	1 3/4	HM	HM	PAINT	NO	NO	20	8	ENTRY FUNCTION
XXX B	9	3'-0	6'-8	1 3/8	WD	WD	PAINT	NO	NO	NA	9	PASSAGE FUNCTION
XXX C	9	3'-0	6'-8	1 3/8	WD	WD	PAINT	NO	NO	NA	10	PRIVACY FUNCTION
XXX D	10	3'-11	6'-8	1 3/8	WD	WD	PAINT	NO	NO	NA	11	BI-PASS SLIDING CLOSET DOOR
XXX E	10	4'-11	6'-8	1 3/8	WD	WD	PAINT	NO	NO	NA	11	BI-PASS SLIDING CLOSET DOOR
XXX F	10	5'-11	6'-8	1 3/8	WD	WD	PAINT	NO	NO	NA	11	BI-PASS SLIDING CLOSET DOOR
XXX G	10	6'-11	6'-8	1 3/4	WD	WD	PAINT	NO	NO	NA	11	BI-PASS SLIDING CLOSET DOOR (2-3-6)
XXX H	11	7'-4	6'-8	1 3/8	WD	WD	PAINT	NO	NO	NA	12	TRIPLE BI-PASS SLIDING CLOSET DOOR (3-3-6)
XXX	11	8'-10	6'-8	1 3/8	WD	WD	PAINT	NO	NO	NA	12	TRIPLE BI-PASS SLIDING

DOOR NOTES

DOORS LOCATED IN COMMON / PUBLIC SPACE

(BOT) OPENING LOCATION SEE PLAN

INDIVIDUAL APARTMENT DOORS "XXX" NUMBER TO BE USED FOR IDENTIFYING APARTMENT FOR DELIVERY OF HARDWARE TO JOB SITE

(XXX B) APARTMENT # TO BE FILLED IN BY HARDWARE SUPPLIER

DOOR TYPE SEE SCHEDULE

NOTE: BEFORE DELIVERY TO JOB-SITE PACKAGE ALL HARDWARE FOR EACH OPENING AND LABEL WITH OPENING NUMBER. ALSO PACKAGE ALL HARDWARE GROUPS FOR EACH APARTMENT TOGETHER AND LABEL WITH APARTMENT NUMBER. ALL LOCKSETS 4 PASSAGE SETS LEVER OPERATED.

HARDWARE FINISHES AS SELECTED BY OWNER

1. PROVIDE EXIT DEVICE WITH RIM STRIKE.
2. PROVIDE DOOR FRAME WITH 4" HEAD TO SUIT MASONRY MODULES.
3. PROVIDE ELECTRIC HINGE 4 ELECT. EXIT DEVICE ALONG WITH MAGNETIC LOCK. LOCK ACTIVATED BY ELECTRONIC CALL BOX OR KEY.
4. FULLY WEATHER STRIP DOOR.
5. PROVIDE FULL SET OF SMOKE GASKETS.
6. FULLY PERFORATED COILING SERVICE DOOR. OVERHEAD SERIES G10 DOOR WITH 10'X 1" PERFORATIONS.
7. PROVIDE ELECTRIC SIDE MOUNTED OPERATER, WITH SUITABLE MULTI-TENANT OPENING DEVICES AS SELECTED BY OWNER. PROVIDE BACK-UP CHAIN OPERATOR AND TAPERED BOTTOM BAR TO COMPENSATE FOR CROSS SLOPE ON FLOOR. PROVIDE PRESSURE SENSITIVE SAFETY DEVICES TO PREVENT INJURY WHEN CLOSING.
8. KEY OPERATED LOCKSET. ACCESS BY SERVICE KEY ONLY.
9. PROVIDE TAPERED BOTTOM BAR TO COMPENSATE FOR CROSS SLOPE ON FLOOR. PROVIDE CHAIN RIGHT SIDE OPERATOR FOR MANUAL OPERATION.
10. PROVIDE PREFINISHED FOLDING WOOD PARTITION, COMPLETE WITH TRACK, NYLON WHEELED BALL BEARING TRUCKS AND ALL REQUIRED HARDWARE TO SUIT. ALL AS SELECTED BY OWNER.
11. PROVIDE RAISED CHARACTER AND BRAILLE EXIT SIGNS ADJACENT TO THE STRIKE JAMB OF ALL EXIT DOORS, DOORS TO STAIRS, EXIT PASSAGEWAYS, HORIZONTAL EXITS AND EXTERIOR DOORS. COMPLY WITH ANSI A117.1, MOUNT SIGNS BETWEEN 4'-0" TO 5'-0" ABOVE FINISH FLOOR.
12. PROVIDE SIGN ON EXTERIOR FACE OF DOOR READING "FIRE SPRINKLER 4 FIRE ALARM CONTROL" 1" HIGH LETTERS ON RED BACKGROUND.

HARDWARE GROUPS

PROVIDE BEARING BUTT HINGES FOR ALL DOORS EQUIPPED WITH DOOR CLOSERS.

GENERAL NOTE APPLICABLE TO ALL OPENINGS WITH A FIRE RESISTANCE RATING: PROVIDE EA OPENING WITH A FULL SET OF SMOKE GASKETS.

GROUP #1
1 EA MORTISE PASSAGE SET
3 EA BUTT HINGES
1 EA KICK PLATE
1 SET SMOKE GASKETS
1 EA DOOR STOP (TO SUIT CONDITION OF INSTALL)

GROUP #2
1 EA MORTISE LOCKSET
3 EA BUTT HINGES
1 EA DOOR STOP (TO SUIT CONDITION OF INSTALL)

GROUP #3
1 EA EXIT DEVICE - RIM STRIKE
3 EA BEARING BUTT HINGES
1 SET SMOKE GASKETS
1 EA DOOR STOP (TO SUIT CONDITION OF INSTALL)

GROUP #4
1 EA EXIT DEVICE - RIM STRIKE
3 EA BEARING BUTT HINGES
1 EA KICK PLATE
1 EA DOOR STOP (TO SUIT CONDITION OF INSTALL)

GROUP #5
1 EA MORTISE PASSAGE SET
3 EA BUTT HINGES
1 EA DEAD BOLT-KEY ONE SIDE, THUMB TURN OTHER SIDE
1 EA KICK PLATE
1 SET SMOKE GASKETS
1 EA DOOR STOP (TO SUIT CONDITION OF INSTALL)

GROUP #6
2 EA MORTISE PASSAGE SET
6 EA BUTT HINGES
2 EA ELECTRO MAGNETIC HOLD OPEN - TRIGGERED BY SMOKE DECTECTORS
2 EA KICK PLATE
2 SET SMOKE GASKETS
2 EA DOOR STOP (TO SUIT CONDITION OF INSTALL)
2 EA ROD ACTUATED EXIT DEVICES WITH RECESSED FLOOR 4 HEAD STRIKES

NOTE: AT OPENING #102 PROVIDE FIRE RATED ASTRAGAL AND DOOR COORDINATOR.

GROUP #7
1 EA MORTISE PASSAGE SET
2 EA SPRING LOADED BUTT HINGES
1 EA WALL MOUNTED DOOR STOP
JAMB MTD RUBBER BUMPERS

GROUP #8
1 EA CYLINDRICAL LOCKSET
3 EA SPRING LOADED BUTT HINGES
1 EA 180° DOOR PEEP HOLE VIEWER
1 SET SMOKE GASKETS
1 EA DOOR STOP (TO SUIT CONDITION OF INSTALL)

GROUP #9
1 EA CYLINDRICAL PASSAGE SET
3 EA BUTT HINGES
1 EA DOOR STOP (TO SUIT CONDITION OF INSTALL)

GROUP #10
1 EA CYLINDRICAL PRIVACY SET
3 EA BUTT HINGES
1 EA DOOR STOP (TO SUIT CONDITION OF INSTALL)

GROUP #11
1 EA DUAL SLIDING DOOR TRACK (LENGTH TO SUIT OPNG)
4 EA NYLON WHEELED CARRIER TRUCKS
1 EA CENTER DOOR GUIDE
2 EA RECESSED FLUSH FINGER PULLS
2 EA RUBBER DOOR BUMPERS

GROUP #12
1 EA DUAL SLIDING DOOR TRACK (LENGTH TO SUIT OPNG)
6 EA NYLON WHEELED CARRIER TRUCKS
2 EA CENTER DOOR GUIDE
4 EA RECESSED FLUSH FINGER PULLS
2 EA RUBBER DOOR BUMPERS

TYPICAL WALL ASSEMBLIES

W1 PLAN INDICATOR
ONE-HOUR FIRE RATED (EXP BOTH SIDES)
ESR-1365 SECTION 4.3.4
INSULATION: R-21
"U" VALUE: 0.050
EXTERIOR SIDE / INTERIOR SIDE — 6 3/4"

EXTERIOR WEATHER CLADDING: PREFINISHED METAL PANELS OR HARDIE BD.
TYVEC COMMERCIAL GRADE AIR 4 WATER INFILTARTION BARRIER
FIRE RATED OSB SHEATHING THICKNESS PER STRUCTURAL WITH PYROTITE LAMINATE FACING INSTALL IN ACCORDANCE WITH ESR-1365. PANELS MUST BE VERTICAL WITH ALL HORIZ JOINTS BLOCKED.
WOOD STUDS: MINIMUM 2x6 @ 16" O.C. SEE STRUCTURAL FOR STUD REQUIRMENT
MINERAL FIBER BATT INSULATION MINIMUM 5 1/2" THICK (R-21)
CONTINUOUS VAPOR BARRIER OVER INSIDE FACE OF STUDS AND INSULATION
5/8" TYPE "X" GYPSUM BOARD APPLIED VERTICALLY WITH HORIZ JOINTS BLOCKED.
NOTE: INSTALL ALL MATERIALS IN STRICT ACCORD WITH ESR-1365 SECTION 4.3.4

W2 PLAN INDICATOR
ONE-HOUR FIRE RATED (FIRE EXP INSIDE ONLY)
IBC TABLE 721.1(2) ITEM 16-1.2
INSULATION: R-21
"U" VALUE: 0.050
EXTERIOR SIDE / INTERIOR SIDE — 6 3/4"

EXTERIOR WEATHER CLADDING: PREFINISHED METAL PANELS
TYVEC COMMERCIAL GRADE AIR 4 WATER INFILTARTION BARRIER
OSB SHEATHING THICKNESS PER STRUCTURAL
WOOD STUDS: MINIMUM 2x6 @ 16" O.C. SEE STRUCTURAL FOR STUD REQUIRMENT
MINERAL FIBER BATT INSULATION MINIMUM 5 1/2" THICK (R-21)
CONTINUOUS VAPOR BARRIER OVER INSIDE FACE OF STUDS AND INSULATION
5/8" TYPE "X" GYPSUM BOARD

W3 PLAN INDICATOR
ONE-HOUR FIRE RATED (EXP BOTH SIDES)
ESR-1365 SECTION 4.3.4
EXTERIOR SIDE / INTERIOR SIDE — 7 3/8"

EXTERIOR WEATHER CLADDING: PREFINISHED METAL PANELS OR HARDIE BD.
TYVEC COMMERCIAL GRADE AIR 4 WATER INFILTARTION BARRIER
FIRE RATED OSB SHEATHING THICKNESS PER STRUCTURAL WITH PYROTITE LAMINATE FACING INSTALL IN ACCORDANCE WITH ESR-1365. PANELS MUST BE VERTICAL WITH ALL HORIZ JOINTS BLOCKED.
WOOD STUDS: MINIMUM 2x6 @ 16" O.C. SEE STRUCTURAL FOR STUD REQUIRMENT
FIRE RATED OSB SHEATHING THICKNESS PER STRUCTURAL WITH PYROTITE LAMINATE FACING INSTALL IN ACCORDANCE WITH ESR-1365. PANELS MUST BE VERTICAL WITH ALL HORIZ JOINTS BLOCKED.
TYVEC COMMERCIAL GRADE AIR 4 WATER INFILTARTION BARRIER
EXTERIOR WEATHER CLADDING: PREFINISHED METAL PANELS OR HARDIE BD.

W4 PLAN INDICATOR
ONE-HOUR FIRE RATED (FIRE EXP INSIDE ONLY)
IBC TABLE 721.1(2) ITEM 16-1.2 PLUS ITEM 1-1.1
INSULATION: R-21
"U" VALUE: 0.050
9 GA JOINT REINF WIRE 16" O.C. VERTICALLY; 22 GA GALV CORR MTL BRICK TIES @ 16" O.C. HORIZ 4 VERT- BEND TIES 180° AROUND JT WIRE
PACK MORTAR AROUND TIE TYPICAL
10d COM NAIL TO SECURE CORR TIE TO WALL @ STUDS
EXTERIOR SIDE / INTERIOR SIDE — 6 3/4"

NOMINAL 4" THICK BRICK VENEER
TYVEC COMMERCIAL GRADE AIR 4 WATER INFILTARTION BARRIER
OSB SHEATHING THICKNESS PER STRUCTURAL
WOOD STUDS: MINIMUM 2x6 @ 16" O.C. SEE STRUCTURAL FOR STUD REQUIRMENT
MINERAL FIBER BATT INSULATION MINIMUM 5 1/2" THICK (R-21)
CONTINUOUS VAPOR BARRIER OVER INSIDE FACE OF STUDS AND INSULATION
5/8" TYPE "X" GYPSUM BOARD

W5 PLAN INDICATOR
TWO-HOUR FIRE RATED - UL U334
SOUND RATED STC: 58 TEST USG-810219
SHAFT OR COMMON SPACE SIDE / APARTMENT SIDE — 8 1/2"

2 LAYERS 5/8" TYPE "X" GYPSUM BOARD
WOOD STUDS: MINIMUM 2x6 @ 16" O.C. SEE STRUCTURAL FOR STUD REQUIRMENT
MINERAL WOOL SOUND BATT INSULATION MINIMUM 2" THICK
25 GA RESILIENT CHANNELS @ 24" O.C.
2 LAYERS 5/8" TYPE "X" GYPSUM BOARD

W6 PLAN INDICATOR
TWO-HOUR FIRE RATED - GA #WP 4136
SOUND RATED STC: 40 to 44
SHAFT SIDE / COMMON SPACE SIDE — 8"

2 LAYERS 5/8" TYPE "X" GYPSUM BOARD
WOOD STUDS: MINIMUM 2x6 @ 16" O.C. SEE STRUCTURAL FOR STUD REQUIRMENT
2 LAYERS 5/8" TYPE "X" GYPSUM BOARD

W7 PLAN INDICATOR
ONE-HOUR FIRE RATED - GA #WP 3260
SOUND RATED STC: 50 to 54
APARTMENT OR COMMON SPACE SIDE / APARTMENT SIDE — 7 1/4"

ONE LAYER 5/8" TYPE "X" GYPSUM BOARD APPLIED WITH LAMINATING COMPOUND
1/4" GYPSUM BOARD
WOOD STUDS: MINIMUM 2x6 @ 16" O.C. SEE STRUCTURAL FOR STUD REQUIRMENT
1 1/2 THICK, 0.8 pcf FIBERGLAS ACOUST INSULATION
1/4" GYPSUM BOARD
ONE LAYER 5/8" TYPE "X" GYPSUM BOARD APPLIED WITH LAMINATING COMPOUND

W8 PLAN INDICATOR
TWO-HOUR FIRE RATED - GA #WP 7051
SOUND RATED STC: 50 to 54
SHAFT SIDE / HALLWAY OR OCCUPIED SIDE

1"x 24" TYPE "X" SHAFT LINER GYP BD.
6" C-T STUDS @ 2'-0" O.C.
R-21 FIBERGLAS BATT INSUL
CONTINUOUS VAPOR BARRIER
BASE LAYER 1/2" TYPE "X" GYP BD APPLIED ACROSS STUDS W/ 1" TYPE S DRYWALL SCREWS 24" O.C.
FACE LAYER 1/2" TYPE "X" GYP BD APPLIED PARRALLEL TO STUDS W/ 1 5/8" TYPE S DRYWALL SBREWS 12" O.C.

W9 PLAN INDICATOR
ONE- HOUR FIRE RATED PER IBC 722.6
5/8" TYPE "X" GYPSUM BOARD EACH SIDE 2x6 STUDS @ 16" O.C.
6 3/4"

HORIZONTAL ASSEMBLIES

W1 PLAN INDICATOR
FOUR-HOUR FIRE RATED (EXP BOTH SIDES)
IBC TABLE 721.1(2) ITEM 3-1.4

8" THICK SOILD LIGHT WGT REINFORCED CONCRETE UNIT MASONRY (CMU)-SEE STRUCTURAL
ALL CELLS NOT REINFORCED AND GROUTED ARE TO BE FILLED WITH GROUT, PERLITE OR OTHER APPROVED MATERIAL.

W2 PLAN INDICATOR
FOUR-HOUR FIRE RATED (EXP BOTH SIDES)
IBC TABLE 721.1(2) ITEM 3-1.4
SEE PLAN FOR SIDE FURRING IS LOCATED ON

8" THICK SOILD LIGHT WGT REINFORCED CONCRETE UNIT MASONRY (CMU)-SEE STRUCTURAL
ALL CELLS NOT REINFORCED AND GROUTED ARE TO BE FILLED WITH GROUT, PERLITE OR OTHER APPROVED MATERIAL
FIRE RETARDANT TRTD WOOD FURRING: MINIMUM 2x6 @ 16" O.C.
MINERAL FIBER BATT INSULATION MINIMUM 5 1/2" THICK (R-21)
CONTINUOUS VAPOR BARRIER OVER INSIDE FACE OF FURRING AND INSULATION
5/8" TYPE "X" GYPSUM BOARD

W3 PLAN INDICATOR
THREE-HOUR FIRE RATED (EXP BOTH SIDES)
IBC TABLE 721.1(2) ITEM 4-1.1

8" OR 10" THICK SOILD POURED IN-PLACE REINFORCED CONCRETE-SEE STRUCTURAL

W4 PLAN INDICATOR
THREE-HOUR FIRE RATED (EXP BOTH SIDES)
IBC TABLE 721.1(2) ITEM #1-1.1
FURRING 4 INSULATION ADDED TO ITEM
INSULATION: R-21
"U" VALUE: 0.050
SEE PLAN FOR SIDE FURRING IS LOCATED ON

8" OR 10" THICK SOILD POURED IN-PLACE REINFORCED CONCRETE-SEE STRUCTURAL
FIRE RETARDANT TRTD WOOD FURRING: MINIMUM 2x6 @ 16" O.C.
MINERAL FIBER BATT INSULATION MINIMUM 5 1/2" THICK (R-21)
CONTINUOUS VAPOR BARRIER OVER INSIDE FACE OF FURRING AND INSULATION
5/8" TYPE "X" GYPSUM BOARD

W5 PLAN INDICATOR
FOUR-HOUR FIRE RATED (EXP BOTH SIDES)
IBC TABLE 721.1(2) ITEM 4-1.1
9 GA JOINT REINF WIRE 16" O.C. VERTICALLY; 22 GA GALV CORR MTL BRICK TIES @ 16" O.C. HORIZ 4 VERT- BEND TIES 180° AROUND JT WIRE
PACK MORTAR AROUND TIE TYPICAL
RAMSET FASTNER TO SECURE CORR TIE T WALL
FURRING 4 INSUL MAY OR MAY NOT OCCUR EA LOCATION. SEE PLAN
FIRE RETARDANT TRTD 2x6 FURRING 16" O.C.

BRICK VENEER (ANCHORED)
1 1/2" ± AIR SPACE
CONT TYVEC AIR / WATER BARRIER
8" OR 10" THICK SOILD POURED IN-PLACE REINFORCED CONCRETE-SEE STRUCTURAL

W6 PLAN INDICATOR
ONE-FIRE RATED
PROVIDE THROUGH PENTRATION FIRESTOP FOR ALL PENETRATIONS THROUGH WALL PLATES ("T" RATING NOT REQUIRED) TYPICAL
4 1/2" / 3" / 1/2" / 3"
TYPICAL WALL INSIDE APARTMENTS

1/2" TYPE "X" GYPSUM BOARD EACH SIDE
2x4 STUDS @ 16" O.C. FOR TYPE "P4"
2x6 STUDS @ 16" O.C. FOR TYPE "P6"

NOTE:
PROVIDE FIRE RETARDANT TREATED WOOD FOR ALL WOOD INSTALLED BELOW 2nd FLOOR CONCRETE SLAB, ELEVATION 58.58.

PROVIDE R-21 BATT INSULATION IN ALL FRAME WALLS SURROUNDING STAIR SHAFTS, AIR SHAFTS AND ELEVATOR. INSULATE ALL EXTERIOR WALLS.

APARTMENTS 1st FLOOR

FOUR-HOUR FIRE RATED
IBC TABLE 721.1(3) ITEM 1-1.1
INSULATION ADDED TO ITEM
INSULATION: R-30
"U" VALUE: 0.031
GROUND FLOOR PARKING GARAGE

FINISH FLOOR COVERING TO SUIT
1 1/4" GYP-CRETE 2000 WITH ACOUSTI-MAT
3/4" OSB SUBFLOOR SEE STRUCTURAL
CONTINUOUS VAPOR BARRIER OVER INSIDE FACE OF SLEEPERS AND INSULATION
PRESSURE TRTD 2x10 SLEEPERS @ 2'-0" O.C.
MINERAL FIBER BATT INSULATION MINIMUM (R-30)
12" THICK SOILD POURED IN-PLACE REINFORCED CONCRETE-SEE STRUCTURAL

FC-1 FLOOR / CEILING SEPARATING APARTMENTS FROM PARKING GARAGE

ONE-HOUR FIRE RATED - UL L570
SOUND RATED STC: 63 WITH VINYL PLANK FLOORING
INSULATION: FIBERGALSS SOUND BATTS

FINISH FLOOR COVERING TO SUIT
1 1/4" GYP-CRETE 2000 WITH ACOUSTI-MAT
3/4" OSB SUBFLOOR SEE STRUCTURAL
TJI FLOOR JOISTS - SEE STRUCTURAL
3 1/2" THICK FIBERGLASS ACOUSTIC BATT INSULATION
25 GA RESILIENT CHANNELS @ 16" O.C.
2 LAYERS 5/8" TYPE "X" GYPSUM BOARD

FC-2 TYPICAL FLOOR / CEILING SEPARATING RESIDENTIAL FLOORS

1 3/4" ARCH PAVER SLABS - MUTUAL MATERIALS
PEDESTAL SLAB SUPPORT SYSTEM - MUTUAL MATERIALS
TPO CLASS "B" MEMBRANE ROOF (GREY COLOR)
TAPERED INSULATION OR CONCRETE TOPPING
AT OWNERS OPTION, MIN 2" 4 MAX 4 1/2" THICK
SLOPED 1/4" PER FT TO DRAINS.
CONCRETE SLAB SEE STRUCT

FC-3 TYPICAL FLOOR / CEILING SEPARATING EXT PATIOS / DECKS FROM GROUND FLR PARKING

1 3/4" ARCH PAVER SLABS - MUTUAL MATERIALS
PEDESTAL SLAB SUPPORT SYSTEM - MUTUAL MATERIALS
TPO CLASS "B" MEMBRANE ROOF (GREY COLOR)
TAPERED POLYISO INSULATION 1/4" PER FT SLOPE MINIMUM 2" (R-10) TO MAX 4 1/2" THICK SLOPED TO DRAINS.
5/8" EXT FLOOR SHTG UNDERLAY
3/4" FLOOR SHTG SEE STRUCT
2x10 JSTS @ SEE STRUCT
WHEN HEATED SPACE IS BELOW: PROVIDE NOT LESS THAN R30 BATT INSUL
2 LAYERS 5/8" TYPE "X" MOISTURE RESISTANT GYP BD @ EXTERIOR APPLICATIONS

FC-4 TYPICAL FLOOR / CEILING AT WOOD FRAME EXTERIOR PATIO'S / DECKS - 3rd & 4th FLOORS

REFER TO ESR-2540, PAGE 3, ITEM 4.3, FOR FC-4 (FIGURE 8)

ONE-HOUR FIRE RATED
IBC TABLE 721.1(3) ITEM #13-1.4
AS MODIFIED BY ESR-2540

FINISH FLOOR COVERING TO SUIT
1 1/4" GYP-CRETE 2000 WITH ACOUSTI-MAT
3/4" OSB SUBFLOOR SEE STRUCTURAL
FLOOR JOISTS - SEE STRUCTURAL MINIMUM 2x10 @ 16" O.C.
5/8" TYPE "X" GYPSUM BOARD

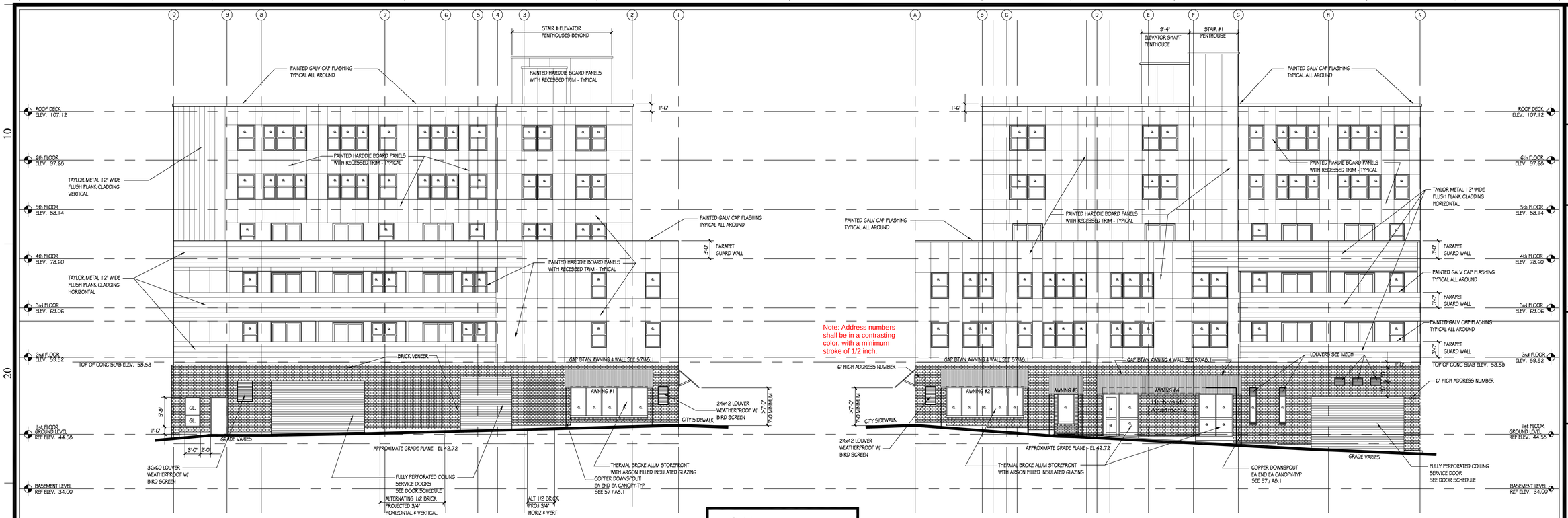
FC-5 TYPICAL FLOOR / CEILING AT STAIR LANDINGS

ONE-HOUR FIRE RATED
ESR-1153 - ASSEMBLY "B"

SLOPED CROSS STRAPPED ROOF
SPRAY CLOSED SELL INSUL 2 1/2" R-17 MINIMUM
INSULATION: FIBERGLASS BATT R-38
CLASS "B" TPO MEMBRANE ROOF (GREY COLOR)
5/8" MINIMUM OSB SHEATHING - SEE STRUCTURAL
TAPERED CROSS STRAPPING 1/4" / FT SLOPE AS REQD
5/8" MINIMUM OSB SHEATHING - SEE STRUCTURAL
2 1/2" MIN SPRAY CLOSED CELL FOAM INSUL R 17 MIN
TJI ROOF JOISTS - SEE STRUCTURAL
R-38 FIBERGLASS BATT INSULATION INSTALL TIGHT TO ROOF DECK.
2 LAYERS 5/8" TYPE "X" GYPSUM BOARD
NOTE: DO NOT INSTALL A VAPOR BARRIER ON WARM SIDE OF INSULATION

FC-6 TYPICAL ROOF / CEILING

REVISED 8-18-2



NORTH ELEVATION

ASTOR STREET

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

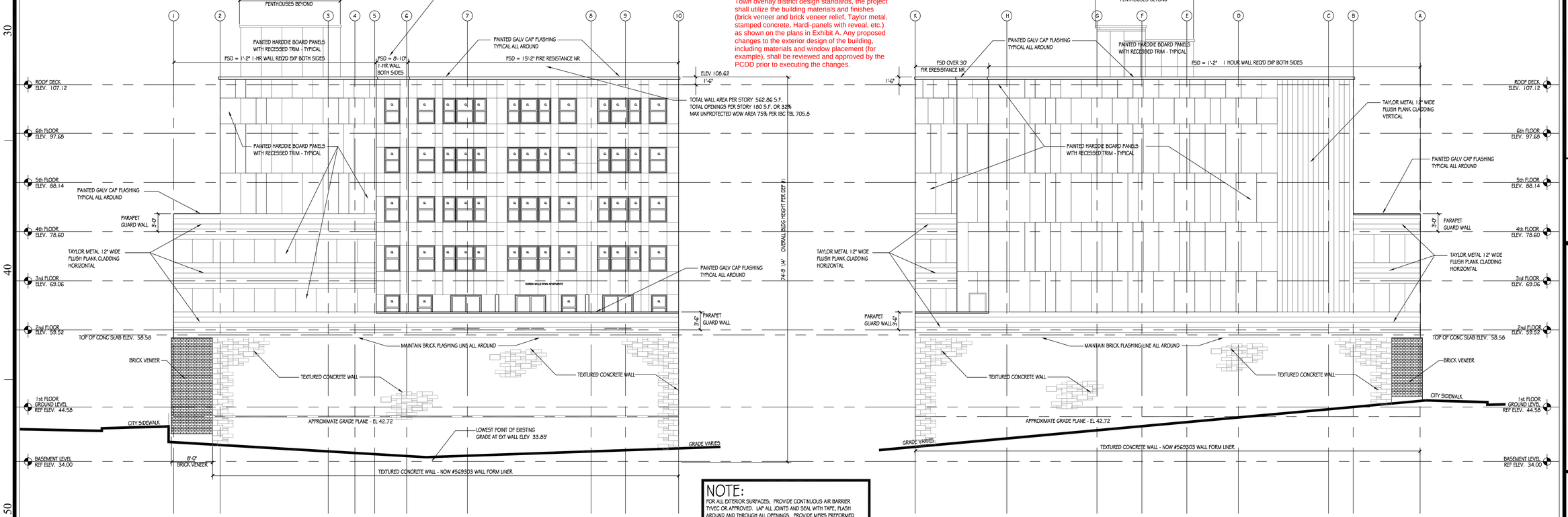
WEST ELEVATION

"G" STREET

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

NOTE:
PROVIDE AND INSTALL 1/2" MESH BIRD SCREEN AT ALL EXTERIOR LOUVERS

NOTE: In order to comply with the CCDS and Old Town overlay district design standards, the project shall utilize the building materials and finishes (brick veneer and brick veneer relief, Taylor metal, stamped concrete, Hardi-panels with reveal, etc.) as shown on the plans in Exhibit A. Any proposed changes to the exterior design of the building, including materials and window placement (for example), shall be reviewed and approved by the PCDD prior to executing the changes.



SOUTH ELEVATION

HOLLY STREET

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

NOTE:
FOR ALL EXTERIOR SURFACES; PROVIDE CONTINUOUS AIR BARRIER TYVEC OR APPROVED. LAP ALL JOINTS AND SEAL WITH TAPE, FLASH AROUND AND THROUGH ALL OPENINGS. PROVIDE MFRS PREFORMED CORNERS TO MAINTAIN TIGHT ENCLOUSURE AROUND PENETRATIONS. TYPICAL

EAST ELEVATION

"F" STREET

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

REVISED 7-16-2020

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ENGINEER'S SEAL

No.	REVISION	DATE

ISSUE DATE

HARBORSIDE APARTMENTS

1310 "G" STREET
BELLINGHAM, WA

For
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

REGISTERED ARCHITECT ROGER A. AXELSON BELLINGHAM WASHINGTON

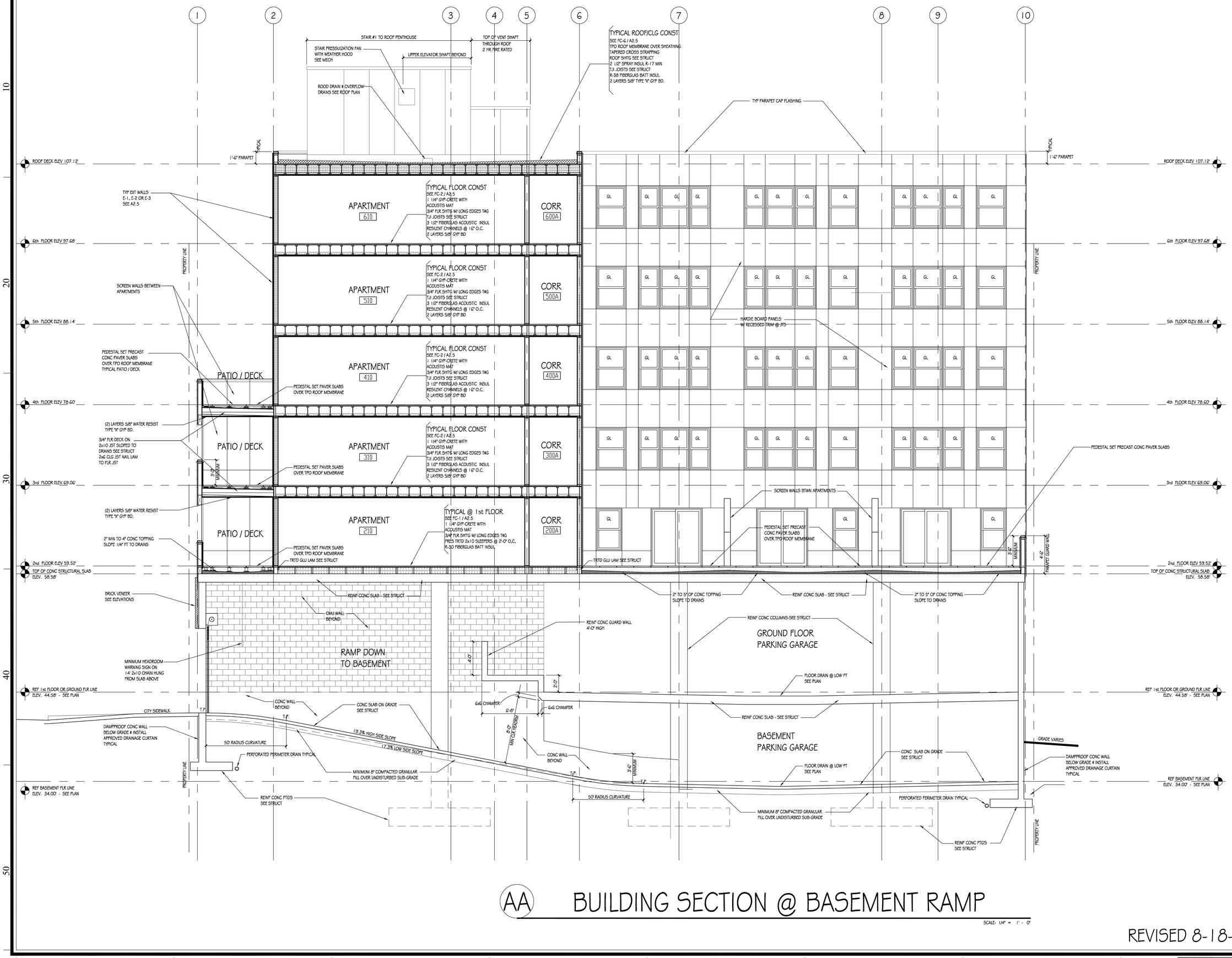
ARA Architects
Roger Axelson NCARB Certified
215 Commercial Suite 210
Bellingham, Washington 98225
Project Architect - Roger Axelson
PH:360-671-1933 / E-Mail: ARAMail-Services.net

Drawing Title:
BUILDING ELEVATIONS

PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A3.1
OVERALL DRAWING SCALE: 1" = 8'-0"

PHOTO REDUCTION SCALE
0 1 INCH 2 INCHES 3 INCHES 4 INCHES



AA BUILDING SECTION @ BASEMENT RAMP

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

REVISED 8-18-2020

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ENGINEER'S SEAL

No.	REVISION	DATE

ISSUE	DATE

HARBORSIDE APARTMENTS
1310 "G" STREET
BELLINGHAM, WA
For
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

REGISTERED ARCHITECT ROGER W. AXELSON STATE OF WASHINGTON

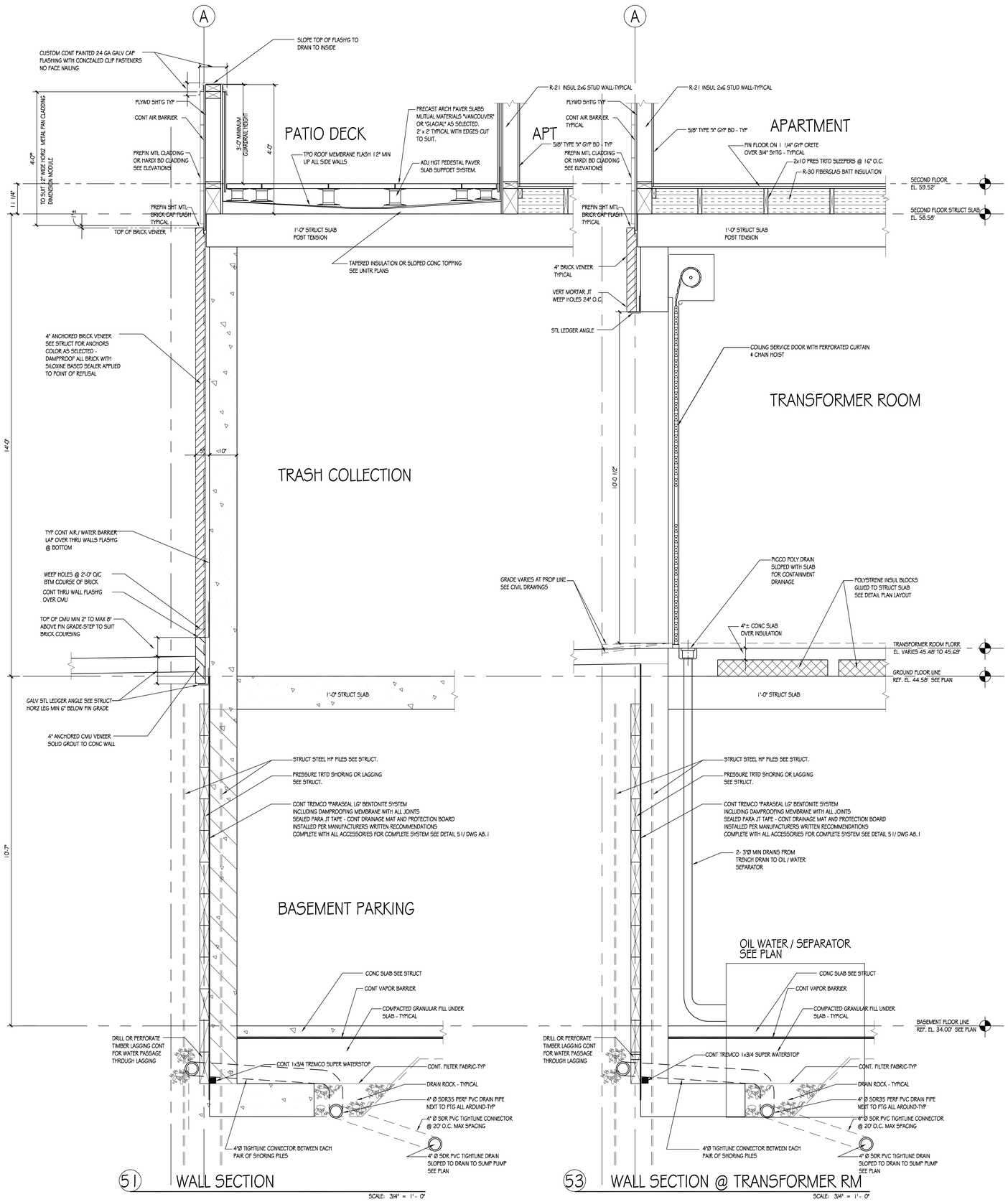
ARA Architects
Roger Axelson NCARB Certified
215 Commercial Street Suite 170
Bellingham Washington 98225
Project Architect - Roger Axelson
PH:360-671-1933 / E-Mail: RWA@ara-services.net

Drawing Title:
BUILDING SECTION @ BASEM'T RAMP

PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A3.2
OVERALL DRAWING
SCALE: 1/4" = 1' - 0"

PHOTO REDUCTION SCALE 0 1 INCH 2 INCHES 3 INCHES 4 INCHES



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ENGINEER'S SEAL

ISSUE	DATE	No.	REVISION	DATE

HARBORSIDE APARTMENTS

1310 "C" STREET
BELLINGHAM, WA

For
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

ARA Architects
Roger Axelson NCARB Certified
1313 Bay Street, Suite 225
Bellingham, Washington 98225
Project Architect - Roger Axelson
Ph:360-671-0933 / E-Mail: ARAtect-services.net

Drawing Title:
WALL SECTIONS

PROJECT NO. : 180701
DRAWN BY: RA
DATE: JAN 20, 2020

Drawing No.
A3.3

OVERALL DRAWING SCALE: 3/4" = 1'- 0"

PHOTO REDUCTION SCALE 0" 1 INCH 2 INCHES 3 INCHES 4 INCHES

REVISED 8-18-2020

1st STORY GROUND LEVEL PLAN

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

(50) SMOKE DETECTOR NOT ON FIRE ALARM SYS

(50) SMOKE DETECTOR CONNECTED TO FIRE ALARM SYS. TYPICAL

EXIT ILLUMINATED EXIT SIGN

KEY NOTES:

1. CLASS 1 STANDPIPE CONN
2. SEMI RECESSED FIRE EXTINGHUSHER CABT WITH 2A10BC FIRE EXTINGUISHER. PREPARE WALL RECESS TO MAINTAIN FIRE RESISTANT RATING OF WALL. CABT AS SELECTED BY OWNER
3. SURFACE MTD. FIRE EXTINGHUSHER CABT WITH 2A10BC FIRE EXTINGUISHER. CABT AS SELECTED BY OWNER
4. FIRE DEPT APPROVED RECESSED KNOX BOX (KEY BOX).
5. SEMI RECESSED INTERCOM CALL BOX AS APPROVED BY OWNER
6. FIRE ALARM ANNUNCIATOR PANEL
7. SALSBURY OR APPROVED 4C HORIZINTAL MAILBOX UNITS , 17 MAILBOXES @ 2 PARCEL BOXES IN EACH UNIT. PROVIDE 3-UNITS TOTAL 51 MAILBOXES @ 6 PARCEL BOXES.
8. CHAIN HOIST DOOR OPENER-PROVIDE RAPID OPEN GEAR RATIO
9. PROVIDE ELECTRIC VEHICLE CHARGING STATION.
10. PROVIDE "FSE" KEY BOX WITH REMOTE OPENER FOR COILING DOOR AND KEY FOR ELECTRICAL RM OR TRANSFORMER RM ACCESS.
11. PROVIDE "FSE" KEY BOX WITH ENTRY DOOR PASS KEY AND KEY(S) NECESSARY FOR ELECTRICAL & TRANSFORMER ROOM ACCESS.
12. PROVIDE CITY OF BELLINGHAM APPROVED KEY BOX WITH REMOTE OPENER (KNOX #3502 KEY SWITCH) FOR ELECTRIC POWERED COILING DOORS.
13. PROVIDE CITY OF BELLINGHAM APPROVED KEY BOX WITH KEYS NECESSARY FOR TRANSFORMER ROOM ACCESS.

REF N

THIS DOCUMENT WAS PREPARED SOLELY AND EXCLUSIVELY FOR THE USE BY THE PARTIES NAMED HEREIN. IT IS NOT TO BE USED BY ANY OTHER PERSON OR ENTITY FOR ANY PURPOSE WHATSOEVER WITHOUT THE EXPRESS WRITTEN CONSENT OF ARA ARCHITECTS (ARA) AND ARA'S CLIENT FOR A SPECIFIC PROJECT. ANY UNAUTHORIZED USE OF THIS DOCUMENT SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO ARA. ALL RIGHTS TO THIS DOCUMENT REMAIN THE PROPERTY OF ARA. IT MAY NOT BE ALTERED WITHOUT THE EXPRESS WRITTEN CONSENT OF ARA. ANY ALTERATIONS MADE TO THIS DOCUMENT WITHOUT THE EXPRESS WRITTEN CONSENT OF ARA SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO ARA. ANY USE WHICH ANY THIRD PARTY MAKES OF THIS DOCUMENT, OR ANY PORTION THEREOF, SHALL BE AT SUCH THIRD PARTY'S SOLE RISK, AND WITHOUT LIABILITY TO ARA. THE USER SHALL INDEMNIFY AND HOLD HARMLESS ARA FOR ALL DAMAGES SUFFERED BY ARA AND ALL COSTS INCURRED BY ARA, INCLUDING ATTORNEY'S FEES, DUE TO THE USER'S UNAUTHORIZED USE OF THIS DOCUMENT, OR ANY PORTION THEREOF, INCLUDING ANY DAMAGES CAUSED BY ANY ALTERATIONS MADE BY THE USER, OR ANYONE ACTING ON THE USER'S BEHALF, WITHOUT THE EXPRESS WRITTEN CONSENT OF ARA. THE USER'S ACCEPTANCE OF THE TERMS SET FORTH IN THIS NOTICE IS INDICATED BY THE USER'S USE OF OR ACCESS TO THIS DOCUMENT.

ENGINEER'S SEAL

No.	REVISION	DATE

ISSUE	DATE

HARBORSIDE APARTMENTS

1310 "C" STREET
BELLINGHAM, WA

For
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

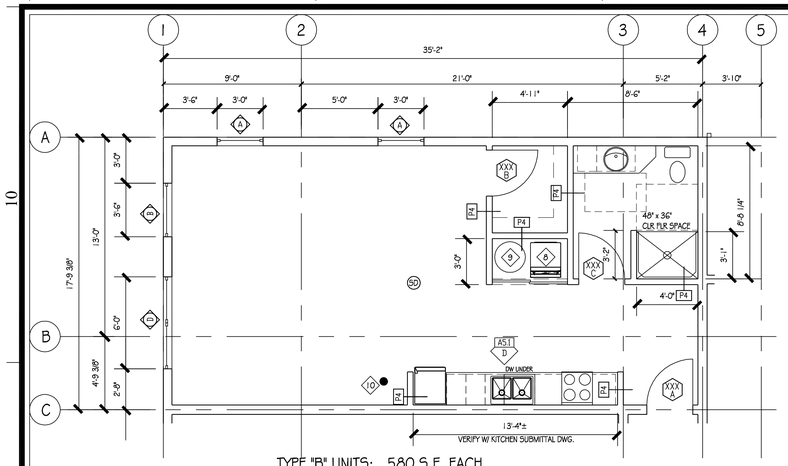
ARA Architects
Roger Axelson NCARB Certified
1313 Bay Street, Suite 223
Bellingham, Washington 98225
Project Architect - Roger Axelson
Ph:(360) 671-0933 / E-Mail: ARA@ara-services.net

Drawing Title:
1st STORY GROUND LEVEL PLAN

PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A4.1
OVERALL DRAWING SCALE: 1/4" = 1' - 0"

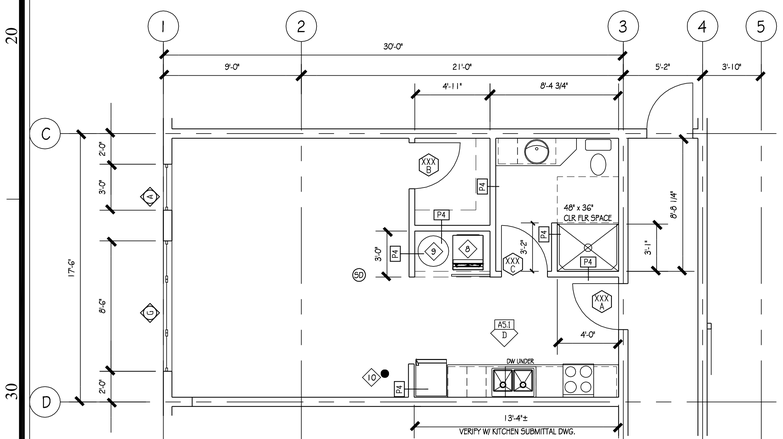
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TYPE "B" UNITS: 580 S.F. EACH

203 303

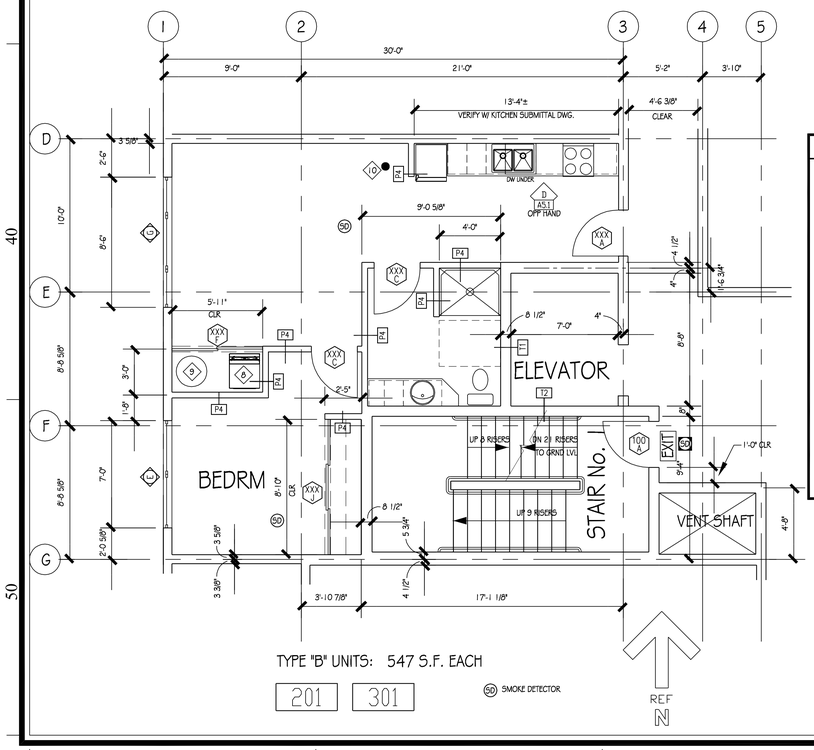
(50) SMOKE DETECTOR



TYPE "B" UNITS: 492 S.F. EACH

202 302

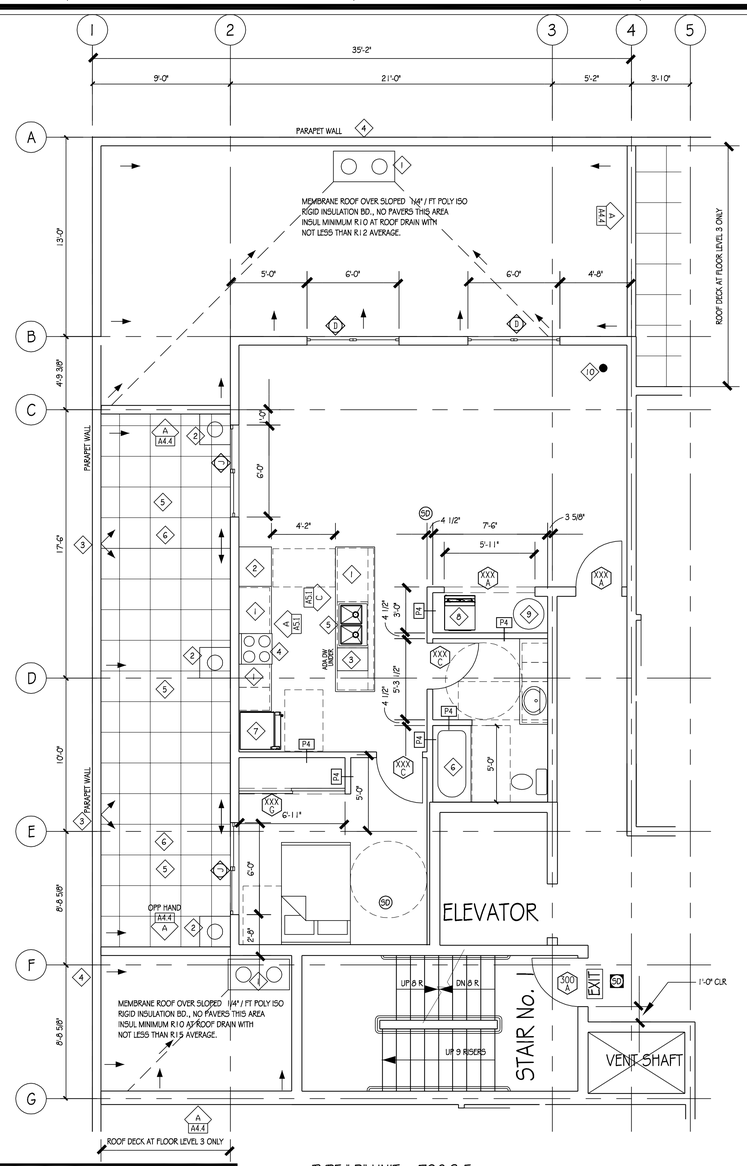
(50) SMOKE DETECTOR



TYPE "B" UNITS: 547 S.F. EACH

201 301

(50) SMOKE DETECTOR



UNIT KEY NOTES

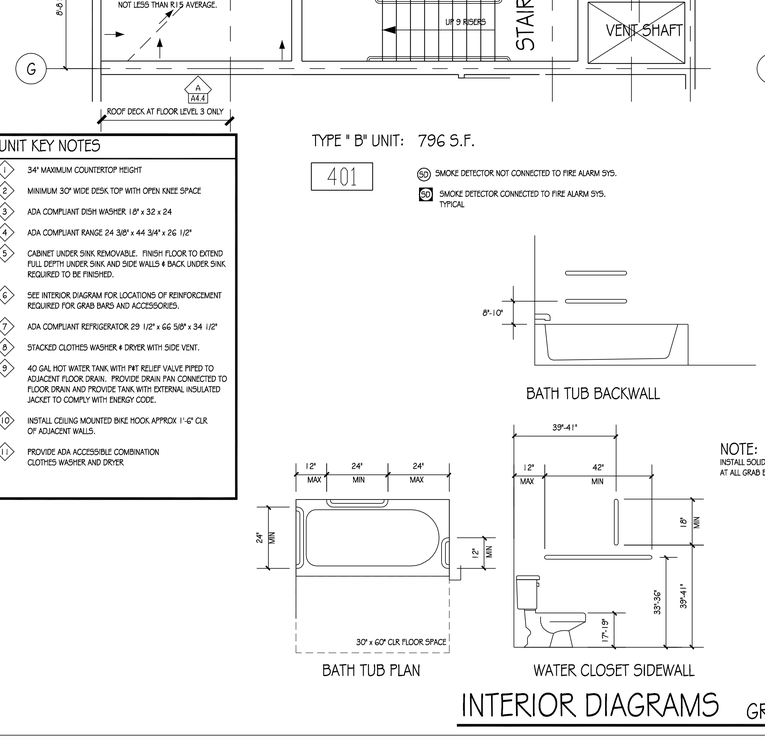
1. 34" MAXIMUM COUNTERTOP HEIGHT
2. MINIMUM 30" WIDE DESK TOP WITH OPEN KNEE SPACE
3. ADA COMPLIANT DISH WASHER 18" x 32 x 24
4. ADA COMPLIANT RANGE 24 3/8" x 44 3/4" x 26 1/2"
5. CABINET UNDER SINK REMOVABLE. FINISH FLOOR TO EXTEND FULL DEPTH UNDER SINK AND SIDE WALLS & BACK UNDER SINK REQUIRED TO BE FINISHED.
6. SEE INTERIOR DIAGRAM FOR LOCATIONS OF REINFORCEMENT REQUIRED FOR GRAB BARS AND ACCESSORIES.
7. ADA COMPLIANT REFRIGERATOR 29 1/2" x 66 5/8" x 34 1/2"
8. STACKED CLOTHES WASHER & DRYER WITH SIDE VENT.
9. 40 GAL HOT WATER TANK WITH PRT RELIEF VALVE PIPED TO ADJACENT FLOOR DRAIN. PROVIDE DRAIN PAN CONNECTED TO FLOOR DRAIN AND PROVIDE TANK WITH EXTERNAL INSULATED JACKET TO COMPLY WITH ENERGY CODE.
10. INSTALL CEILING MOUNTED BIKE HOOK APPROX 1'-6" CLR OF ADJACENT WALLS.
11. PROVIDE ADA-ACCESSIBLE COMBINATION CLOTHES WASHER AND DRYER

TYPE " B" UNIT: 796 S.F.

401

(50) SMOKE DETECTOR NOT CONNECTED TO FIRE ALARM SYS.

(50) SMOKE DETECTOR CONNECTED TO FIRE ALARM SYS. TYPICAL



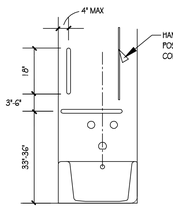
TYPE "A" UNIT: 796 S.F.

501

(50) SMOKE DETECTOR

NOTE: For laundry in Type A units, please provide clear floor space per Section 611.2, ensure operable parts comply with Section 309 (per 611.3) and that the height of unit complies with Section 611.4. A117.1 Section 1003.10

BATH TUB BACKWALL

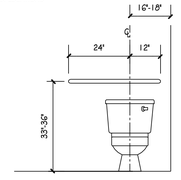


BATH TUB CONTROL ENDWALL

BATH TUB PLAN

WATER CLOSET SIDEWALL

NOTE:
INSTALL SOLID BACKING AT ALL GRAB BAR LOCATIONS



WATER CLOSET BACKWALL

PATIO DECK & ROOF KEY NOTES

1. ZURN #Z165 8-3/8" Ø COMBINATION MAIN ROOF & OVERFLOW DRAIN W/ LOW SILHOUETTE DOMES & DOUBLE TOP-SET DECK PLATE. 2" Ø PIPE SIZE.
2. ZURN #Z181 OR 185 6" Ø CORNICE DRAIN W/MEMBRANE FLASHING CLAMP AND SHEET FLASHING PAN. 2"Ø PIPE SIZE
3. CUSTOM MADE 8" WIDE x 6" HIGH 24 GA GALV SHT MTL EMERGENCY OVERFLOW SCUPPER. VERIFY WALL THICKNESS & SIDING CONFIGUATION AT POINT OF INSTALLATION. FLASH MEMBRANE ROOF INTO AND THROUGH SCUPPER FOR WATER TIGHT INSTALLATION. PROVIDE 1/2" MESH STAINLESS STEEL 16 GA WIRE COVER OVER INSIDE FACE OF SCUPPER. BTM OF SCUPPER SET MINIMUM OF 2 1/2" BELOW UNIT FLOOR ELEVATION.
4. SAME AS NOTE #3 ABOVE WITH SCUPPER SET 2" ABOVE ROOF MEMBRANE HIGH POINT ALONG PARAPET WALL.
5. TPO MEMBRANE OVER TAPERED POLY ISO INSUL BD 1/4" / FT. MINIMUM SLOPE OVER PLYWOOD DECK. INSUL MIN R-10 AT DRAINS, MAX 4" THICK. FLASH MEMBRANE ROOF UP SIDEWALLS & PARAPET WALLS A MINIMUM OF 12", SEE NOTE 7 BELOW ALSO
6. 24 x 24 VANCOVER BAY OR GLACIER ARCH PAVING SLABS BY MUTUAL MATERIALS, COLOR & PATTERN AS SELECTED BY OWNER. INSTALL ON APPIAN PEDESTAL SUPPORT SYSTEM. PROVIDE ADDED 8" SQ. PC OF ROOF MEMBRANE UNDER EACH SUPPORT PEDESTAL LOOSE SET OVER MEMBRANE ROOFING.
7. TPO MEMBRANE OVER SLOPED CONC TOPPING. TOPPING MINIMUM 2" THICK AT ROOF DRAINS AND SLOPED FOR 1/4" / FT SLOPE TOWARDS ROOF DRAINS. FLASH MEMBRANE UP SIDEWALLS & PARAPET WALLS A MINIMUM OF 12", FLASH MEMBRANE THROUGH AND UNDER ALL DOOR OPENINGS. MIN R10 AT ROOF DRAINS WITH AN OVERALL AVERAGE R VALUE OF NOT LESS THAN 12.

INTERIOR DIAGRAMS GRAB BAR LOCATIONS

REVISED 4-29-2020

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ENGINEER'S SEAL

No.	REVISION	DATE

ISSUE	DATE

HARBORSIDE APARTMENTS

1310 "C" STREET
BELLINGHAM, WA

For
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

REGISTERED ARCHITECT ROGER AXELSON STATE OF WASHINGTON 7306

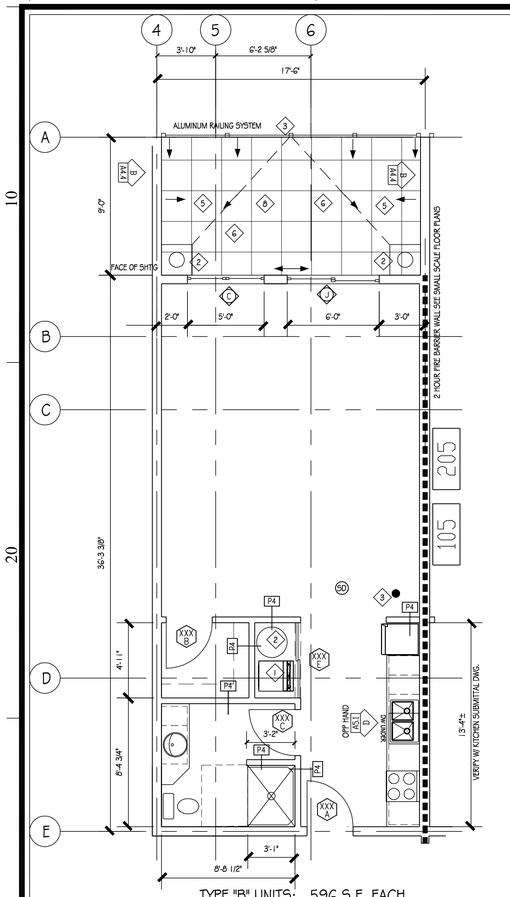
ARA Architects
Roger Axelson NCARB Certified
1313 Bay Street, Suite 103
Bellingham, Washington 98225
Project Architect - Roger Axelson
PH:360-671-1933 / E-Mail: ARA@ara-services.net

Drawing Title:
DETAIL UNIT FLOOR PLANS

PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A4.2
OVERALL DRAWING SCALE: 1/4" = 1' - 0"

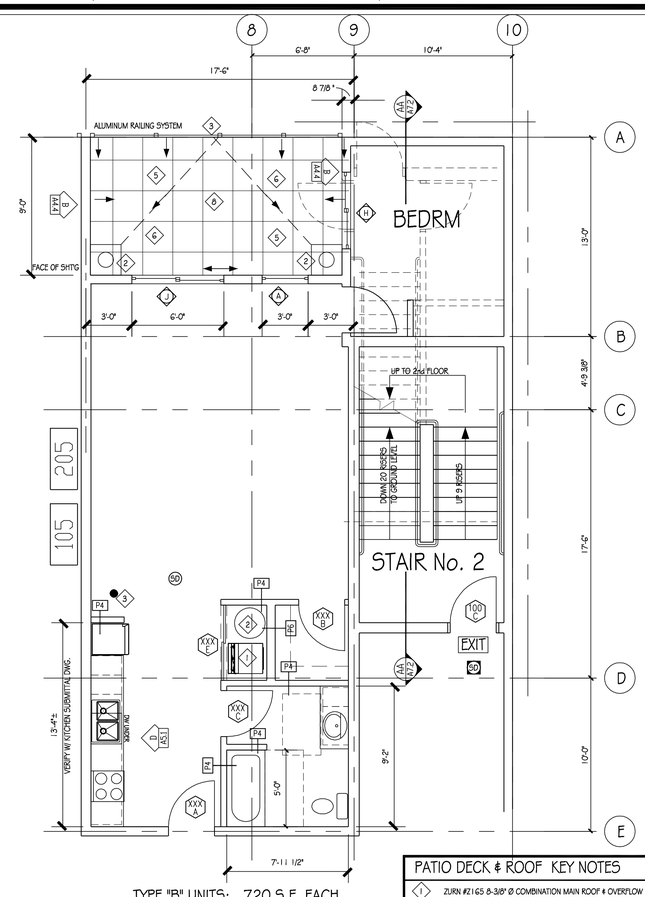
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TYPE "B" UNITS: 596 S.F. EACH

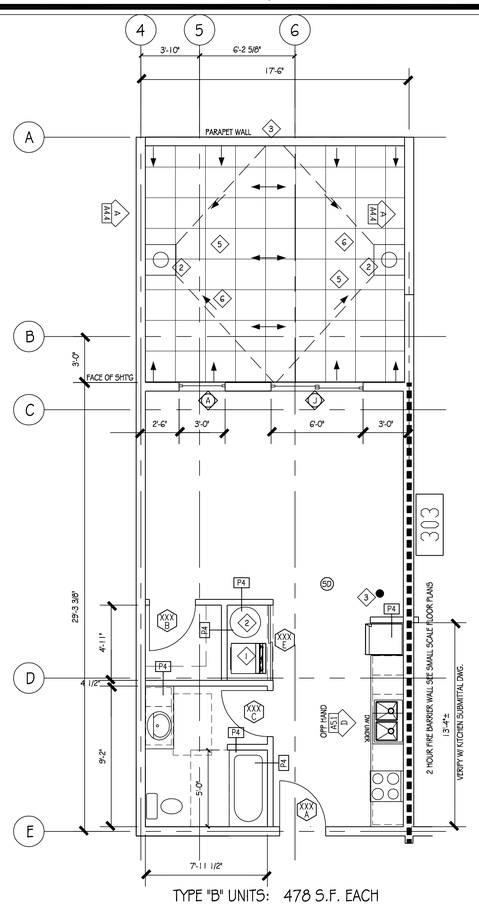
204 | 205 | 304 | 305

NOTE:
UNITS 104, 105 & 106 ALL HAVE EXTERIOR PATIOS OVER STRUCTURAL CONCRETE DECK PER KEYNOTE #6. FOR UNITS #204, 205 & 205 THE PATIOS'S ARE WOOD FRAME PER KEYNOTE #5.



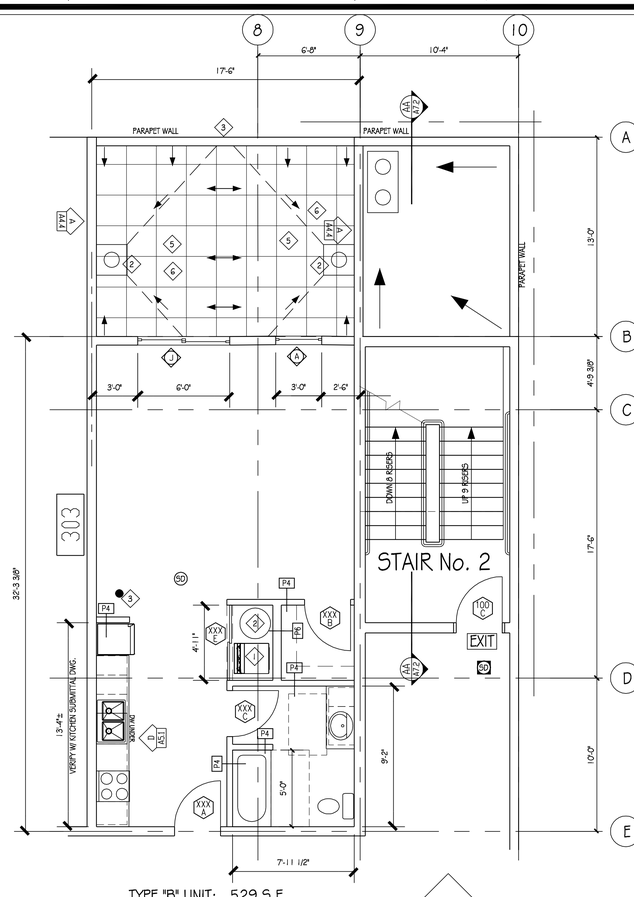
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206 | 306



TYPE "B" UNITS: 478 S.F. EACH

402 | 403



TYPE "B" UNIT: 529 S.F.

404

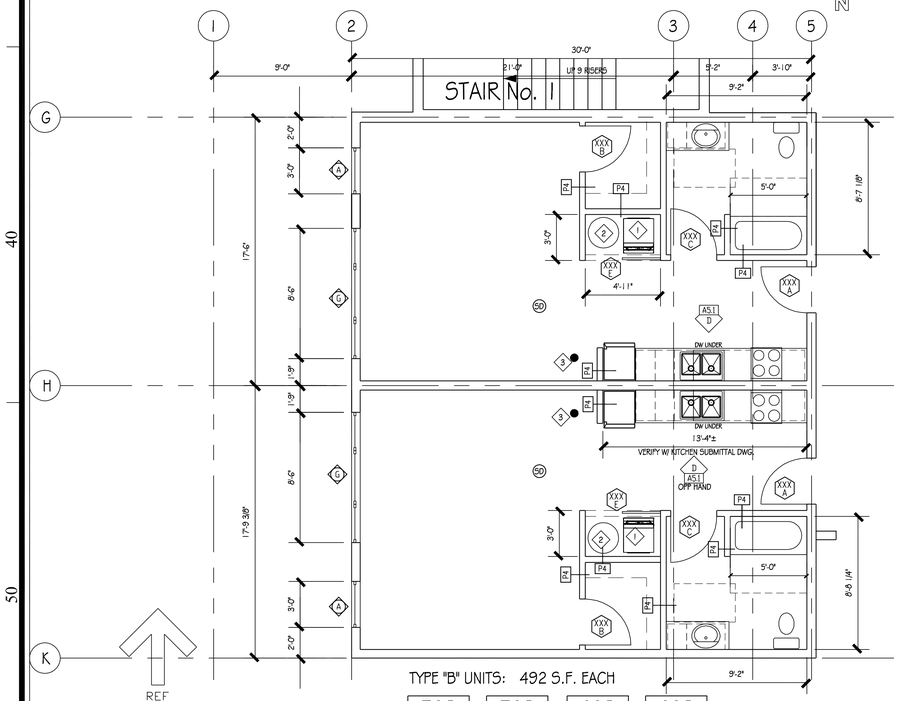
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PATIO DECK & ROOF KEY NOTES

1. ZURN #Z165 8-3/8" Ø COMBINATION MAIN ROOF & OVERFLOW DRAIN W/ LOW SILHOUETTE DOMES & DOUBLE TOP-SET DECK PLATE. 2" Ø PIPE SIZE.
2. ZURN #Z181 OR 185 6" Ø CORNICE DRAIN W/MEMBRANE FLASHING CLAMP AND SHEET FLASHING PAN. 2"Ø PIPE SIZE
3. CUSTOM MADE 8" WIDE x 6" HIGH 24 GA GALV SHT MTL EMERGENCY OVERFLOW SCUPPER. VERIFY WALL THICKNESS & SIDING CONFIGUATION AT POINT OF INSTALLATION. FLASH MEMBRANE ROOF INTO AND THROUGH SCUPPER FOR WATER TIGHT INSTALLATION. PROVIDE 1/2" MESH STAINLESS STEEL 16 GA WIRE COVER OVER INSIDE FACE OF SCUPPER. BTM OF SCUPPER SET MINIMUM OF 2 1/2" BELOW UNIT FLOOR ELEVATION.
4. SAME AS NOTE #3 ABOVE WITH SCUPPER SET 2" ABOVE ROOF MEMBRANE HIGH POINT ALONG PARAPET WALL.
5. TPO MEMBRANE OVER MINIMUM R10 POLY ISO INSUL BD OVER SLOPED WD FRAME PLYWOOD DECK. FLASH MEMBRANE UP SIDEWALLS & PARAPET WALLS A MINIMUM OF 12", FLASH MEMBRANE THROUGH AND UNDER PATIO DOOR OPENINGS.
6. 24 x 24 VANCOVER BAY OR GLACIER ARCH PAVING SLABS BY MUTUAL MATERIALS, COLOR & PATTERN AS SELECTED BY OWNER. INSTALL ON APPIAN PEDESTAL SUPPORT SYSTEM. PROVIDE ADDED 8" SQ. FC OF ROOF MEMBRANE UNDER EACH SUPPORT PEDESTAL LOOSE SET OVER MEMBRANE ROOFING.
7. TPO MEMBRANE OVER SLOPED CONC TOPPING. TOPPING MINIMUM 2" THICK AT ROOF DRAINS AND SLOPED FOR 1/4" / FT SLOPE TOWARDS ROOF DRAINS. FLASH MEMBRANE UP SIDEWALLS & PARAPET WALLS A MINIMUM OF 12", FLASH MEMBRANE THROUGH AND UNDER ALL DOOR OPENINGS.
8. TPO MEMBRANE OVER TAPERED SLOPED POLY ISO INSUL BD INSUL SET ON CONCRETE STRUCT FLOOR DECK. INSUL MIN R10 WITH AVERAGE VALUE NOT LESS THAN R12. SLOPE 1/4" / FT TOWARDS ROOF DRAINS. FLASH MEMBRANE UP SIDEWALLS & PARAPET WALLS A MINIMUM OF 12", FLASH MEMBRANE THROUGH AND UNDER ALL DOOR OPENINGS & INTO & THROUGH OVERFLOW SCUPPERS. CONCRETE FLOOR DECK APPLIES AT 1st FLOOR UNITS ONLY.

50 SMOKE DETECTOR NOT CONNECTED TO FIRE ALARM SYS.

50 SMOKE DETECTOR CONNECTED TO FIRE ALARM SYS. TYPICAL



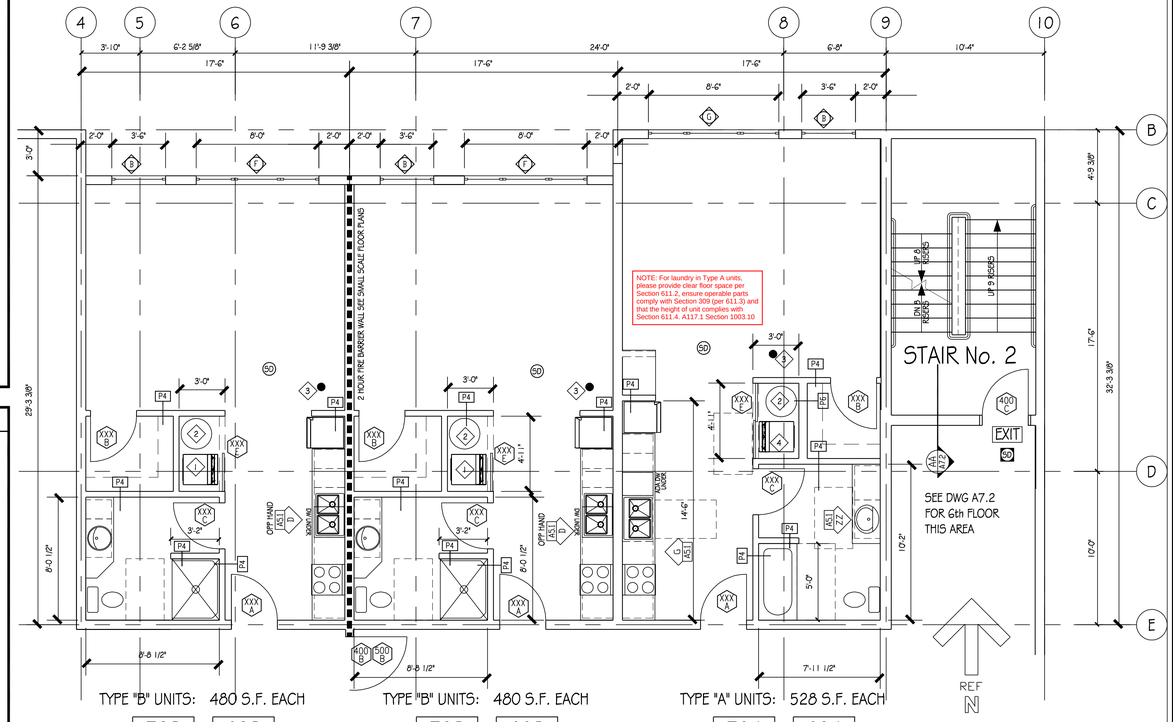
TYPE "B" UNITS: 492 S.F. EACH

508 | 509 | 608 | 609

REF N

UNIT KEY NOTES

1. STACKED WASHER & DRYER WITH SIDE VENT.
2. 40 GAL HOT WATER TANK WITH P&T RELIEF VALVE PIPED TO ADJACENT FLOOR DRAIN. PROVIDE DRAIN PAN CONNECTED TO FLOOR DRAIN AND PROVIDE TANK WITH EXTERNAL INSULATED JACKET TO COMPLY WITH ENERGY CODE.
3. INSTALL CEILING MOUNTED BIKE HOOK APPROX 1'-6" CLR OF ADJACENT WALLS.
4. ADA ACCESSIBLE COMBINATION CLOTHES WASHER AND DRYER



TYPE "B" UNITS: 480 S.F. EACH

502 | 602

TYPE "B" UNITS: 480 S.F. EACH

503 | 603

TYPE "A" UNITS: 528 S.F. EACH

504 | 604

REF N

REVISED 4-29-2020

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ENGINEER'S SEAL

No.	REVISION	DATE

ISSUE	DATE

HARBORSIDE APARTMENTS

1310 "C" STREET
BELLINGHAM, WA

For
Bad Reinertz L.L.C.
1000 ASOR STREET #101, BELLINGHAM, WA 98225

REGISTERED ARCHITECT ROGER A. AXELSON STATE OF WASHINGTON

ARA Architects
Roger Axelson NCARB Certified
1313 Commercial Street
Bellingham, Washington 98225
Project Architect - Roger Axelson
PH.360-671-1933 / E-Mail: AR@ara-services.net

Drawing Title:
DETAIL UNIT FLOOR PLANS

PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A4.3
OVERALL DRAWING SCALE: 1/4" = 1' - 0"

PHOTO REDUCTION SCALE 0" 1 INCH 2 INCHES 3 INCHES 4 INCHES 5 INCHES 6 INCHES 7 INCHES 8 INCHES 9 INCHES 10 INCHES 11 INCHES 12 INCHES

PATIO DECK & ROOF KEY NOTES

1. ZURN #Z165 8-3/8" Ø COMBINATION MAIN ROOF & OVERFLOW DRAIN W/ LOW SILHOUETTE DOMES & DOUBLE TOP-SET DECK PLATE. 2" Ø PIPE SIZE.
2. ZURN #Z1810 1.66 6" Ø CORNICE DRAIN W/MEMBRANE FLASHING CLAMP AND SHEET FLASHING PAN. 2"Ø PIPE SIZE
3. CUSTOM MADE 8" WIDE x 6" HIGH 24 GA GALV SHT MTL EMERGENCY OVERFLOW SCUPPER. VERIFY WALL THICKNESS & SIDING CONFIGUATION AT POINT OF INSTALLATION. FLASH MEMBRANE ROOF INTO AND THROUGH SCUPPER FOR WATER TIGHT INSTALLATION. PROVIDE 1/2" MESH STAINLESS STEEL 16 GA WIRE COVER OVER INSIDE FACE OF SCUPPER. BTM OF SCUPPER SET MINIMUM OF 2 1/2" BELOW UNIT FLOOR ELEVATION.
4. SAME AS NOTE #3 ABOVE WITH SCUPPER SET 2" ABOVE ROOF MEMBRANE HIGH POINT ALONG PARAPET WALL.
5. TPO MEMBRANE OVER TAPERED POLY ISO INSUL BD 1/4" / FT. MINIMUM SLOPE OVER PLYWOOD DECK. INSUL MIN R-10 AT DRAINS, AVG R-12, MAX 4" THICK. FLASH MEMBRANE ROOF UP SIDEWALLS & PARAPET WALLS A MINIMUM OF 12", FLASH MEMBRANE THROUGH AND UNDER PATIO DOOR OPENINGS.
6. 24 x 24 VANCOVER BAY OR GLACIER ARCH PAVING SLABS BY MUTUAL MATERIALS, COLOR # PATTEREN AS SELECTED BY OWNER. INSTALL ON APPIAN PEDESTAL SUPPORT SYSTEM. PROVIDE ADDED 8" SQ. PC OF ROOF MEMBRANE UNDER EACH SUPPORT PEDESTAL LOOSE SET OVER MEMBRANE ROOFING.
7. TPO MEMBRANE OVER SLOPED CONC TOPPING. TOPPING MINIMUM 2" THICK AT ROOF DRAINS AND SLOPED FOR 1/4" / FT SLOPE TOWARDS ROOF DRAINS. FLASH MEMBRANE UP SIDEWALLS & PARAPET WALLS A MINIMUM OF 12", FLASH MEMBRANE THROUGH AND UNDER ALL DOOR OPENINGS.

UNIT KEY NOTES

1. STACKED CLOTHES WASHER & DRYER WITH SIDE VENT.
2. 40 GAL HOT WATER TANK WITH PVT RELIEF VALVE PIPED TO ADJACENT FLOOR DRAIN. PROVIDE DRAIN PAN CONNECTED TO FLOOR DRAIN AND PROVIDE TANK WITH EXTERNAL INSULATED JACKET TO COMPLY WITH ENERGY CODE.
3. INSTALL CEILING MOUNTED BIKE HOOK APPROX 1'-6" CLR OF ADJACENT WALLS.

TYPE "B" UNITS: 492 S.F. EACH
210 211 310 311

TYPE "B" UNIT: 492 S.F. 209

TYPE "B" UNIT: 492 S.F. 208

TYPE "B" UNIT: 492 S.F. 207

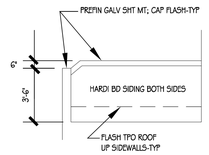
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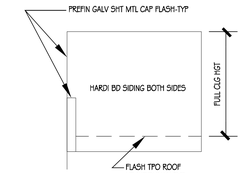
TYPE "B" UNITS: 492 S.F. EACH
308 406 506 606

TYPE "B" UNITS: 492 S.F. EACH
307 405 505 605

50 SMOKE DETECTOR NOT CONNECTED TO FIRE ALARM SYS.
50 SMOKE DETECTOR CONNECTED TO FIRE ALARM SYS. TYPICAL



ELEVATION "A"



ELEVATION "B"

REVISED 4-29-2020

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ENGINEER'S SEAL

No.	REVISION	DATE

ISSUE	DATE

HARBORSIDE APARTMENTS

1310 "C" STREET
BELLINGHAM, WA

For
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

ARA Architects
Roger Axelson NCARB Certified
1313 Commercial Suite 202
Bellingham, Washington 98225
Project Architect - Roger Axelson
Ph:360-671-0933 / E-Mail: ARAMail-services.net

Drawing Title:
DETAIL UNIT FLOOR PLANS

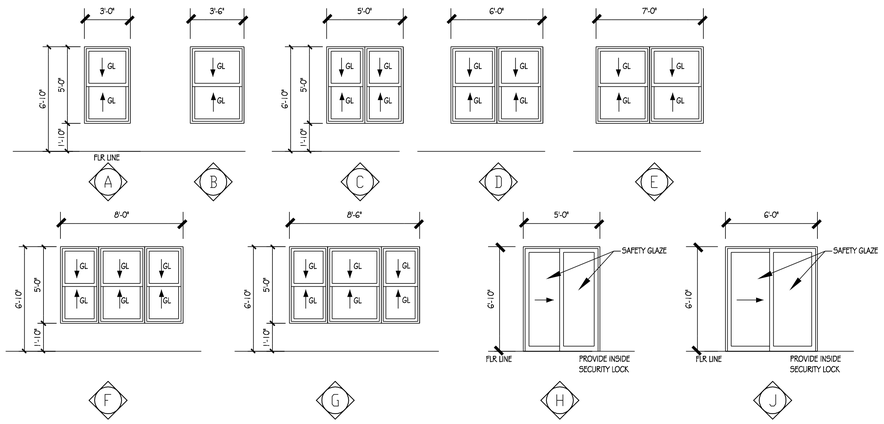
PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A4.4

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

PHOTO REDUCTION SCALE 0" 1 INCH 2 INCHES 3 INCHES 4 INCHES

WINDOW TYPES:

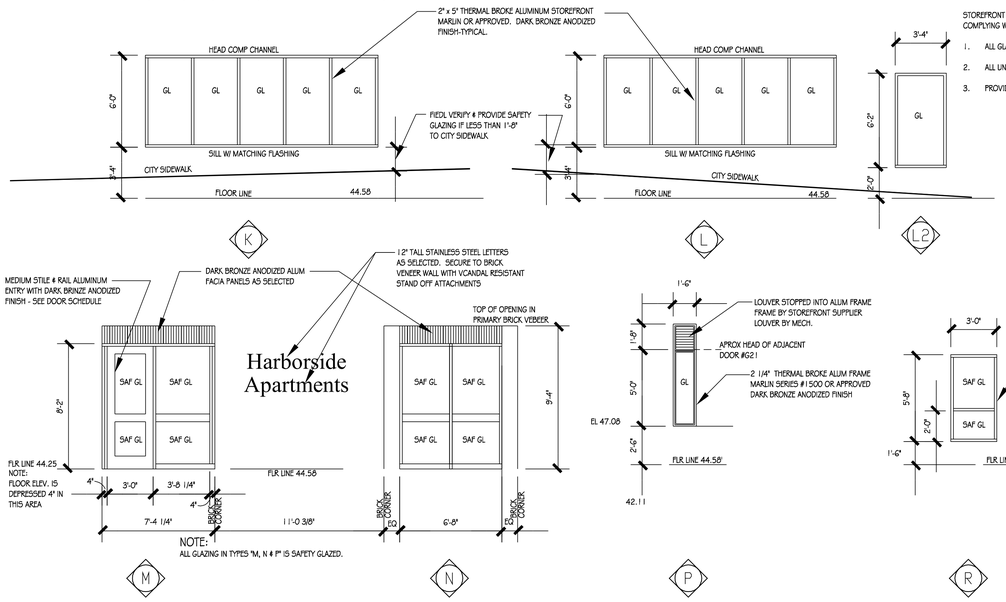


NOTE:

WINDOW TYPES "A" THROUGH "J" ARE ALL EXTRUDED VINYL FRAMED UNIT COMPLYING WITH THE FOLLOWING NOTES.

1. ALL GLAZING IS 1" NOMINAL THICKNESS 5B70XL + CLR INSULATED GLASS WITH ARGON FILL.
2. ALL UNITS ARE TO HAVE A CERTIFIED "U" VALUE OF 0.30 OR LESS, WITH A SHGC OF 0.40 OR LESS.
3. AT BOTTOM SASH OF DOUBLE HUNG WINDOW UNITS WHERE SILL IS LOCATED MORE THAN 6'-0" ABOVE FINISHED GRADE OR OTHER SURFACE BELOW ON THE EXTERIOR OF THE BUILDING PROVIDE OPENING CONTROL DEVICE COMPLYING WITH ASTM F 2090 AND IBC SECTION 1015.8.1 LIMITING OPENING TO NOT ALLOW A 4 INCH DIAMETER SPHERE TO PASS THROUGH THE LOWER WINDOW OPENING.
4. AT SLIDING DOOR UNITS SEE FLOOR PLANS FOR HANDING OR OPERABLE SIDE.
5. AT ALL DOUBLE HUNG WINDOWS PROVIDE INTERIOR SECURITY LOCK ON CHECK RAIL.
6. PROVIDE STANDARD INSECT SCREENS FOR ALL OPERABLE WINDOWS & SLIDING DOORS.
7. AT TYPE "A" ACCESSIBLE UNITS (3 UNITS #501, 504 & 604) PROVIDE MANUFACTURERS SPECIAL HARDWARE COMPLYING WITH ANSI A117.1. OPERABLE PARTS PER ANZI A117.1 SECTION 309 AND INSTALLED WITHIN REACH RANGES SPECIFIED IN SECTION 308. NOT MORE THAN 48" ABOVE FLOOR NOR LOWER THAN 15" ABOVE FLOOR.

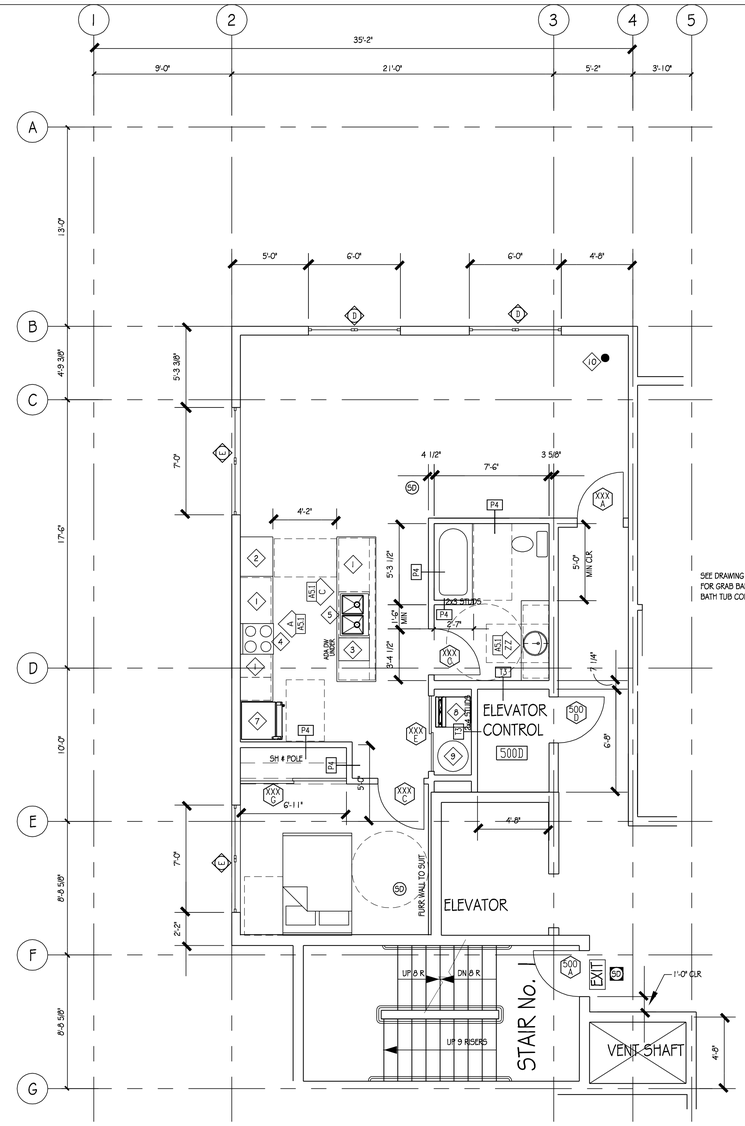
STOREFRONT TYPES:



NOTE:

STOREFRONT TYPES "K" THROUGH "R" ARE ALL THERMAL BROKE EXTRUDED ALUMINUM FRAMED UNITS COMPLYING WITH THE FOLLOWING NOTES.

1. ALL GLAZING IS 1" NOMINAL THICKNESS 5B70XL + CLR INSULATED GLASS WITH ARGON FILL.
2. ALL UNITS ARE TO HAVE A MANUFACTURERS "U" VALUE OF 0.38 OR LESS WITH A SHGC OF 0.40 OR LESS
3. PROVIDE SAFETY GLAZING WHERE INDICATED AND / OR REQUIRED



TYPE "B" UNIT: 796 S.F.

601

(50) SMOKE DETECTOR NOT CONNECTED TO FIRE ALARM SYS

(50) SMOKE DETECTOR CONNECTED TO FIRE ALARM SYS. TYPICAL

REF N

UNIT KEY NOTES

1. 34" MAXIMUM COUNTERTOP HEIGHT
2. MINIMUM 30" WIDE DESK TOP WITH OPEN KNEE SPACE
3. ADA COMPLIANT DISH WASHER 18" x 32 x 24
4. ADA COMPLIANT RANGE 24 3/8" x 44 3/4" x 26 1/2"
5. CABINET UNDER SINK REMOVABLE. FINISH FLOOR TO EXTEND FULL DEPTH UNDER SINK AND SIDE WALLS & BACK UNDER SINK REQUIRED TO BE FINISHED.
6. SEE INTERIOR DIAGRAM FOR LOCATIONS OF REINFORCEMENT REQUIRED FOR GRAB BARS AND ACCESSORIES.
7. ADA COMPLIANT REFRIGERATOR 29 1/2" x 66 5/8" x 34 1/2"
8. STACKED CLOTHES WASHER & DRYER WITH SIDE VENT.
9. 40 GAL HOT WATER TANK WITH P&T RELIEF VALVE PIPED TO ADJACENT FLOOR DRAIN. PROVIDE DRAIN PAN CONNECTED TO FLOOR DRAIN AND PROVIDE TANK WITH EXTERNAL INSULATED JACKET TO COMPLY WITH ENERGY CODE.
10. INSTALL CEILING MOUNTED BIKE HOOK APPROX 1'-6" CLR OF ADJACENT WALLS.

REVISED 8-18-2020

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ENGINEER'S SEAL

No.	REVISION	DATE

ISSUE DATE

HARBORSIDE APARTMENTS

1310 "G" STREET
BELLINGHAM, WA

For
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

REGISTERED ARCHITECT ROGER D. AXELSON STATE OF WASHINGTON 7200

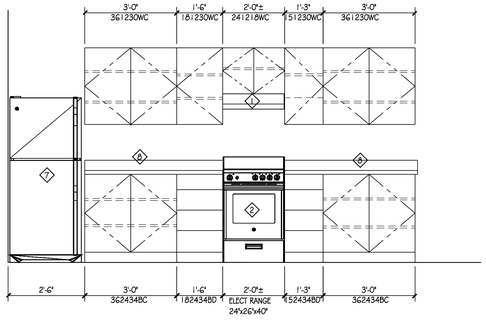
ARA Architects
Roger Axelson NCARB Certified
1313 Dupont Street
Bellingham, Washington 98225
Project Architect - Roger Axelson
PH.360-671-1933 / E-Mail: ARA@ara-services.net

Drawing Title:
DETAIL UNIT PLAN & WINDOW TYPES

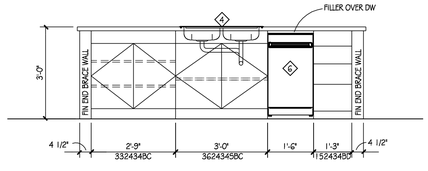
PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A4.5
OVERALL DRAWING SCALE: 1/4" = 1' - 0"

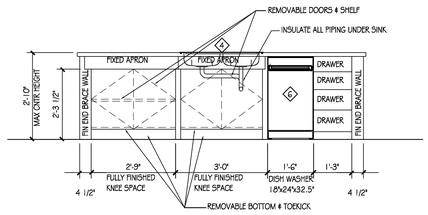
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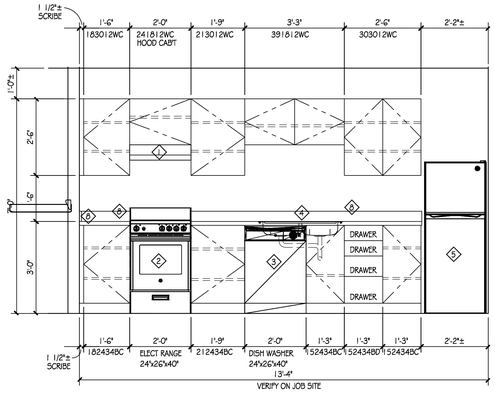
A KITCHEN ELEVATION



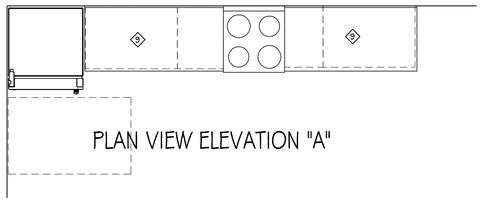
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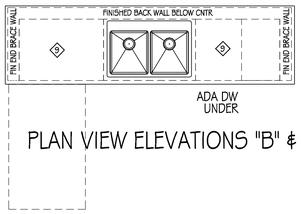


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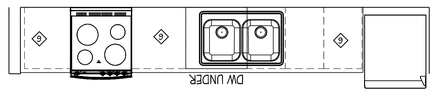


D KITCHEN ELEVATION

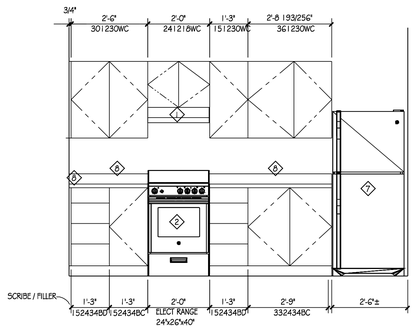




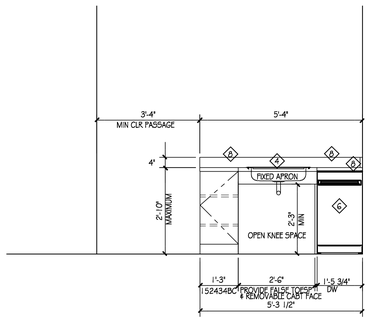
PLAN VIEW ELEVATIONS "B" & "C"



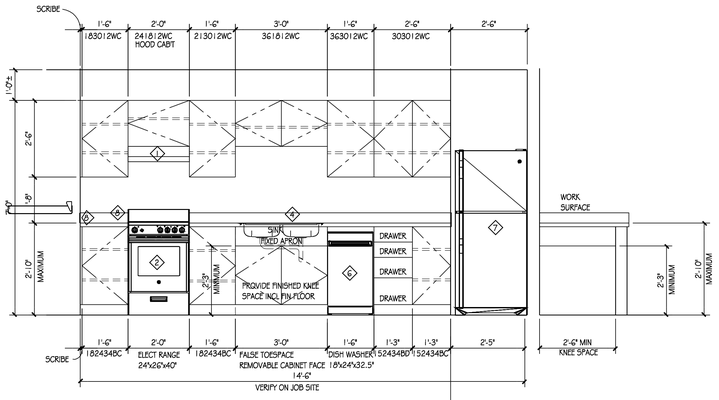
PLAN VIEW ELEVATION "D"



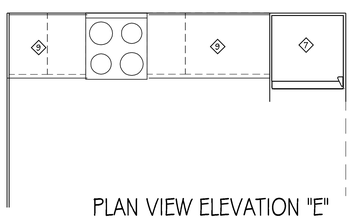
E KITCHEN ELEVATION

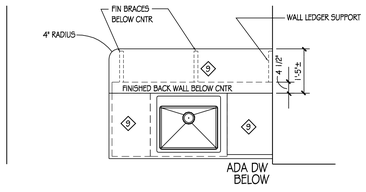


F KITCHEN ELEVATION

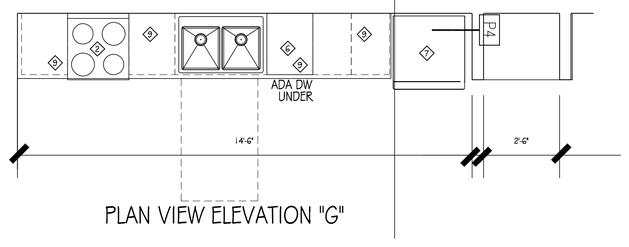


G KITCHEN ELEVATION

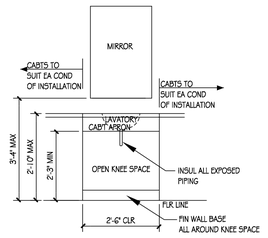




PLAN VIEW ELEVATION "F"



PLAN VIEW ELEVATION "G"



ZZ TYP BATH LAV ELEVATION

TYPE "A" UNITS

KITCHEN KEY NOTES

1. BROAN #BCSD12455 RANGE HOOD WITH 2 LEVEL 50W HALOGEN LIGHTS PROVIDE GREASE FILTER FAN AND DUCTING PER MECHANICAL SPEC 100 CFM MINIMUM.
2. ELECTRIC KITCHEN RANGE: GE#JAS640RM5S 24" FREE-STANDING/SLIDE-IN FRONT CONTROL RANGE WITH STEAM CLEAN AND LARGE WINDOW
3. GE SPACEMAKER UNDER-THE-SINK DISHWASHER, MODEL #GSM22GOV5S, STAINLESS STEEL FRONT,
4. DOUBLE BOWL DAYTON SINK, MODEL #GE23321, 33" x 21 1/4" x 5 3/8" STAINLESS STEEL SELF RIMMING SINK, WITH FAUCETT AND ACCESSORIES AS SELECTED BY OWNER.
5. TOP-FREEZER REFRIGERATOR, GE MODEL #GPE12FSKSB WITH STAINLESS STEEL DOOR. 24" x 59 7/8" x 28 5/8". WITH ALL REQUIRED ACCESSORIES.
6. GE MODEL #PDT145SSLSS DISHWASHER, 17 3/4" x 32 1/2" x 23 1/2" STAINLESS STEEL FACE. ADA ACCESSIBLE WITH ACCESSORIES REQ'D FOR COMPLETE INSTALLATION.
7. TOP-FREEZER REFRIGERATOR, GE MODEL #GTS16GSHSS WITH STAINLESS STEEL DOOR. 28" x 64 3/4" x 31 7/8". ADA ACCESSIBLE. WITH ALL REQUIRED ACCESSORIES.
8. 4" HIGH BULNOSED GRANITE BACKSPLASH # / OR END SPLASH
9. 3 CM GRANITE COUNTERTOP W/ BULNOSED EDGE - COLOR AS SELECTED

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ENGINEER'S SEAL

ISSUE	DATE	No.	REVISION	DATE

HARBORSIDE APARTMENTS

1310 "C" STREET
BELLINGHAM, WA

For
Bad Reinertz L.L.C.
100 ASTOR STREET #101, BELLINGHAM, WA 98225

ARA Architects
Roger Axelson NCARB Certified
1313 Bay Street, Suite 202
Bellingham, Washington 98225
Ph:360-671-0833 / E-Mail: RAA@nw-services.net
Project Architect - Roger Axelson

Drawing Title:
INTERIOR ELEVATIONS

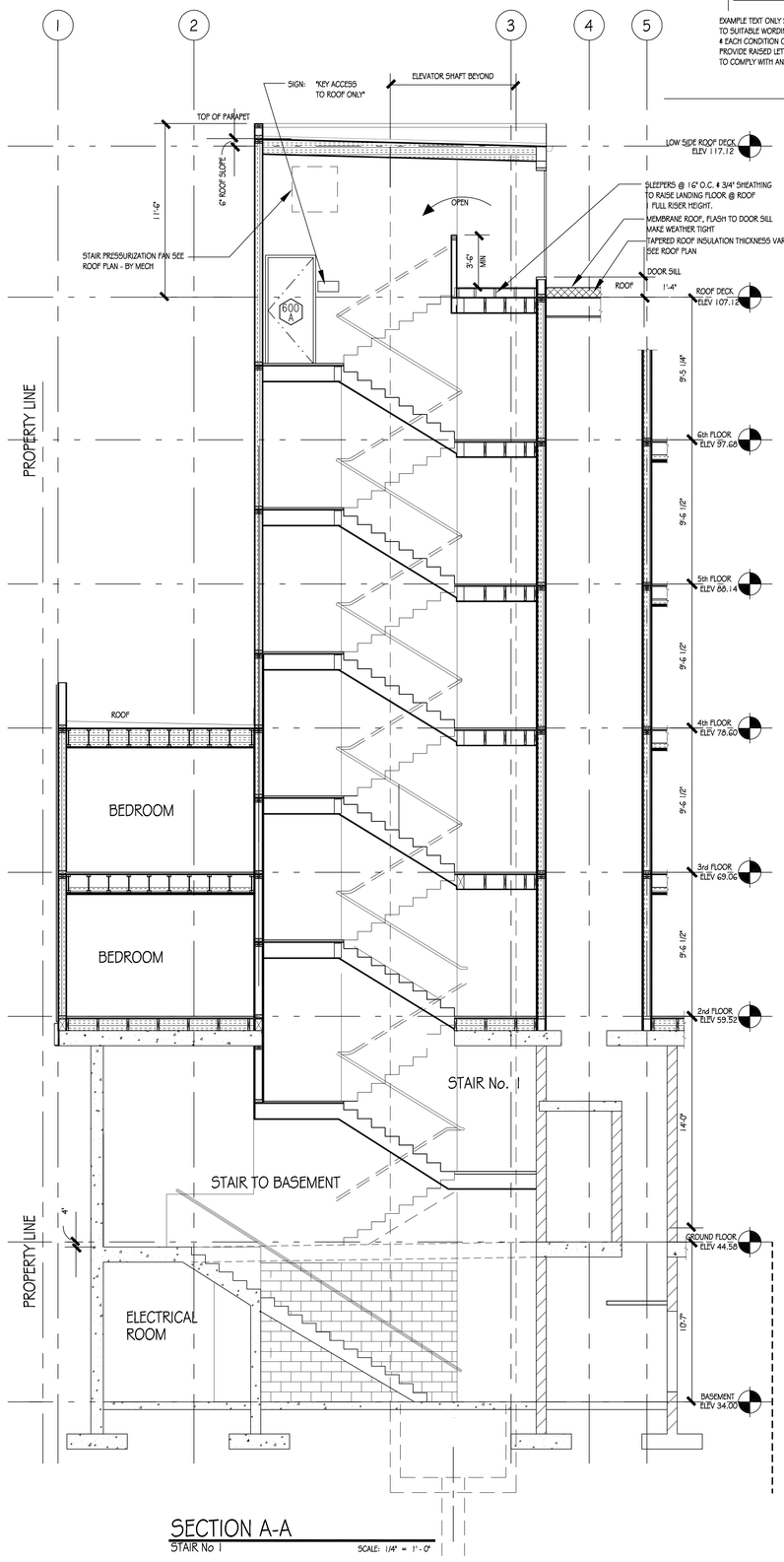
PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A5.1

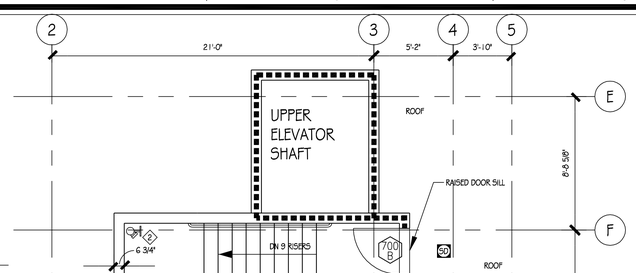
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REVISED 4-29-2020

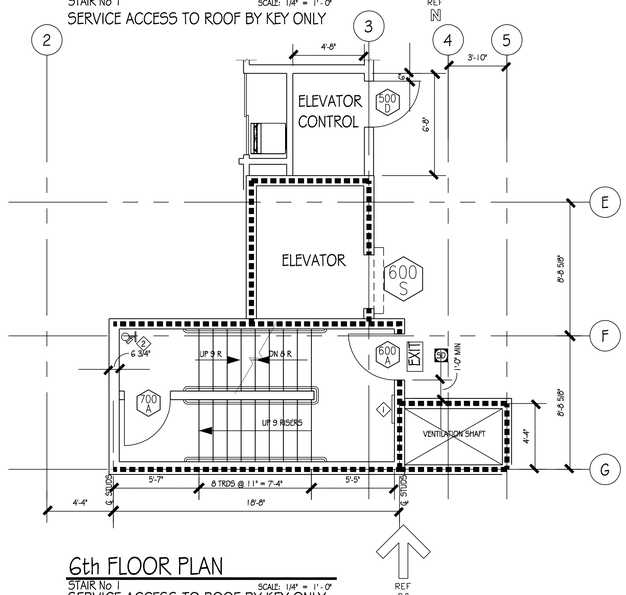
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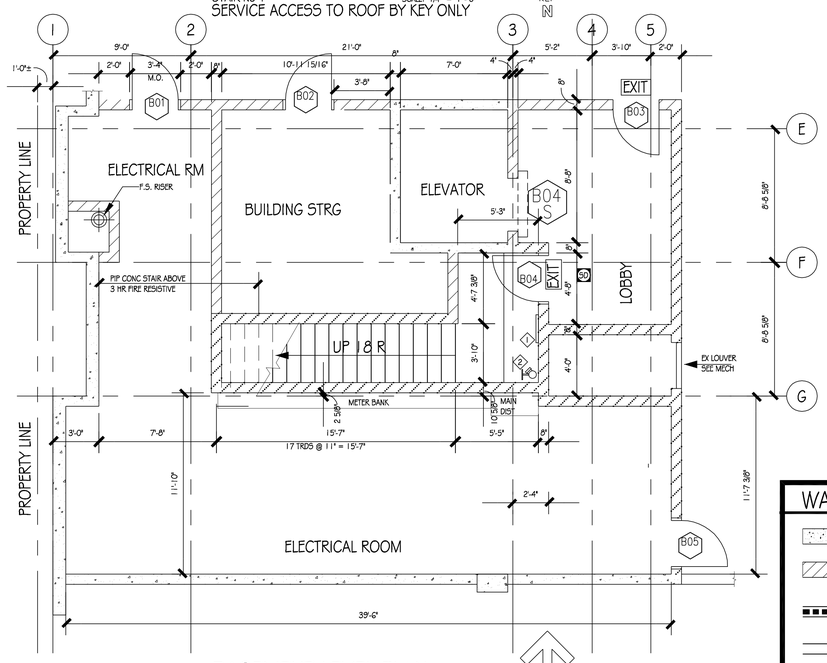
SECTION A-A
STAIR No 1 SCALE: 1/4" = 1'-0"



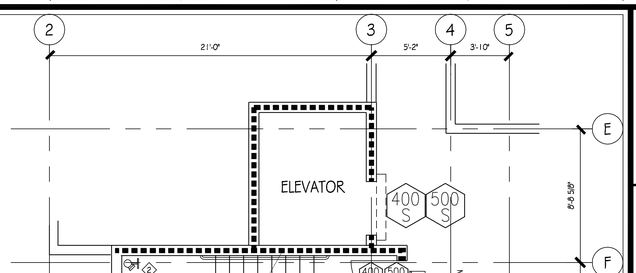
ROOF LEVEL PLAN
STAIR No 1 SCALE: 1/4" = 1'-0"
SERVICE ACCESS TO ROOF BY KEY ONLY



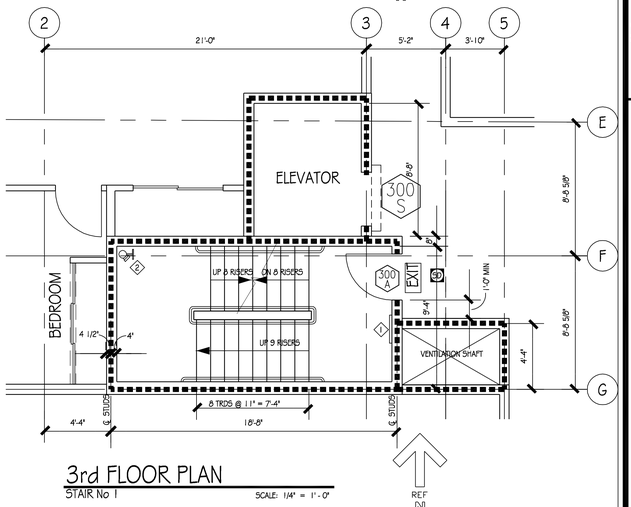
6th FLOOR PLAN
STAIR No 1 SCALE: 1/4" = 1'-0"
SERVICE ACCESS TO ROOF BY KEY ONLY



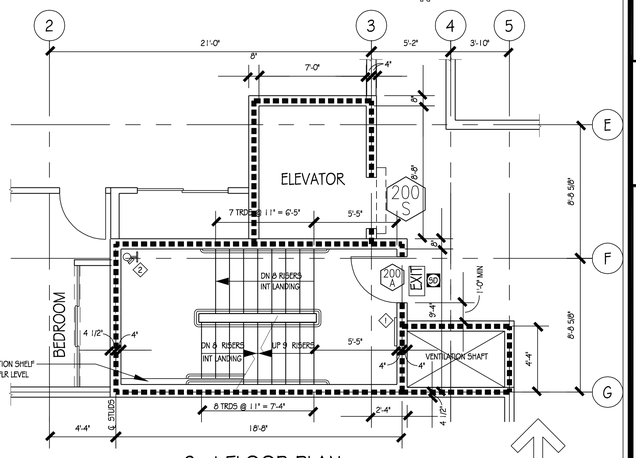
BASEMENT LEVEL PLAN
STAIR No 1 SCALE: 1/4" = 1'-0"



4th & 5th FLOOR PLANS
STAIR No 1 SCALE: 1/4" = 1'-0"



3rd FLOOR PLAN
STAIR No 1 SCALE: 1/4" = 1'-0"



2nd FLOOR PLAN
STAIR No 1 SCALE: 1/4" = 1'-0"

WALL LEGEND

- REINF CONCRETE 3 HOUR FIRE RESISTIVE
- REINF LT WGT CONCRETE MASONRY 3 HOUR FIRE RESISTIVE
- 2 HOUR FIRE RESISTANT WOOD FRAME WALL SEE WALL TYPES DWG A2.5
- WOOD FRAME PARTITON SEE DWG A2.5 FOR MORE DETAILED DESCRIPTION
- (50) SMOKE DETECTOR CONNECTED TO FIRE ALARM SYS. TYPICAL

NOTE:
SEE DRAWING A4.1 FOR 1st STORY GROUND FLOOR LEVEL

KEY NOTES:
1. TYPICAL STAIR FLOOR LEVEL SIGN SEE DETAIL THIS DWG
2. CLASS 1 STANDPIPE CONN

REVISED 8-18-2020

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ENGINEER'S SEAL

No.	REVISION	DATE

ISSUE DATE

HARBORSIDE APARTMENTS
1310 "C" STREET
BELLINGHAM, WA
For
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

REGISTERED ARCHITECT ROGER D. AXELSON STATE OF WASHINGTON

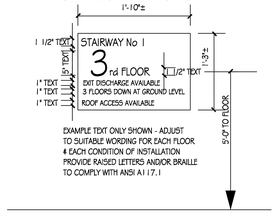
ARA Architects
Roger Axelson NCARB Certified
1313 Bay Street, Suite 210
Bellingham, Washington 98225
Project Architect - Roger Axelson
PH.360-671-1953 / E-Mail: ARA@ara-services.net

PHOTO REDUCTION SCALE 0" 1 INCH 2 INCHES 3 INCHES 4 INCHES 5 INCHES 6 INCHES 7 INCHES 8 INCHES 9 INCHES 10 INCHES 11 INCHES 12 INCHES 13 INCHES 14 INCHES 15 INCHES 16 INCHES 17 INCHES 18 INCHES 19 INCHES 20 INCHES 21 INCHES 22 INCHES 23 INCHES 24 INCHES

Drawing Title:
STAIR No. 1 SECTION & DETAIL PLANS
PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A7.1
OVERALL DRAWING SCALE: 1/4" = 1' - 0"

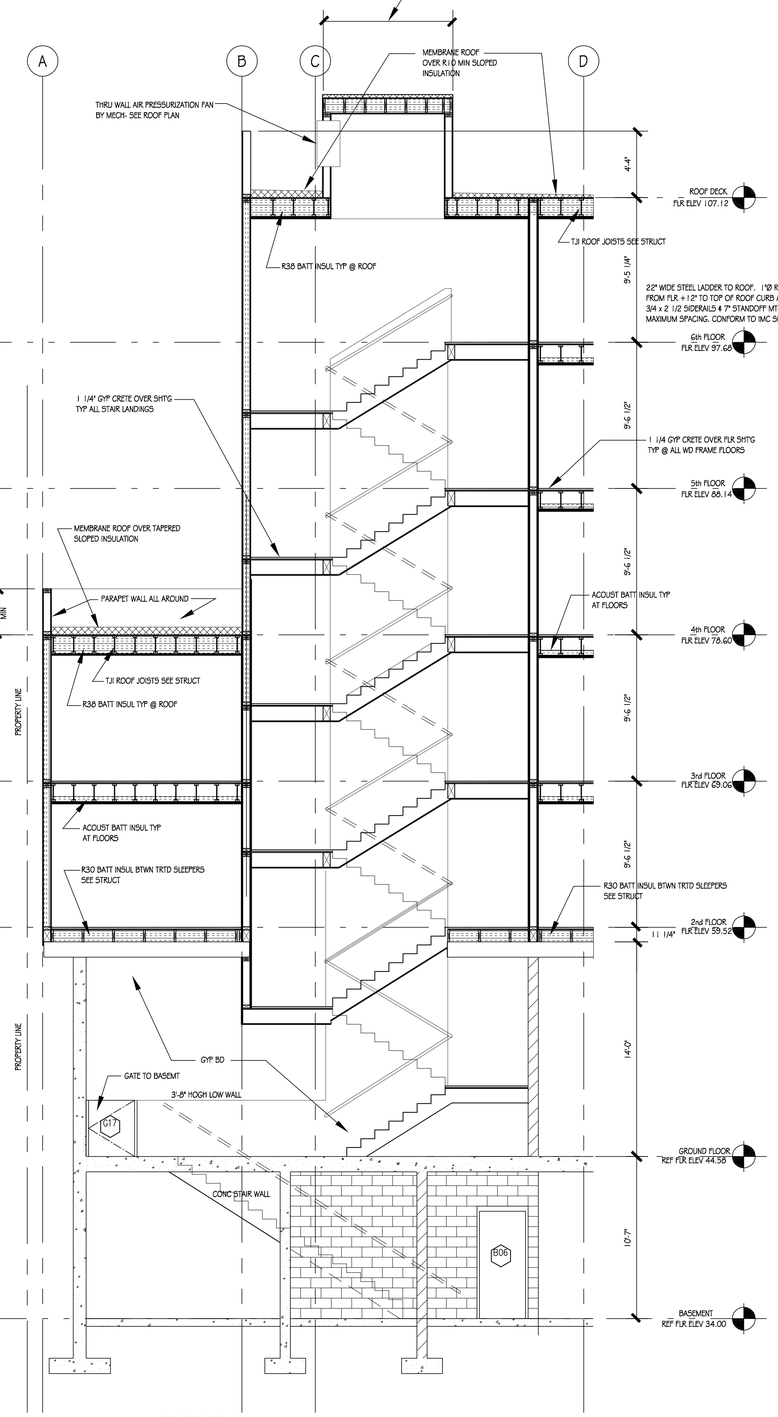
TYP STAIR & FLOOR LEVEL I.D. SIGN



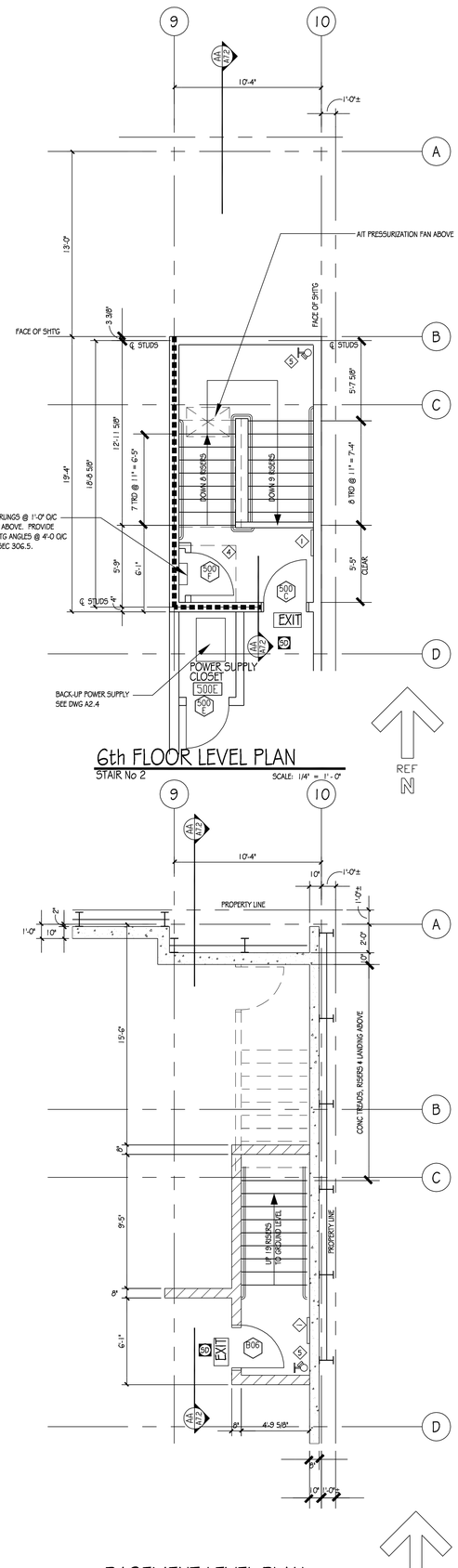
EXAMPLE TEXT ONLY SHOWN - ADJUST TO SUITABLE WORDING FOR EACH FLOOR # EACH CONDITION OF INSTALLATION PROVIDE RAISED LETTERS AND/OR BRAILLE TO COMPLY WITH ANSI A117.1

KEY NOTES:

1. TYPICAL STAIR FLOOR LEVEL SIGN SEE DETAIL TH15 DWG
2. SIGN: "BASEMENT ACCESS NO EXIT"
3. SIGN: "GROUND LEVEL PARKING" SIMILAR TO TYP STAIR SIGN
4. ROOF HATCH ABOVE SEE ROOF PLAN
5. CLASS I STANDPIPE CONN

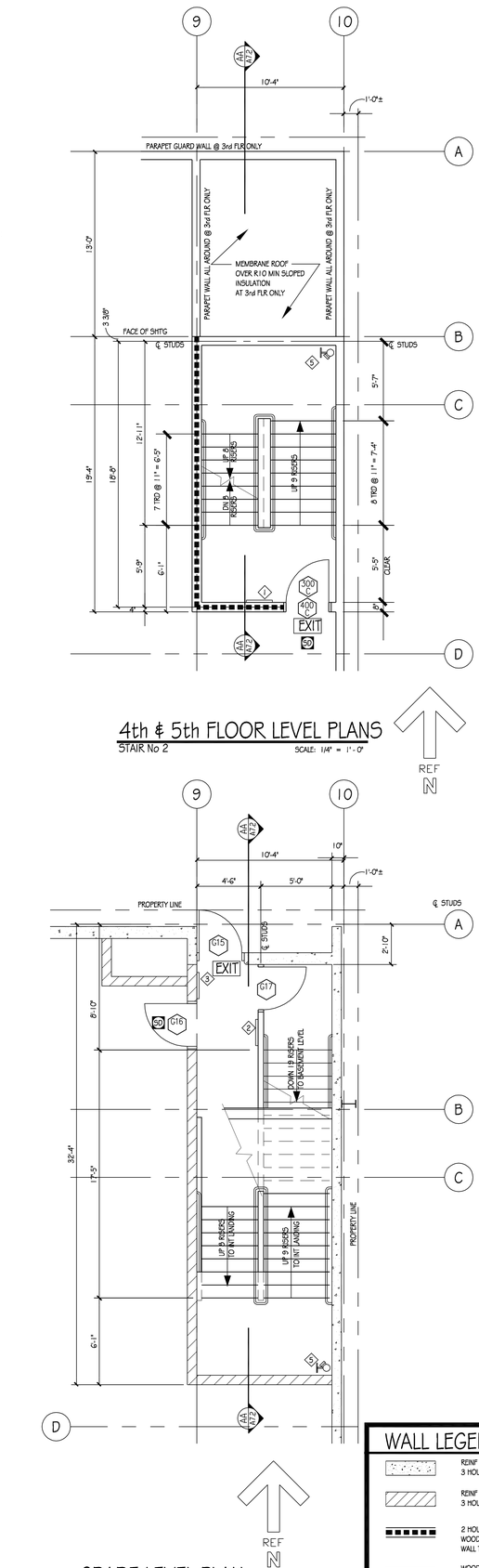


SECTION A-A
STAIR No 2 SCALE: 1/4" = 1'-0"

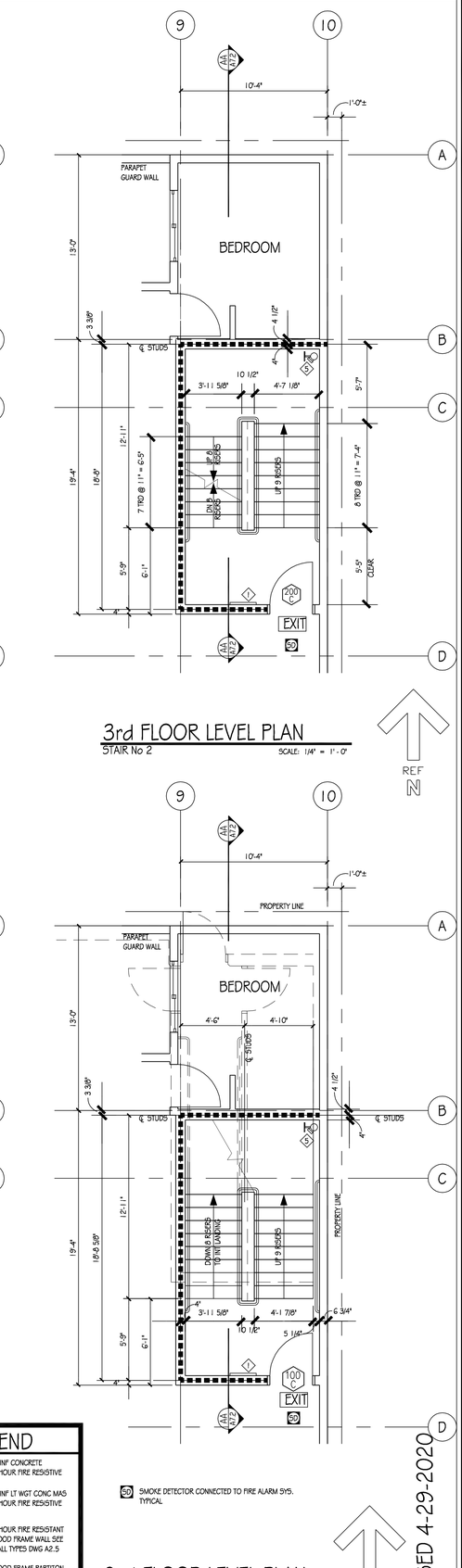


6th FLOOR LEVEL PLAN
STAIR No 2 SCALE: 1/4" = 1'-0"

BASEMENT LEVEL PLAN
STAIR No 2 SCALE: 1/4" = 1'-0"



4th & 5th FLOOR LEVEL PLANS
STAIR No 2 SCALE: 1/4" = 1'-0"



3rd FLOOR LEVEL PLAN
STAIR No 2 SCALE: 1/4" = 1'-0"

GRADE LEVEL PLAN
STAIR No 2 SCALE: 1/4" = 1'-0"

2nd FLOOR LEVEL PLAN
STAIR No 2 SCALE: 1/4" = 1'-0"

WALL LEGEND

- REINF CONCRETE 3 HOUR FIRE RESISTIVE
- REINF LT WGT CONC MAS 3 HOUR FIRE RESISTIVE
- 2 HOUR FIRE RESISTANT WOOD FRAME WALL SEE WALL TYPES DWG A2.5
- WOOD FRAME PARTITON SEE DWG A2.5 FOR MORE DETAILED DESCRIPTION

50 SMOKE DETECTOR CONNECTED TO FIRE ALARM SYS. TYPICAL

REVISED 4-29-2020

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ENGINEER'S SEAL

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ISSUE	DATE

HARBORSIDE APARTMENTS

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1000 ASTOR STREET #101, BELLINGHAM, WA 98225

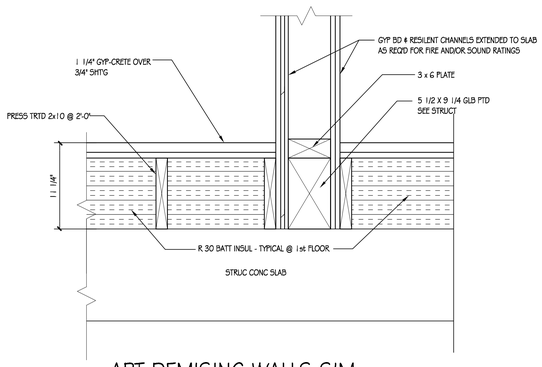
ARA Architects
Roger Axelson NCARB Certified
1717 Broadway Suite 201
Bellingham, Washington 98225
Project Architect - Roger Axelson
PH:(360)-671-1933 / E-Mail: ARA@ara-services.net

Drawing Title:
STAIR No. 2 SECTION & DTL PLANS

PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

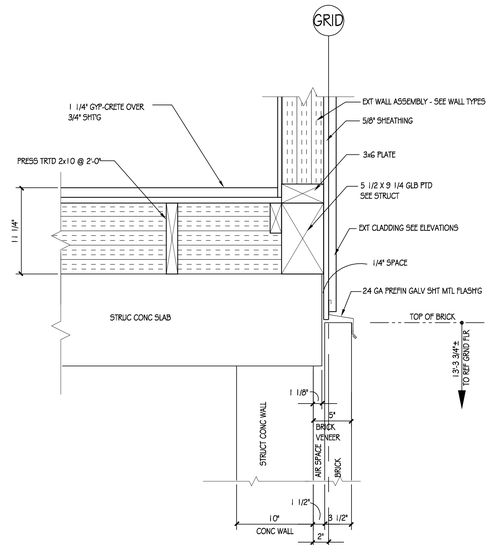
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A7.2
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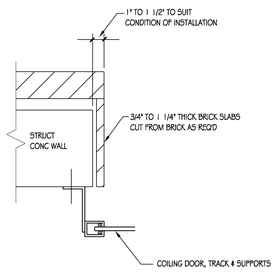
APT DEMISING WALLS SIM
INT 2 HR WALL (SHAFT WALL SIM)

21 1st FLOOR INT WALL @ FLOOR

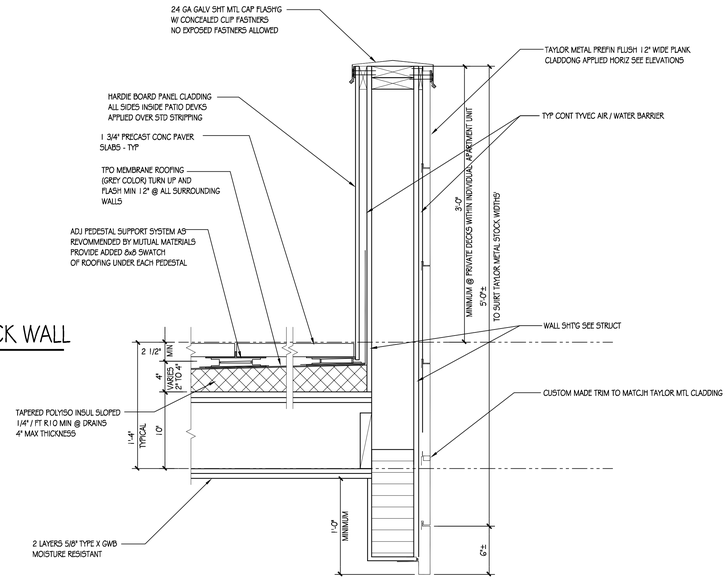


EXT. FLOOR WALL @ 1ST FLOOR LINE
1st FLOOR EXT WALL @ FLOOR

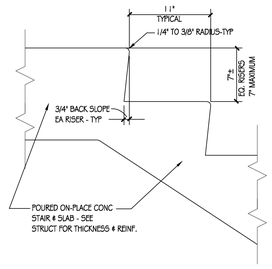
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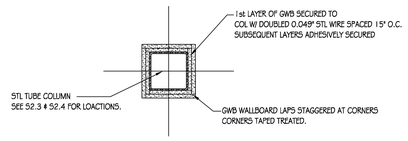
25 OPENING JAMB @ CONC / BRICK WALL
STOREFRONT OPNGS SIMILAR



27 TYP PARAPET GUARD WALL - 2nd & 3rd FLOOR
ACCESSED BY ONE APT ONLY

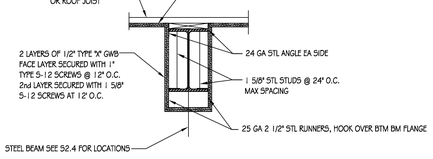


31 TYPICAL CONCRETE STAIR TREAD



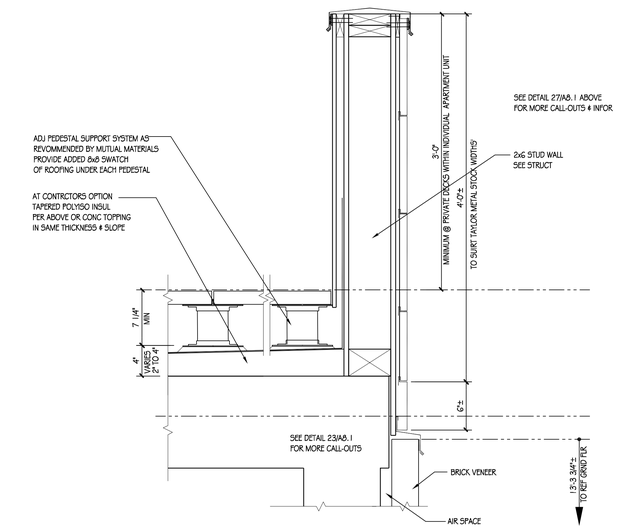
33 1 HR. STL COLUMN FIRE PROTECTION
TYPICAL

ONE HOUR FIRE RATED:
IBC TABLE 721.1(1) ITEM 1-7.1

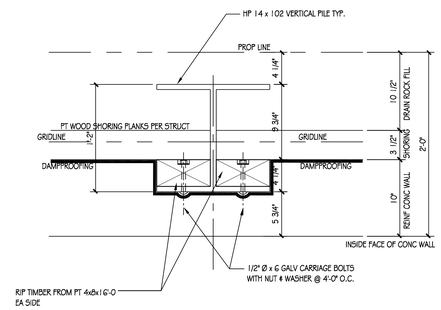


35 1 HR. STL BEAM FIRE PROTECTION
TYPICAL

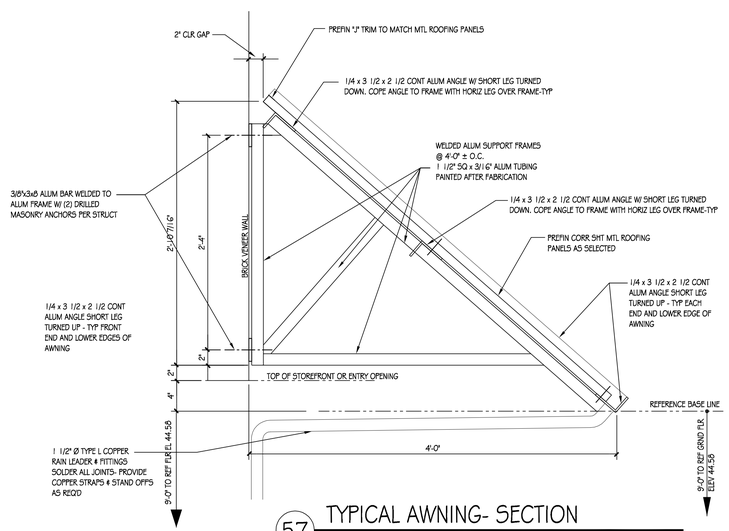
ONE HOUR FIRE RATED:
GA FILE BM 1137 BASED ON UL 524
UL R1319-133, 7-16-75; UL R3660-7 & 8, 11-12-87



37 TYP PARAPET GUARD WALL - 1st FLOOR
ACCESSED BY ONE APT ONLY



51 TYPICAL SHORING DETAIL- SEE STRUCTURAL



57 TYPICAL AWNING- SECTION

REVISED 8-18-2020

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ENGINEER'S SEAL

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HARBORSIDE APARTMENTS

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ARA Architects
Roger Axelson NCARB Certified
1313 Bay Street, Suite 208
Bellingham, Washington 98225
Project Architect - Roger Axelson
Ph:360-671-0933 / E-Mail: RA@ara-services.net

PHOTO REDUCTION SCALE — 1 INCH — 2 INCHES — 3 INCHES — 4 INCHES

Drawing Title:
MISC DETAILS

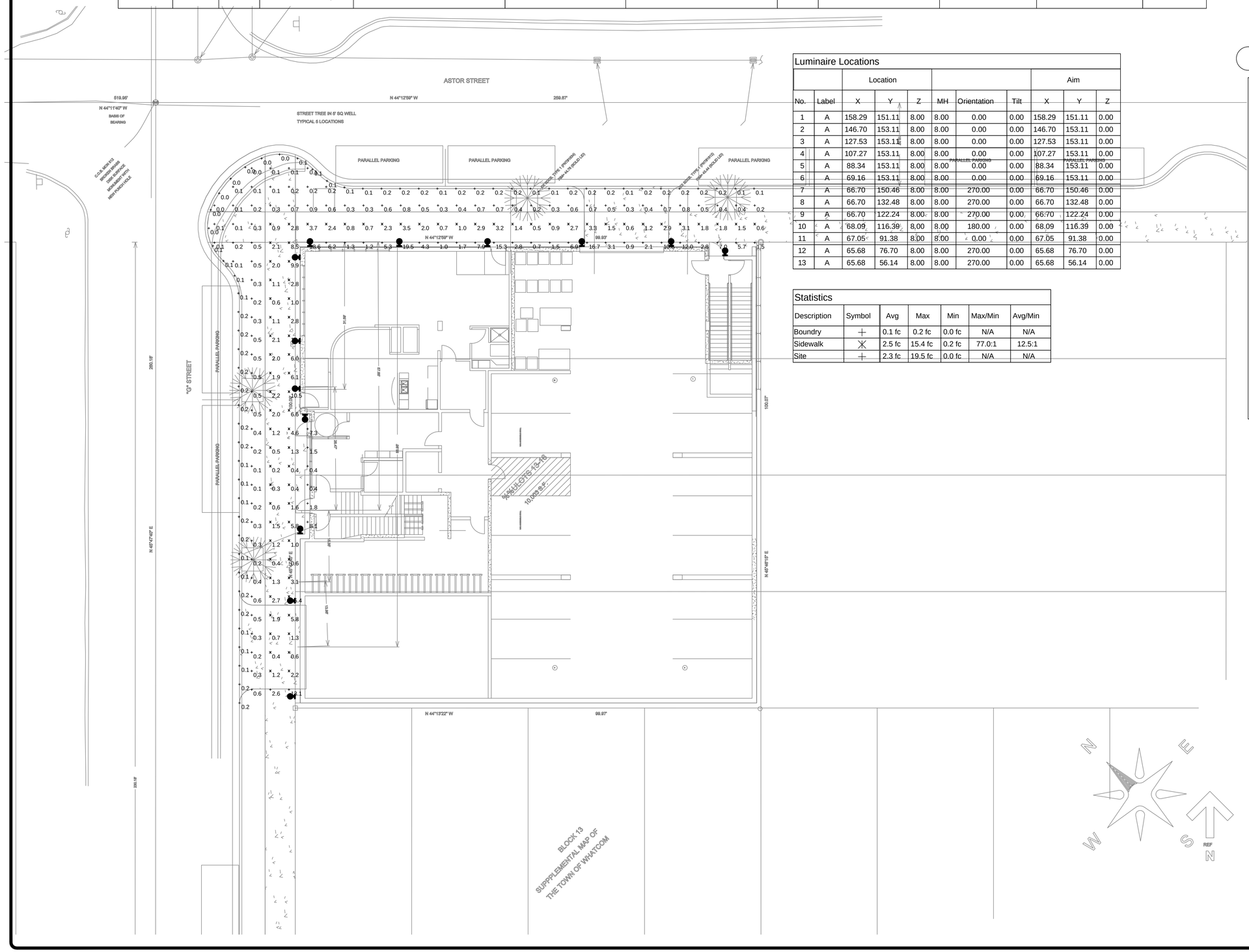
PROJECT NO. : 180701
DRAWN BY: JRA
DATE: JAN 20, 2020

Drawing No.
A8.1

OVERALL DRAWING
SCALE: 1 1/2" = 1' - 0"

PHOTO REDUCTION SCALE — 0" — 1 INCH — 2 INCHES — 3 INCHES — 4 INCHES — 0" — 1" INCH — 2" INCHES — 3" INCHES — 4" INCHES

Schedule											
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	A	13	WAC Lighting	WS-W2605 B081613	Wall Cylinder light	BXRA-30E1200-B	1	WS-W2605.ies	1145	1	18.1



Luminaire Locations

		Location						Aim		
No.	Label	X	Y	Z	MH	Orientation	Tilt	X	Y	Z
1	A	158.29	151.11	8.00	8.00	0.00	0.00	158.29	151.11	0.00
2	A	146.70	153.11	8.00	8.00	0.00	0.00	146.70	153.11	0.00
3	A	127.53	153.11	8.00	8.00	0.00	0.00	127.53	153.11	0.00
4	A	107.27	153.11	8.00	8.00	0.00	0.00	107.27	153.11	0.00
5	A	88.34	153.11	8.00	8.00	0.00	0.00	88.34	153.11	0.00
6	A	69.16	153.11	8.00	8.00	0.00	0.00	69.16	153.11	0.00
7	A	66.70	150.46	8.00	8.00	270.00	0.00	66.70	150.46	0.00
8	A	66.70	132.48	8.00	8.00	270.00	0.00	66.70	132.48	0.00
9	A	66.70	122.24	8.00	8.00	270.00	0.00	66.70	122.24	0.00
10	A	68.09	116.39	8.00	8.00	180.00	0.00	68.09	116.39	0.00
11	A	67.05	91.38	8.00	8.00	0.00	0.00	67.05	91.38	0.00
12	A	65.68	76.70	8.00	8.00	270.00	0.00	65.68	76.70	0.00
13	A	65.68	56.14	8.00	8.00	270.00	0.00	65.68	56.14	0.00

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Boundry	+	0.1 fc	0.2 fc	0.0 fc	N/A	N/A
Sidewalk	×	2.5 fc	15.4 fc	0.2 fc	77.0:1	12.5:1
Site	+	2.3 fc	19.5 fc	0.0 fc	N/A	N/A

SPEC SHEET
FIXTURE TYPE A

TUBE - model: WS-W26
LED Wall Mount

WAC LIGHTING
Responsible Lighting®



Fixture Type: TYPE A
Catalog Number: WS-W2605-BZ
Project: HARBORSIDE APARTMENTS
Location: EXTERIOR SCONCES

PRODUCT DESCRIPTION
Precise engineering using the latest energy efficient LED technology with a built-in reflector for superior optics: An appealing cylindrical profile with a powerful LED down light perfect for accent and wall wash lighting.

FEATURES
- IP65 Rated, ETL & cETL Wet Location Listed
- Mounts up or down
- Die-Cast Aluminum Construction
- Universal Voltage Input (120V - 277V)
- Dimming: ELV (120V) or 0-10V

SPECIFICATIONS
Construction: Aluminum with etched glass.
Power: Integral driver in luminaire, 120V - 277V input.
Light Source: High output LED
Mounting: Mounts directly to junction box
Dimming: 0-10V Dimming: 100%-10%
ELV Dimming: 100%-15% (120V only)
Finish: Brushed Aluminum (AL), Black (BK), Bronze (BZ), Graphite (GH), White (WT)
Color Temp: 3000K
CRI: 90
Rated Life: 70,000 hours
Standards: IP65 Rated, ETL & cETL Wet Location Listed, Dark Sky Friendly.



WS-W2605 – BZ
Example: **WS-W2604-BZ**

WAC Lighting
www.waclighting.com
Phone (800) 526.2588 • Fax (800) 526.2585

Headquarters/Eastern Distribution Center
44 Harbor Park Drive • Port Washington, NY 11050
Phone (516) 515.5000 • Fax (516) 515.5010

Western Distribution Center
1750 Archibald Avenue • Ontario, CA 91760
Phone (800) 526.2588 • Fax (800) 526.2585

WAC Lighting retains the right to modify the design of our products at any time as part of the company's continuous improvement programs. SEP 2017

NORTHWEST ELECTRICAL CONTRACTORS ASSOCIATION
CLC #1294
08/01/2020

North Coast Lighting
Lighting Design Services
For Project information or quote call (425) 454-2122

NORTHWEST ELECTRICAL CONTRACTORS ASSOCIATION
CLC #10015
07/31/2019

SITE LIGHTING PLAN

HARBORSIDE APARTMENTS

1310 "G" STREET – BELLINGHAM, WA 98225

Revisions
1 –
2 –
3 –
4 –

Drawn	Checked
AJT	AJT

Date: 17 APR 2019

Sheet: OF 1

Scale: 1" = 10'

Job:

GENERAL SHORING NOTES

(The following apply unless shown otherwise on the plans)

CRITERIA

1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, THE 2015 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).

2. REFERENCE DRAWINGS:
   A. GEOTECHNICAL ENGINEERING REPORT BY GEOTEST "GEOTECHNICAL ENGINEERING EVALUATION HARBORSIDE APARTMENTS" PROJECT NUMBER 19-0171, DATED MAY 17, 2019.

3. DESIGN LOADS : THE SOIL PRESSURE DIAGRAM SHOWN ON S/SH-1 WERE USED FOR DESIGN.

4. SITE CONDITIONS : DESIGN ASSUMPTIONS ON SITE CONDITIONS HAVE BEEN MADE BASED ON THE GEOTECHNICAL REPORT THAT WAS CITED ABOVE. GROUNDWATER WAS NOT OBSERVED ACCORDING TO THE BORING LOGS PROVIDED BY GEOTEST INC. AND NOT CONSIDERED IN THIS DESIGN. SHALL CONDITIONS ON SITE CHANGE, MJH ENGINEERING SHALL BE INFORMED IMMEDIATELY.

5. SUBMITTALS : SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO ANY FABRICATION OR CONSTRUCTION FOR ALL STRUCTURAL ITEMS INCLUDING THE FOLLOWING: STRUCTURAL STEEL, MISCELLANEOUS METAL, GROUTS, AND CONCRETES. PROPOSED DEMOLITION AND SHORING SEQUENCE SHALL ALSO BE SUBMITTED TO THE ENGINEER FOR REVIEW.

6. SPECIAL INSPECTION : PILE PLACEMENT, SHALL BE INSPECTED BY THE STRUCTURAL ENGINEER. SPECIAL INSPECTIONS SHALL BE SUPERVISED BY A QUALIFIED TESTING AGENCY DESIGNATED BY THE OWNER IN ACCORDANCE WITH SECTIONS 1704 & 1705 OF THE IBC, THE TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE OWNER, ARCHITECT, STRUCTURAL ENGINEER, CONTRACTOR AND THE BUILDING OFFICIAL. ANY MATERIALS WHICH FAIL TO MEET PROJECT SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. SPECIAL INSPECTIONS SHALL BE PROVIDED FOR CONCRETE WORK, REINFORCEMENT PLACEMENT, STRUCTURAL STEEL FABRICATION, ERECTION, AND WELDING.

7. UTILITY LOCATION: THE SHORING CONTRACTOR SHALL DETERMINE AND/OR VERIFY THE LOCATION OF ALL ADJACENT UNDERGROUND UTILITIES PRIOR TO DRILLING PILE HOLES, AND/OR CUTTING OR DIGGING IN STREETS OR ALLEYS. METHODS FOR DETERMINING AND/OR VERIFYING THE LOCATIONS SHALL INCLUDE BUT NOT BE LIMITED TO REVIEW OF CREDIBLE AS-BUILT DRAWINGS AND POTHOLING. THE UTILITIES INFORMATION SHOWN ON THE DRAWINGS, IF ANY, MAY NOT BE COMPLETE OR CORRECT.

8. VERIFICATION: CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LOCATION OF EXISTING STRUCTURES PRIOR TO FABRICATION AND INSTALLATION OF ANY STRUCTURAL MEMBER. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL DISCREPANCIES IN DIMENSIONS AND ALL FIELD CHANGES PRIOR TO FABRICATION AND INSTALLATION.

9. SOILS: SEE GEOTECHNICAL REPORT AND DOCUMENTS REFERENCED ABOVE FOR SPECIFIC INFORMATION AND RECOMMENDATIONS FOR SHORING, SHORING MONITORING, EXCAVATION, LAGGING, AND DRAINAGE BEHIND LAGGING. SPECIFIC SOIL AND SHORING INFORMATION WAS NOT PROVIDED IN THE ABOVE REFERENCED GEOTECHNICAL REPORT. GEOTEST SHOULD BE CONTACTED TO CLARIFY SPECIFIC RECOMMENDATIONS.

CONCRETE

10. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH ACI 301 AND IBC SECTION 1905. CONSTRUCTION TOLERANCES SHALL NOT EXCEED THOSE LISTED IN ACI 117. STRENGTHS AT 28 DAYS AND MIX CRITERIA SHALL BE AS FOLLOWS:

TYPE OF CONSTRUCTION	28 DAY STRENGTH (f'c)	MAXIMUM SLUMP	MINIMUM CEMENT CONTENT PER CUBIC YARD
A. PILES	NA	NA	1-1/2 SACKS

* MIXES SHALL BE PROPORTIONED TO NOT EXCEED THE MAXIMUM SLUMPS INDICATED

THE MINIMUM AMOUNT OF CEMENT AND THE MAXIMUM SLUMP MAY BE CHANGED IF A CONCRETE PERFORMANCE MIX IS SUBMITTED TO THE STRUCTURAL ENGINEER AND WHATCOM COUNTY PUBLIC WORKS FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE. THE PERFORMANCE MIX SHALL INCLUDE THE AMOUNTS OF CEMENT, CEMENTITIOUS MATERIAL, FINE AND COARSE AGGREGATE, WATER AND ADMIXTURES AS WELL AS THE WATER/CEMENT RATIO, SLUMP, CONCRETE YIELD AND SUBSTANTIATING STRENGTH DATA IN ACCORDANCE WITH ACI 301. CHEMICAL ADMIXTURES AND FLY ASH SHALL CONFORM TO ASTM C494 AND C618 RESPECTIVELY. FLY ASH PERCENTAGE OF TOTAL CEMENTITIOUS MATERIAL SHALL NOT EXCEED 20%. THE USE OF A PERFORMANCE MIX REQUIRES BATCH PLANT INSPECTION, THE COST OF WHICH SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER. REVIEW OF MIX SUBMITTALS BY THE ENGINEER OF RECORD INDICATES ONLY THAT INFORMATION PRESENTED CONFORMS GENERALLY TO CONTRACT DOCUMENTS. CONTRACTOR MAINTAINS FULL RESPONSIBILITY FOR SPECIFIED PERFORMANCE.

STEEL

11. STRUCTURAL STEEL DESIGN, FABRICATION, AND ERECTION SHALL BE BASED ON THE LATEST EDITIONS OF THE A.I.S.C. SPECIFICATIONS AND CODES:

12. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

TYPE OF MEMBER	ASTM SPECIFICATION	Fy
A. HP SHAPES	A572	50 KSI
B. PLATES	A36	36 KSI

SUBSTITUTION OF MEMBER SIZES OR STEEL GRADE SHALL NOT BE ALLOWED WITHOUT PRIOR APPROVAL OF THE ENGINEER. STEEL BEAMS ARE EQUALLY SPACED BETWEEN DIMENSIONED POINTS. ALL STEEL ANCHORS AND TIES AND OTHER MEMBERS EMBEDDED IN CONCRETE OR MASONRY SHALL BE LEFT UNPAINTED. ALL STEEL TO BE FIREPROOFED SHALL BE LEFT UNPAINTED. ALL OTHER STEEL SHALL HAVE ONE COAT OF APPROVED SHOP PAINT.
STRUCTURAL STEEL AND CONNECTIONS EXPOSED TO WEATHER OR EARTH SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION IN COMPLIANCE WITH ASTM A123. ALL FIELD WELDS EXPOSED TO WEATHER OR EARTH SHALL BE COATED WITH BRUSH APPLIED ZINC RICH PAINT COMPLYING WITH ASTM A780 (Z.R.C. OR EQUIVALENT).

13. ALL WELDING SHALL BE IN CONFORMANCE WITH A.I.S.C. AND A.W.S. STANDARDS AND SHALL BE PERFORMED BY W.A.B.O. CERTIFIED WELDERS USING E70 XX ELECTRODES. ONLY PREQUALIFIED WELDS (AS DEFINED BY A.W.S.) SHALL BE USED.

WOOD

14. FRAMING LUMBER : SHALL BE KILN DRIED OR MC-19 (MOISTURE CONTENT LESS THAN 19%), AND GRADED AND MARKED IN CONFORMANCE WITH W.C.L.I.B. STANDARD NO. 17 GRADING RULES FOR WEST COAST LUMBER. FURNISH TO THE FOLLOWING MINIMUM STANDARDS:

LAGGING: (P/T 4x12) . . . . . DOUGLAS FIR NO. 2

TIMBER LAGGING SHALL BE PRESSURE TREATED WITH WATERBORNE PRESERVATIVES IN ACCORDANCE WITH AWPB STANDARD 31, USE CATEGORY 4A.

15. STEEL PILE TOLERANCES UNLESS NOTED OTHERWISE:
   1" INSIDE PERPENDICULAR TO SHORING WALL
   1" OUTSIDE PERPENDICULAR TO SHORING WALL
   3" LATERALLY
   1" OUT-OF-PLUMB AT BOTTOM OF EXCAVATION OR 0.5% OF THE EXCAVATION HEIGHT, WHICHEVER IS LESS.

16. SOLDIER PILE WALL SHORING PROCEDURE, UNLESS NOTED OTHERWISE:

   A. DEMOLITION : SHORING AND SOIL EXCAVATION SHALL BE DONE SIMULTANEOUSLY.

   B. HOLE DIGGING : PILE AND ANCHOR HOLES SHALL BE DRILLED WITHOUT LOSS OF GROUND AND WITHOUT ENDANGERING PREVIOUSLY INSTALLED PILES AND ANCHORS, THIS MAY INVOLVE CASING THE HOLES OR OTHER METHODS OR PROTECTION FROM CAVING. REFER TO GEOTECHNICAL REPORT FOR RECOMMENDED HOLE DIGGING PROCEDURES AND SEQUENCING.

   C. PILE PLACEMENT : ALTERNATE PILES TO BE PLACED AND COMPLETED SO THAT AT LEAST 12 HOURS IS ALLOWED FOR THE CONCRETE TO SET PRIOR TO DRILLING ADJACENT PILES.

   D. LAGGING : TIMBER LAGGING SHALL BE INSTALLED IN ALL AREAS DURING SAME WORK SHIFT THAT THE VERTICAL CUT IS MADE. VOIDS BETWEEN LAGGING AND SOIL SHALL BE BACKFILLED WITH FREE-DRAINING BACKFILL IN THE SAME WORK SHIFT THAT THE LAGGING IS BEING PLACED. DRAINAGE BEHIND THE WALL MUST BE MAINTAINED PER THE GEOTECHNICAL ENGINEER RECOMMENDATIONS. IT IS THE CONTRACTOR S RESPONSIBILITY TO LIMIT THE AMOUNT OF EXPOSED SOIL WITHOUT LAGGING TO AVOID LOSS OF SOIL. A MAXIMUM UN-SHORED CUT OF 4 FEET IS ALLOWED BEFORE LAGGING MUST BE INSTALLED. THIS UN-SHORED SOIL HEIGHT MAY BE REVISED IN THE FIELD BASED ON ACTUAL CONDITIONS ENCOUNTERED. SPECIAL CARE SHALL BE TAKEN TO AVOID GROUND LOSS DURING EXCAVATION. NO EXCAVATION FOR THE IMMEDIATE LOWER LIFT IS PERMITTED UNTIL THE ONGOING LIFT IS BACKFILLED APPROPRIATELY.

   E. SHORING MONITORING : A SYSTEMATIC PROGRAM OF OBSERVATION SHALL BE CONDUCTED DURING THE PROJET EXECUTION TO DETERMINE THE EFFECT OF CONSTRUCTION ON ADJACENT FACILITIES STRUCTURES AND STREETS, IN ORDER TO PROTECT THEM FROM DAMAGE. THE MONITORING SHALL BE PERFORMED BY A LICENSED SURVEYOR, NOT THE CONTRACTOR, WITH MONITORING POINTS ESTABLISHED ON SETTLEMENT-SENSITIVE STRUCTURES (BUILDINGS, MANHOLES, UTILITY POLES, ETC.) AROUND THE EXCAVATION. AT EVERY OTHER PILE ALONG THE SHORING WALL, AND ON CURB LINES OF ALL STREETS SURROUNDING THE SITE WITH SPACING NO GREATER THAN 25 FEET, POINTS SHALL BE MONITORED BEFORE ANY CONSTRUCTION ACTIVITES SUCH AS DEWATERING, GROUND IMPROVEMENTS, OR SHORING INSTALLATION.

   MONITORING SHALL BE PERFORMED AT LEAST TWICE A WEEK DURING THE EXCAVATION PHASE. SURVEY FREQUENCY MAY BE DECREASED AFTER THE SHORING SYSTEM HAS BEEN INSTALLED AND THE EXCAVATION HAS BEEN COMPLETED. IF THE SURVEY DATA INDICATES LITTLE TO NO ADDITIONAL MOVEMENT, THE DECREASED SURVEY FREQUENCY SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER BASED ON SHORING PERFORMANCE AND SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE COUNTY. SURVEYING MUST CONTINUE UNTIL THE PERMANENT STRUCTURE, IS COMPLETE UP TO FINAL GRADE.

   THE GEOTECHNICAL ENGINEER WILL REVIEW SURVEY DATA AND PROVIDE AN EVALUATION OF WALL PERFORMANCE AND A GRAPHICAL REPRESENTATION OF WALL MOVEMENT VS. TIME, ALONG WITH SURVEY DATA TO THE COUNTY ON A WEEKLY BASIS. IMMEDIATE AND DIRECTLY NOTIFY THE COUNTY IF ANY UNUSUAL OF SIGNIFICANTLY INCREASED MOVEMENT OCCURS. IMMEDIATELY AND DIRECTLY NOTIFY THE GEOTECHNICAL AND STRUCTURAL ENGINEERS, WALL DESIGNERS, AND COUNTY IF 0.5 (0.25 INCH ADJACENT TO EXISTING STRUCTURES) INCHES OF MOVEMENT OCCURS BETWEEN TWO CONSECUTIVE READINGS AND WHEN TOTAL MOVEMENTS REACH 0.5 INCH (0.25 INCH ADJACENT TO EXISTING STRUCTURES). AT THAT AMOUNT OF MOVEMENT, THE ENGINEERS AND DESIGNERS SHALL DETERMINE THE CAUSE OF DISPLACEMENT AND DEVELOP REMEDIAL MEASURES SUFFICIENT TO LIMIT TOTAL WALL MOVEMENTS TO 1 INCH (0.5 INCH ADJACENT TO EXISTING STRUCTURES). ALL EARTHWORK AND CONSTRUCTION ACTIVITIES MUST BE DIRECTED TOWARDS IMMEDIATE IMPLEMENTATION OF REMEDIAL MEASURES NECESSARY TO LIMIT TOTAL WALL MOVEMENTS TO WHAT HAS BEEN DEFINED AS ACCEPTABLE BY THE DESIGN TEAM AND THE COUNTY.

   F. ALL SLOPES : SHALL BE PROTECTED PER THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.

STRUCTURAL OBSERVATION

AS NOTED IN IBC SECTION 1704.6, STRUCTURAL OBSERVATION IS REQUIRED FOR THIS PROJECT. STRUCTURAL OBSERVATION MEANS THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM, INCLUDING BUT NOT LIMITED TO, THE ELEMENTS AND CONNECTIONS AT SIGNIFICANT CONSTRUCTION STAGES AND THE COMPLETED STRUCTURE FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY OF THE INSPECTIONS REQUIRED BY IBC SECTIONS 110 AND 1704.

IN OUR STRUCTURAL OBSERVATION, WE WILL SELECT PORTIONS OF WORK TO REVIEW CLOSELY AS WELL AS OBSERVE THE STRUCTURAL SYSTEM FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. SUCH REVIEW PROCEDURES WILL BE CONDUCTED IN ACCORDANCE WITH COMMONLY ACCEPTED STANDARDS OF PRACTICE. THE BUILDING OFFICIAL UNDERSTANDS THAT SUCH PROCEDURES INDICATE ACTUAL CONDITIONS ONLY WHERE THE REVIEW IS PERFORMED AND THAT THE RESULTS WILL BE INFERRED TO EXIST IN OTHER AREAS NOT REVIEWED.

WHATCOM COUNTY PUBLIC WORKS ALSO RECOGNIZES THAT STRUCTURAL REVIEW IS A TECHNIQUE EMPLOYED TO MINIMIZE THE RISK OF PROBLEMS ARISING DURING CONSTRUCTION. STRUCTURAL OBSERVATION BY THE DESIGN PROFESSIONAL DOES NOT CONSTITUTE WARRANTY OR GUARANTEE OF ANY TYPE. IN ALL CASES, THE CONTRACTOR SHALL RETAIN RESPONSIBILITY FOR THE QUALITY OF WORK AND FOR ADHERENCE TO THE APPROVED PLANS AND SPECIFICATIONS.

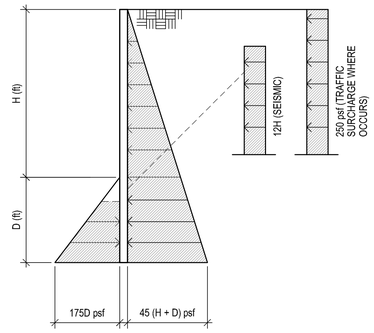
Provide agreement form for structural observation and special inspection of shoring.
https://cob.org/wp-content/uploads/021-special-inspection.pdf

Note, where structural observation is used, per IBC 1704.6:
Prior to the commencement of observations, the structural observer shall submit to the building official a written statement identifying the frequency and extent of structural observations.

At the conclusion of the work included in the permit, the structural observer shall submit to the building official a written statement that the site visits have been made and identify any reported deficiencies that, to the best of the structural observer's knowledge, have not been resolved.

SHEET INDEX

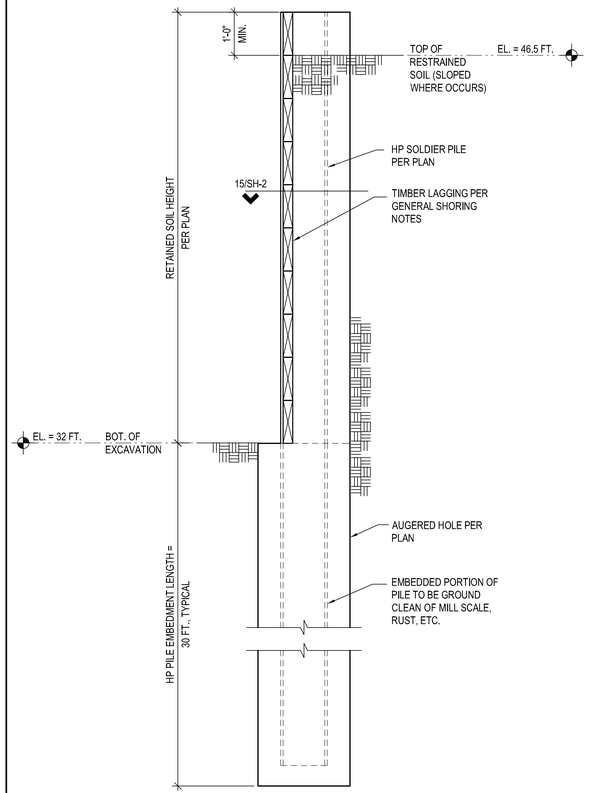
SH-1	GENERAL SHORING NOTES AND PRESSURE DIAGRAM
SH-2	SHORING PLAN AND DETAILS



PASSIVE PRESSURE ACTIVE PRESSURE

CANTILEVER PILE

TYPICAL SOLDIER PILE WALL PRESSURE DIAGRAM SCALE: NONE 5



TYPICAL SOLDIER PILE SECTION SCALE: NONE 20

ENGINEER'S SEAL
MICHAEL J. HARE
STATE OF WASHINGTON
25177
REGISTERED PROFESSIONAL ENGINEER
01/20/2020

ISSUE	DATE	No.	REVISION	DATE
PERMIT	01-20-20			

HARBORSIDE APARTMENTS
1310 "G" STREET
Bellingham, WA
For:
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

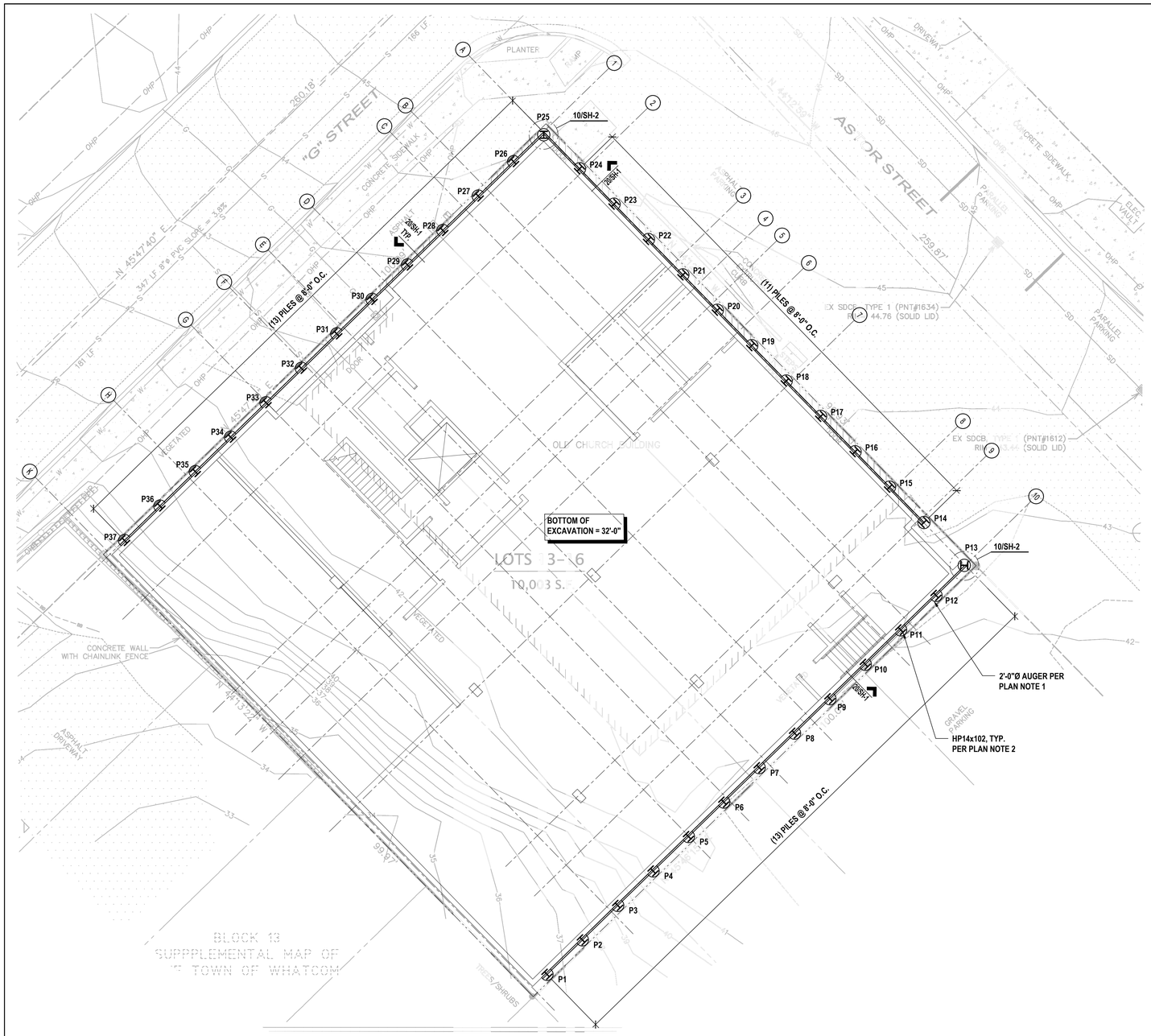
MJH ENGINEERING P.S.
consulting structural associates
Bellingham, WA 98228
Phone: (360)224-7358
email: mjhpe@comcast.net

Drawing Title:
GENERAL SHORING NOTES AND DETAILS

PROJECT NO. :
DRAWN BY: TA
DATE: 1/20/2020

Drawing No.
SH-1

PHOTO REDUCTION SCALE 0" 1 INCH 2 INCHES 3 INCHES 4 INCHES 5 INCHES 6 INCHES



PLAN NOTES:

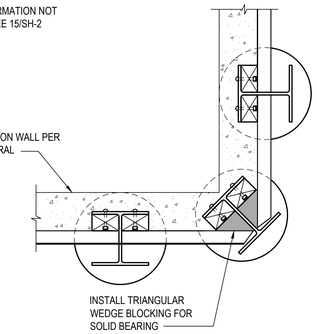
1. DRILLED SOLDIER PILE HOLES SHALL BE 2'-0" DIAMETER, UNLESS OTHERWISE NOTED.
2. TYPICAL PILE TO BE HP14x102. RETAINED HEIGHT "H" = 15'-0". EMBEDMENT = 30'-0". PILE LENGTH = 45'-0".
3. GEOTECHNICAL ENGINEER SHALL REVIEW ALL SLOPE CUTS AND DETERMINE IF ADDITIONAL MEASURES ARE NEEDED TO PROTECT SLOPE CUTS.
4. BOTTOM OF EXCAVATION ELEVATIONS SHOWN ON PLAN ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE WITH CIVIL AND STRUCTURAL DRAWINGS.
5. CONTRACTOR SHALL COORDINATE/SEQUENCE ALL SHORING WORK WITH THE STRUCTURAL CONCRETE WORK. SEE STRUCTURAL DRAWINGS.
6. TEMPORARY SHORING SHALL REMAIN IN PLACE UNTIL THE PERMANENT STRUCTURE, INCLUDING FLOOR SLAB, IS COMPLETELY UP TO THE FINAL GRADE AND HAS ATTAINED DESIGN STRENGTH.

SHORING PLAN

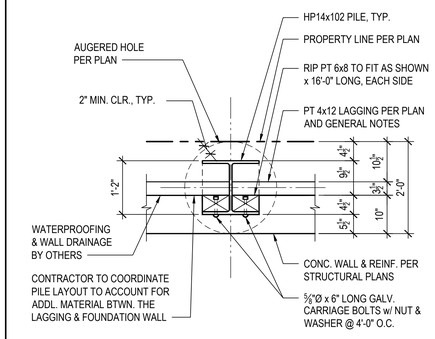
SCALE: 1/8" = 1'-0"

DETAIL SCALE: 3/4"=1'-0" 5

NOTE:
FOR INFORMATION NOT NOTED, SEE 15/SH-2



TYPICAL SOLDIER PILE CORNER DETAIL SCALE: 3/4"=1'-0" 10



TYPICAL LAGGING DETAIL AT HP PILE SCALE: 3/4"=1'-0" 15

DETAIL SCALE: 3/4"=1'-0" 20

ENGINEER'S SEAL
MICHAEL J. HARE
STATE OF WASHINGTON
36177
REGISTERED PROFESSIONAL ENGINEER
01/20/2020

No.	REVISION	DATE

ISSUE	DATE
PERMIT	01-20-20

HARBORSIDE APARTMENTS

1310 "G" STREET
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For:
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1000 ASTOR STREET #101, BELLINGHAM, WA 98225

MJH ENGINEERING P.S.
consulting structural associates
Bellingham, WA 98226
Phone: (360)224-7358
email: mjhpe@comcast.net

Drawing Title:
SHORING PLAN AND DETAILS

PROJECT NO. :
DRAWN BY: YA
DATE: 1/20/2020

Drawing No.
SH-2

PHOTO REDUCTION SCALE 0 1 INCH 2 INCHES 3 INCHES 4 INCHES

GENERAL STRUCTURAL NOTES

(The following apply unless shown otherwise on the plans)

CRITERIA

1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, THE 2015 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC) WITH WASHINGTON STATE AMENDMENTS.

2. DESIGN LOADING CRITERIA

ROOF SNOW LOAD	25 PSF
ROOF LIVE LOAD	10 PSF
PARTITION LIVE LOAD	15 PSF
PARTITION LIVE LOAD HORIZONTAL	5 PSF
FLOOR LIVE LOAD (PARKING)	40 PSF OR 3,000 LBS.
FLOOR LIVE LOAD (RESIDENTIAL)	40 PSF
FLOOR LIVE LOAD (RESIDENTIAL EXTERIOR DECKS AND BALCONIES)	60 PSF
STAIR AND EXITS LIVE LOAD	100 PSF
GUARDRAILS/BALCONY RAILS	50 PLF OR 200 LBS.
MECHANICAL UNITS	WEIGHTS FURNISHED BY MANUFACTURER

SNOW	ROOF SNOW LOAD = 25 PSF
	GROUND SNOW LOAD = 20 PSF
	EXPOSURE Ce = 1.00
	IMPORTANCE FACTOR Is = 1.00
	THERMAL FACTOR Ct = 1.00
WIND ANALYSIS PROCEDURE: ASCE 7-10 CHAPTER 27 "PART II - ENCLOSED SIMPLE DIAPHRAGM"	RISK CATEGORY II
	110 MPH
	EXPOSURE "C"
	TOPOGRAPHIC FACTOR Kzt = 1.0
CLADDING / WINDOW DESIGN PRESSURE (MAX.)	35 PSF
ROOFING DESIGN PRESSURE NOT AT A CORNER (MAX.)	44 PSF
ROOFING DESIGN PRESSURE AT CORNER (MAX.)	67 PSF

THE DESIGN WIND PRESSURES LISTED ABOVE ARE INWARD OR OUTWARD AND ARE BASED ON AN EFFECTIVE WIND AREA OF 10 SQUARE FEET NEAR A BUILDING CORNER, U.O.N. CORNER AND OTHER ZONES ARE DEFINED BY FIGURE 30.5-1 IN ASCE 7-10. REDUCED DESIGN PRESSURES MAY BE CALCULATED USING ASCE 7. NOTE THAT THE DESIGN WIND PRESSURES NOTED ABOVE ARE ULTIMATE VALUES PER THE 2015 IBC AND SHALL BE MULTIPLIED BY 0.6 FOR ALLOWABLE STRESS DESIGN.

EARTHQUAKE ANALYSIS PROCEDURE: IBC "EQUIVALENT LATERAL FORCE PROCEDURE"	SEISMIC DESIGN CATEGORY (SDC) = E
	RISK CATEGORY = II
	SEISMIC SITE CLASS = E
	IMPORTANCE FACTOR Ie = 1.0
	MAPPED MCE Ss = 0.61; S1 = 0.63
	DESIGN ACCELERATION Sds = 0.71; Sd1 = 0.41
SEISMIC RESISTING SYSTEM (WOOD SUPER-STRUCTURE): A-15 WOOD PANEL BEARING SHEAR WALL, R = 6.5	OMEGA=2.5, Cs= 0.09, BASE SHEAR= 175k
SEISMIC RESISTING SYSTEM (CONCRETE PODIUM STRUCTURE): A-1 SPECIAL REINFORCED CONCRETE SHEAR WALL, R= 5, OMEGA=2.5, Cs= 0.12, BASE SHEAR= 790 kips	

3. LATERAL LOADS ARE TRANSFERRED BY CONCRETE FLOOR DIAPHRAGMS AT THE CONCRETE LEVELS TO THE SHEAR WALLS. MOMENTS, SHEARS AND ROTATIONAL FORCES ARE BASED ON THE RIGIDITY OF EACH SHEAR WALL AND ARE CARRIED BY THE SHEAR WALLS TO THE FOUNDATION.

4. LATERAL LOADS ARE TRANSFERRED BY THE ROOF AND FLOOR DIAPHRAGMS TO THE SHEAR WALLS. FORCES ARE BASED ON THE TRIBUTARY AREA FOR EACH SHEAR WALL AND ARE CARRIED BY THE SHEAR WALLS TO THE PODIUM STRUCTURE.

5. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

6. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, MEMBER SIZES, AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED.

7. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

8. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THEIR WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES OF THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.

9. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.

10. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER. WHERE INFORMATION ON THE DRAWINGS IS IN CONFLICT WITH THE SPECIFICATIONS, THE MORE STRINGENT SHALL APPLY, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER. DO NOT SCALE THE DRAWINGS.

11. ALL STRUCTURAL SYSTEMS WHICH ARE COMPOSED OF FIELD ERECTED COMPONENTS SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.

12. SHOP DRAWINGS FOR REINFORCING STEEL (FOR BOTH CONCRETE AND MASONRY CONSTRUCTION), STUD RAILS, STRUCTURAL STEEL, GLUED LAMINATED MEMBERS, ENGINEERED I-JOISTS, & CONTINUOUS ROD HOLDOWN SYSTEMS SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION OF THESE ITEMS.

    CONTRACTOR SHALL SUBMIT WALL ELEVATION DRAWINGS OF AT LEAST 1/8" = 1' 0" SCALE INDICATING LOCATIONS OF CONNECTION EMBEDMENTS AND WALL OPENINGS FOR REVIEW PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH REINFORCEMENT SHOP DRAWINGS.

13. SHOP DRAWING REVIEW: DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE ENGINEER OF RECORD, AND THEREFORE MUST BE VERIFIED BY THE CONTRACTOR. CONTRACTOR SHALL REVIEW AND STAMP DRAWINGS PRIOR TO REVIEW BY ENGINEER OF RECORD. CONTRACTOR SHALL REVIEW DRAWINGS FOR CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND OPERATIONS OF CONSTRUCTION, AND ALL SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO. A MINIMUM OF TWO WEEKS SHALL BE ALLOWED FOR REVIEW.

14. SHOP DRAWING SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS. THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT, BY INDICATING WHICH MATERIAL IS INTENDED TO BE FURNISHED AND INSTALLED AND BY DETAILING THE INTENDED FABRICATION AND INSTALLATION METHODS. IF DEVIATIONS, DISCREPANCIES, OR CONFLICTS BETWEEN SHOP DRAWING SUBMITTALS AND THE CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER SHOP DRAWING SUBMITTALS ARE PROCESSED BY THE ENGINEER, THE DESIGN DRAWINGS AND SPECIFICATIONS SHALL CONTROL AND SHALL BE FOLLOWED.

15. SHOP DRAWINGS OF DESIGN BUILD COMPONENTS SHALL INCLUDE THE DESIGNING PROFESSIONAL ENGINEER'S STAMP REGISTERED IN WASHINGTON STATE AND SHALL BE APPROVED BY THE COMPONENT DESIGNER PRIOR TO CURSORY REVIEW BY THE ENGINEER OF RECORD FOR LOADS IMPOSED ON THE BASIC STRUCTURE. THE COMPONENT DESIGNER IS RESPONSIBLE FOR CODE CONFORMANCE AND ALL NECESSARY CONNECTIONS NOT SPECIFICALLY CALLED OUT ON ARCHITECTURAL OR STRUCTURAL DRAWINGS. SHOP DRAWINGS SHALL INDICATE MAGNITUDE AND DIRECTION OF ALL LOADS IMPOSED ON BASIC STRUCTURE. DESIGN CALCULATIONS SHALL BE MADE AVAILABLE UPON REQUEST.

16. SPECIAL INSPECTION: SHALL BE SUPERVISED BY A QUALIFIED TESTING AGENCY DESIGNATED BY THE OWNER IN ACCORDANCE WITH SECTIONS 1704 & 1705 OF THE IBC, THE PROJECT SPECIFICATIONS, AND THE SPECIAL INSPECTION SCHEDULE AT THE END OF THE STRUCTURAL NOTES. THE TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE OWNER, ARCHITECT, STRUCTURAL ENGINEER, CONTRACTOR AND THE BUILDING OFFICIAL. ANY MATERIALS WHICH FAIL TO MEET PROJECT SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.

17. SPECIAL INSPECTION: CONCRETE CONSTRUCTION, MASONRY CONSTRUCTION, STRUCTURAL STEEL FABRICATION AND ERECTION (INCLUDING FIELD WELDING), EXPANSION BOLTS AND THREADED EXPANSION INSERTS, SCREW ANCHORS, EPOXY GROUTED INSTALLATIONS, AND AUGERCAST PILE INSTALLATION, CAISSON INSTALLATION, OR DRIVEN PILE INSTALLATION SHALL BE SUPERVISED IN ACCORDANCE WITH IBC SECTIONS 1704 & 1705 AND THE PROJECT SPECIFICATIONS BY A QUALIFIED TESTING AGENCY DESIGNATED BY THE OWNER. THE TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE OWNER, ARCHITECT, STRUCTURAL ENGINEER, CONTRACTOR AND BUILDING OFFICIAL. ANY MATERIALS WHICH FAIL TO MEET PROJECT SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.

18. MECHANICAL UNIT CONNECTIONS TO THE BUILDING SHALL BE DESIGNED BY THE MANUFACTURER FOR THE DESIGN CRITERIA AND CONDITIONS SHOWN ON THE STRUCTURAL DRAWINGS. MANUFACTURER SHALL SUBMIT DETAIL DRAWINGS AND CALCULATIONS, BOTH OF WHICH BEAR THE STAMP AND SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER, STATE OF WASHINGTON. MANUFACTURER'S ENGINEER SHALL BE RESPONSIBLE FOR DESIGN, CODE CONFORMANCE, AND CONNECTION OF THE UNIT TO THE BASIC STRUCTURE. ALL NECESSARY BRACING, TIES, ANCHORAGE, DISTRIBUTION MEMBERS, AND SIMILAR ELEMENTS SHALL BE FURNISHED AND INSTALLED IN CONFORMANCE WITH SUBMITTED DRAWINGS AND CALCULATIONS.

GEOTECHNICAL

19. FOUNDATION NOTES: SUBGRADE PREPARATION INCLUDING DRAINAGE, EXCAVATION, COMPACTION, AND FILLING REQUIREMENTS, SHALL CONFORM STRICTLY WITH RECOMMENDATIONS GIVEN IN THE GEOTECHNICAL REPORT OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER. FOOTINGS SHALL BEAR ON SOLID UNDISTURBED EARTH (CONTROLLED, COMPACTED STRUCTURAL FILL OR BOTH) AT LEAST 18" BELOW LOWEST ADJACENT FINISHED GRADE. FOOTING DEPTHS/ELEVATIONS SHOWN ON PLANS (OR IN DETAILS) ARE MINIMUM AND FOR GUIDANCE ONLY; THE ACTUAL ELEVATIONS OF FOOTINGS MUST BE ESTABLISHED BY THE CONTRACTOR IN THE FIELD WORKING WITH THE TESTING LAB AND GEOTECHNICAL ENGINEER. UNLESS OTHERWISE NOTED, FOOTINGS SHALL BE CENTERED UNDER COLUMNS OR WALLS ABOVE.

    BACKFILL BEHIND ALL RETAINING WALLS WITH FREE DRAINING GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE AS NOTED IN THE GEOTECHNICAL REPORT.

    THE STRUCTURAL DESIGN IS BASED ON THE FOLLOWING VALUES FROM THE REFERENCED GEOTECHNICAL REPORT:

ALLOWABLE SOIL BEARING PRESSURE	5,000 PSF
LATERAL EARTH PRESSURE (RESTRAINED/UNRESTRAINED)	55 PCF/35 PCF
LATERAL EARTH PRESSURE w/ SLOPED BACKFILL (RESTRAINED/UNRESTRAINED)	75 PCF/55 PCF
SEISMIC SURCHARGE PRESSURE (RESTRAINED/UNRESTRAINED)	8H PSF/5H PSF
PASSIVE SOIL PRESSURE	350 PCF
SOIL COEFFICIENT OF FRICTION	0.35
SOIL DENSITY	120 PCF
TRAFFIC SURCHARGE	70 PSF
GEOTECHNICAL REPORT REFERENCE:	#19-0171 BY GEOTEST, INC. DATED MAY 17, 2019

20. SHORT AGGREGATE PIERS (SAPS) SHALL BE INSTALLED BENEATH STRUCTURAL FOOTINGS AND SLABS AS REQUIRED TO STRENGTHEN UNDERLYING SOILS. SPA'S SHALL BE CONSTRUCTED BY COMPACTION OR VIBRATION OF AGGREGATE USING DENSIFICATION EQUIPMENT SELECTED BY THE CONTRACTOR AND THE DESIGNER. SAP'S ARE NOT REQUIRED IN AREAS WHERE FOUNDATION WILL REST DIRECTLY ON DENSE NATIVE SOILS OR STRUCTURAL FILL IN ACCORDANCE WITH THE PROJECT SOILS REPORT. SAP'S SHALL BE A DEFERRED SUBMITTAL SUBMITTED IN ACCORDANCE WITH THE GENERAL NOTES. IN GENERAL, SAP'S SHALL BE INSTALLED DIRECTLY UNDER STRUCTURAL FOOTINGS AND SHALL BE DESIGNED SO THAT THE SOILS CAN ACHIEVE AN ALLOWABLE BEARING CAPACITY OF 5000 PSF. SAP'S UNDER SLABS SHALL BE DESIGNED TO MEET MINIMUM INDIVIDUAL SAP CAPACITY AND MAXIMUM SPACING REQUIREMENTS AS INDICATED IN THE DESIGNER'S DRAWINGS.

CONCRETE

21. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH ACI 301. CONSTRUCTION TOLERANCES SHALL NOT EXCEED THOSE LISTED IN ACI 117. STRENGTHS AT 28 DAYS AND MIX CRITERIA SHALL BE AS FOLLOWS:

TYPE OF CONSTRUCTION	28 DAY STRENGTH (f'c)	MAXIMUM SLUMP	MINIMUM CEMENT CONTENT PER CUBIC YARD	MAX. AGGREGATE SIZE
A. FOOTINGS, SLABS-ON-GRADE, TOPPING SLABS	4,000 PSI	5"	5-1/2 SACKS	1-1/4"
B. ALL STRUCTURAL CONCRETE EXCEPT WALLS	4,000 PSI	4"	6-1/2 SACKS	3/4"
C. CONCRETE WALLS	5,000 PSI	5"	6-1/2 SACKS	3/4"
D. POST-TENSIONED SLABS	SEE THE POST-TENSIONED CONCRETE SECTION OF THESE NOTES			
E. MILD REINFORCED SLABS	5,000 PSI	5"	6-1/2 SACKS	3/4"

MIXES SHALL BE PROPORTIONED SO AS NOT TO EXCEED THE MAXIMUM SLUMPS INDICATED (BEFORE THE ADDITION OF ADMIXTURES). THE WATER/CEMENT RATIO SHALL NOT EXCEED 0.55 FOR FOOTINGS AND 0.45 FOR ALL SLABS AND EXPOSED CONCRETE UNLESS OTHERWISE NOTED. LIGHTWEIGHT CONCRETE SHALL HAVE A MAXIMUM DENSITY OF 110 PCF.

THE MINIMUM AMOUNT OF CEMENT AND THE MAXIMUM SLUMP MAY BE CHANGED IF A CONCRETE PERFORMANCE MIX IS SUBMITTED TO THE STRUCTURAL ENGINEER AND THE BUILDING DEPARTMENT FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE. THE PERFORMANCE MIX SHALL INCLUDE THE AMOUNTS OF CEMENT, CEMENTITIOUS MATERIAL, FINE AND COARSE AGGREGATE, WATER AND ADMIXTURES AS WELL AS THE WATER/CEMENT RATIO, SLUMP, CONCRETE YIELD AND SUBSTANTIATING STRENGTH DATA IN ACCORDANCE WITH ACI 301. CHEMICAL ADMIXTURES AND FLY ASH SHALL CONFORM TO ASTM C494 AND C618 RESPECTIVELY. FLY ASH PERCENTAGE OF TOTAL CEMENTITIOUS MATERIAL SHALL NOT EXCEED 20%. THE USE OF A PERFORMANCE MIX REQUIRES BATCH PLANT INSPECTION, THE COST OF WHICH SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER. REVIEW OF MIX SUBMITTALS BY THE ENGINEER OF RECORD INDICATES ONLY THAT INFORMATION PRESENTED CONFORMS GENERALLY TO CONTRACT DOCUMENTS. CONTRACTOR MAINTAINS FULL RESPONSIBILITY FOR SPECIFIED PERFORMANCE.

ALL CONCRETE WITH SURFACES EXPOSED TO STANDING WATER SHALL BE AIR ENTRAINED WITH AN AIR ENTRAINING AGENT CONFORMING TO ASTM C260. TOTAL AIR CONTENT FOR FROST-RESISTANT CONCRETE SHALL BE IN ACCORDANCE WITH ACI 318-14 TABLE 19.3.3.1. ALL CONCRETE EXPOSED TO THE WEATHER AND ALL GARAGE SLABS-ON-GRADE SHALL OBTAIN A 28-DAY STRENGTH f'c OF 3,000 PSI IN ACCORDANCE WITH ACI 318 TABLE 19.3.2.1 AND IBC SECTION 1904.1. THIS INCREASE IN REQUIRED STRENGTH IS FOR DURABILITY ONLY (SPECIAL INSPECTION IS NOT REQUIRED). ALL CONCRETE TO RECEIVE A STEEL TROWELED FINISH SHALL NOT BE AIR-ENTRAINED.

CONCRETE USED FOR ELEVATED SLABS SHALL HAVE A SHRINKAGE LIMIT OF 0.035 PERCENT AT 28 DAYS AS TESTED BY ASTM C157. IF TESTING IS NOT PERFORMED, THE WATER CONTENT OF THE MIX SHALL NOT EXCEED 235 LB./CU. YD OF CONCRETE.

CONCRETE MAY BE PLACED BY THE "SHOTCRETE" METHOD, PROVIDED THE APPROVALS, TESTS, AND INSPECTIONS REQUIRED BY THE BUILDING DEPARTMENT ARE OBTAINED. SHOTCRETE MATERIALS, EQUIPMENT, PROCEDURES, PROPORTIONS, BATCHING AND MIXING AND PLACEMENT SHALL BE IN ACCORDANCE WITH ACI 506R, ACI 506.2 AND IBC SECTION 1908. SHOTCRETE AGGREGATE SIZE SHALL NOT EXCEED 3/8".

22. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENT S1), GRADE 60, f_y = 60,000 PSI. GRADE 60 REINFORCING STEEL INDICATED ON DRAWINGS TO BE WELDED SHALL CONFORM TO ASTM A706. REINFORCING STEEL COMPLYING WITH ASTM A615 (S1) MAY BE WELDED ONLY IF MATERIAL PROPERTY REPORTS INDICATING CONFORMANCE WITH WELDING PROCEDURES SPECIFIED IN A.N.S. D1.4 ARE SUBMITTED.

    LONGITUDINAL REINFORCING STEEL IN COLUMN VERTICAL REINFORCEMENT AND IN SHEAR WALL BOUNDARY MEMBERS SHALL COMPLY WITH ASTM A706. ASTM A615 GRADE 60 REINFORCING STEEL IS ALLOWED IN THESE MEMBERS IF (A) THE ACTUAL YIELD STRENGTH BASED ON MILL TESTS DOES NOT EXCEED THE SPECIFIED YIELD STRENGTH BY MORE THAN 18,000 PSI (RETESTS SHALL NOT EXCEED THIS VALUE BY MORE THAN AN ADDITIONAL 3,000 PSI) AND (B) THE RATIO OF THE ACTUAL ULTIMATE TENSILE STRESS TO THE ACTUAL TENSILE YIELD STRENGTH IS NOT LESS THAN 1.25.

    WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064. LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.

23. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

FOOTINGS AND OTHER UNFORMED SURFACES CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
FORMED SURFACES EXPOSED TO EARTH (I.E. WALLS BELOW GROUND) OR WEATHER (#6 BARS OR LARGER)	2"
(#5 BARS OR SMALLER)	1-1/2"
COLUMN TIES OR SPIRALS AND BEAM STIRRUPS	1-1/2"
SLABS AND WALLS (INTERIOR FACE)	GREATER OF (BAR DIAMETER PLUS 1/8") OR 3/4"

24. CONCRETE WALL REINFORCING - PROVIDE THE FOLLOWING UNLESS DETAILED OTHERWISE:

WALL THICKNESS	VERTICAL BARS		HORIZONTAL BARS	
6" WALLS	#4 @ 18"	1 CURTAIN	#4 @ 12"	1 CURTAIN
8" WALLS	#4 @ 16"	1 CURTAIN	#4 @ 10"	1 CURTAIN
10" WALLS	#4 @ 18"	2 CURTAINS	#4 @ 16"	2 CURTAINS
12" WALLS	#4 @ 18"	2 CURTAINS	#4 @ 12"	2 CURTAINS

25. CAST-IN-PLACE CONCRETE: SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF DOOR AND WINDOW OPENINGS IN ALL CONCRETE WALLS. SEE MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF MISCELLANEOUS MECHANICAL OPENINGS THROUGH CONCRETE WALLS. SEE ARCHITECTURAL DRAWINGS FOR ALL GROOVES, NOTCHES, CHAMFERS, FEATURE STRIPS, COLOR, TEXTURE, AND OTHER FINISH DETAILS AT ALL EXPOSED CONCRETE SURFACES, BOTH CAST IN PLACE AND PRECAST.

26. NON-SHRINK GROUT SHALL BE NON-METALLIC CONFORMING TO ASTM C1107 AND BE FURNISHED BY AN APPROVED MANUFACTURER AND SHALL BE MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (5000 PSI MINIMUM).

27. MECHANICAL SPLICING OF REINFORCING BARS, WHERE INDICATED ON THE DRAWINGS, SHALL BE BY AN I.C.C. APPROVED SYSTEM (SUCH AS LENTON, FOX HOVLETT, ETC.) AND SHALL DEVELOP 125% OF THE SPECIFIED YIELD STRENGTH OF THE BARS. SPLICE LOCATIONS OF ALTERNATE BARS SHALL BE OFFSET BY A DISTANCE WHICH CONFORMS TO THE I.C.C. REPORT OF THE SPLICE USED AND TO ACI 318 SECTION 18.2.7.1.

28. POST-TENSIONING GENERAL NOTES:

    A. SPECIFICATIONS: ALL MATERIALS, INSTALLATION, AND WORKMANSHIP SHALL CONFORM TO THE PROJECT SPECIFICATIONS.

    B. PRE-CONSTRUCTION MEETING: SHALL BE ARRANGED BY CONTRACTOR AS REQUIRED BY THE BUILDING DEPARTMENT. THIS MEETING SHALL BE ATTENDED BY THE CONTRACTOR, STRUCTURAL ENGINEER OF RECORD, ANY SUBCONTRACTORS INVOLVED WITH POST-TENSIONING WORK, AND REPRESENTATIVES FROM THE SPECIAL INSPECTION AGENCY AND THE BUILDING DEPARTMENT.

    C. FORCE DESIGNATION: POST-TENSIONING IS DESIGNATED ON THE STRUCTURAL PLANS AS THE TOTAL FINAL EFFECTIVE FORCES REQUIRED OR AS THE NUMBER OF TENDONS WITH AN ASSUMED FINAL EFFECTIVE FORCE PER TENDON OF 26.8 KIPS.

    D. PRESTRESSING STEEL: SHALL BE 1/2" DIAMETER SEVEN WIRE LOW-RELAXATION STRAND MANUFACTURED IN ACCORDANCE WITH ASTM A416, FREE FROM CORROSION AND HAVING A GUARANTEED MINIMUM ULTIMATE TENSILE STRENGTH OF 270 KSI. STRAND SHALL BE SHOP COATED WITH COMPOUND TO PREVENT BOND, REDUCE FRICTION AND RESIST CORROSION AND BE ENCASED IN SLIPPAGE SHEATHING. TEARS IN SHEATHING GREATER THAN SIX INCHES IN LENGTH SHALL BE REPAIRED BEFORE CONCRETE POURING PER THE PTI FIELD PROCEDURES MANUAL FOR UNBONDED SINGLE STRAND TENDONS. TENDON FABRICATION PROCEDURE SHALL CONFORM TO THE POST-TENSIONING INSTITUTE "SPECIFICATION FOR UNBONDED SINGLE STRAND TENDONS". ALL TENDONS AND ANCHORAGES SHALL HAVE THE ADDITIONAL CORROSION PROTECTION OF AN ENCAPSULATED SYSTEM.

    E. ANCHORAGE: ANCHORING HARDWARE SHALL MEET THE MINIMUM REQUIREMENTS SET FORTH IN ACI 318 FOR REINFORCED CONCRETE (ACI 318 SECTIONS 25.8 AND 25.9) AND THE PRESTRESSED CONCRETE INSTITUTE "PCI STANDARD BUILDING CODE FOR PRESTRESSED CONCRETE".

    F. CONCRETE STRENGTH: SHALL BE f'c = 5,000 PSI MINIMUM AT 28 DAYS. GROUT OR CONCRETE CONTAINING CHLORIDES SHALL NOT BE USED IN THE VICINITY OF TENDONS OR ANCHORS. TENSIONING OPERATIONS SHALL NOT COMMENCE UNTIL TEST OF CYLINDERS, CURED UNDER JOBSITE CONDITIONS, INDICATES THAT CONCRETE HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI.

    G. CONCRETE DESIGN: CONCRETE SHALL BE DESIGNED TO MINIMIZE SHRINKAGE. CONCRETE SHALL HAVE A SHRINKAGE LIMIT OF 0.035 PERCENT AT 28 DAYS AS TESTED BY ASTM C157. IF TESTING IS NOT PERFORMED, THE WATER CONTENT OF THE MIX SHALL NOT EXCEED 235 LB./CU. YD OF CONCRETE. THE MAXIMUM W/C RATIO SHALL BE 0.42. THE AGGREGATE SIZE SHALL NOT EXCEED 3/4". THE TARGET SLUMP SHALL BE 5" WITH A MAXIMUM OF 6".

    H. TENDON PLACEMENT: TENDONS SHALL BE DRAPED TO A PARABOLIC PROFILE BETWEEN SUPPORTS AS INDICATED IN DETAILS AND SHALL CONFORM TO THE CONTROL POINTS SHOWN ON THE PROFILE. DIMENSIONS SHOWN ON DETAILS AND PLANS LOCATE THE CENTER OF GRAVITY OF THE TENDON OR GROUP OF TENDONS. LOW POINTS ARE AT MIDSPAN UNLESS NOTED OTHERWISE. ADEQUATE SUPPORT BARS AND CHAIRS SHALL BE FURNISHED TO HOLD TENDONS IN PLACE DURING THE CONCRETE PLACEMENT. CHAIRS ARE REQUIRED AT ALL INTERSECTIONS OF DISTRIBUTED TENDON GROUPS AND SUPPORT BARS. CHAIRS FOR SUPPORT BARS AT BANDED TENDONS SHALL BE SPACED NOT MORE THAN 2'-0" O.C. (TWO CHAIR MINIMUM). VERTICAL TENDON DIMENSIONS SHALL NOT VARY MORE THAN 1/4" (3/8" FOR CONCRETE THICKER THAN 8") FROM THE DIMENSIONS SHOWN, EXCEPT THAT 1" MINIMUM CONCRETE COVER SHALL BE MAINTAINED AT ALL TIMES. SLIGHT DEVIATIONS IN SPACING OF SLAB TENDONS WILL BE PERMITTED WHERE REQUIRED TO AVOID OPENINGS, INSERTS, AND DOWELS. WHERE TENDONS SEEM TO INTERFERE WITH EACH OTHER, ONE TENDON MAY BE MOVED HORIZONTALLY IN ORDER TO AVOID THE INTERFERENCE. WHERE MILD STEEL INTERFERES WITH TENDON LOCATIONS, PROPER TENDON LOCATION HAS PRIORITY. TWISTING OR ENTWINING OF INDIVIDUAL WIRES OR STRANDS WITHIN A BUNDLE SHALL NOT BE PERMITTED.

    I. TENDON LOCATIONS: SHALL BE MARKED ON THE UNDERSIDE OF ALL POST-TENSIONED SLABS WITH DURABLE MARKING MATERIAL. MARKING SHALL BE SUFFICIENT TO IDENTIFY ZONES WHERE TENDON LOCATIONS EXIST TO ALLOW FOR FUTURE DRILLING OF SLABS WITHOUT DAMAGING TENDONS.

    K. STRESSING OPERATIONS: JOB SITE INSTRUCTION OF CONTRACTOR'S PERSONNEL IN ALL PLACING AND STRESSING OPERATIONS SHALL BE PROVIDED BY POST-TENSIONING SUPPLIER AS REQUIRED. TENDONS SHALL NOT BE STRESSED WHEN THE TEMPERATURE IS LESS THAN 40 DEGREES F. RECORDS SHALL BE KEPT BY A QUALIFIED AGENCY OF ALL JACKING FORCES AND ELONGATIONS AND SHALL BE SUBMITTED PROMPTLY TO THE STRUCTURAL ENGINEER. MEASURED ELONGATIONS DEVIATING UP TO 7% FROM REQUIRED ELONGATIONS ARE ACCEPTABLE. IF MEASURED ELONGATIONS EXCEED TOLERANCE, CONTACT TENDON SUPPLIER AND STRUCTURAL ENGINEER. TENDON TAILS SHALL NOT BE CUT PRIOR TO REVIEW OF ELONGATION REPORTS BY STRUCTURAL ENGINEER. AFTER TENDONS ARE CUT, COAT STRESSING ANCHORAGE WITH CORROSION PREVENTATIVE MATERIAL AND FILL STRESSING RECESS WITH NON-SHRINK GROUT.

    L. SHOP DRAWINGS: SHOWING ALL DETAILS OF TENDON PLACEMENT, END ANCHORAGE, CONNECTIONS, BLOCKOUTS OF ALL HOLES, INSERTS AND OTHER POST TENSIONING DETAILS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO TENDON FABRICATION. DRAWINGS SHALL BE SIGNED AND STAMPED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF WASHINGTON.

    M. CONDUIT: CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO STRUCTURAL ENGINEER SHOWING SIZE, LOCATION AND EXTENT OF ALL CONDUIT TO BE PLACED IN POST-TENSIONED CONCRETE. ENGINEER SHALL REVIEW DRAWINGS, PRIOR TO PLACEMENT OF CONDUIT, FOR IMPACT OF CONDUIT PLACEMENT ON STRUCTURAL INTEGRITY OF CONCRETE. SEE POST-TENSIONING DETAILS FOR RESTRICTIONS ON PLACEMENT OF CONDUIT.

    N. BLOCKOUTS: CONTRACTOR SHALL SUBMIT TO STRUCTURAL ENGINEER LOCATIONS AND SIZES OF ALL BLOCKOUTS LOCATED WITHIN DROP PANELS. SUBMITTAL SHALL OCCUR PRIOR TO PLACEMENT OF BLOCKOUTS.

    O. INSERTS: FOR SUSPENDED MECHANICAL, ELECTRICAL, AND ARCHITECTURAL WORK SHALL BE CAST-IN-PLACE. IF ADDITIONAL FASTENERS ARE REQUIRED, POWER DRIVEN FASTENERS WILL BE PERMITTED ONLY WHERE IT CAN BE SHOWN THAT THE INSERTS WILL NOT SPALL THE CONCRETE AND ARE LOCATED SO AS TO AVOID DAMAGING THE TENDONS.

    P. STUD RAILS AS MANUFACTURED BY "DECON" OR OWNER APPROVED EQUAL. THE COMPLETE AND FINISHED STUD RAIL SHALL BE I.C.C. ES EVALUATED AND WELDING SHALL TAKE PLACE IN AN I.C.C. ES APPROVED AND AUDITED FACILITY. STUD

GENERAL STRUCTURAL NOTES

(The following apply unless shown otherwise on the plans)

34. DRIVE PINS, SHOT PINS AND OTHER POWDER-ACTUATED FASTENERS SHALL BE LOW VELOCITY TYPE FASTENERS AS MANUFACTURED BY HILTI CORPORATION. WHEN CALLED FOR IN THE DRAWINGS, PROVIDE THE APPROPRIATE FASTENER AS NOTED IN THE TABLE BELOW FOR EACH GIVEN APPLICATION. INSTALL IN STRICT ACCORDANCE WITH I.C.C. REPORTS NO. ESR-2269 FOR THE X-U FASTENERS AND ESR-2379 FOR THE X-CP FASTENERS. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1" UNLESS OTHERWISE NOTED. MAINTAIN AT LEAST 3" TO NEAREST CONCRETE EDGE AND 4" CENTER TO CENTER SPACING. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES.

APPLICATION	FASTENER TYPE	ALLOWABLE SHEAR CAPACITY (LBS)	ALLOWABLE TENSION CAPACITY (LBS)
2x TREATED LUMBER TO CONCRETE (2000 PSI MIN.)	X-CP 72 PB S23 w/ 1.33" EMBED	250	175
2x LUMBER TO STRUCTURAL STEEL (3/16" MIN., A36 OR GR. 50)	X-U 52 MX PLUS R-23 WASHERS	250	175
2x TREATED LUMBER TO GROUTED CMU	X-CP 72 PB S23	105	100

35. EPOXY-GROUTED (THREADED RODS OR REINFORCING BAR) INTO CONCRETE SHALL BE INSTALLED USING "SET-XP" ADHESIVE ANCHOR AS MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS. INSTALL IN STRICT ACCORDANCE WITH I.C.C. REPORT NO. ESR-2508, INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION OF INSTALLATION IS REQUIRED.

36. EPOXY-GROUTED (THREADED RODS OR REINFORCING BAR) INTO GROUT FILLED CMU SHALL BE INSTALLED USING "SET-XP" ADHESIVE ANCHOR AS MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS. INSTALL IN STRICT ACCORDANCE WITH IAPMO UES REPORT NO. ER-265, INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION OF INSTALLATION IS REQUIRED.

MASONRY

37. CONCRETE MASONRY UNIT WALLS SHALL BE CONSTRUCTED OF MEDIUM WEIGHT UNITS CONFORMING TO ASTM C90, LAID IN A RUNNING BOND, LINEAR SHRINKAGE SHALL NOT EXCEED 0.065%. MORTAR SHALL BE TYPE "S" IN ACCORDANCE WITH ASTM C270. GROUT SHALL CONFORM TO IBC REQUIREMENTS AND ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI AT 28 DAYS, DESIGN F'm = 2,000 PSI. FULL STRESSES ARE REQUIRED. STRENGTH SHALL BE VERIFIED BY THE UNIT STRENGTH METHOD IN ACCORDANCE WITH TMS 602-13.

UNLESS OTHERWISE NOTED, PROVIDE THE FOLLOWING REINFORCEMENT:

6" WALLS	#4 @ 48" O.C. VERT.	(2) #4 @ 48" O.C. HORIZ.
8" WALLS	#5 @ 48" O.C. VERT.	(2) #5 @ 48" O.C. HORIZ.
12" WALLS	#5 @ 32" O.C. VERT.	(2) #5 @ 40" O.C. HORIZ.

IN ADDITION, PROVIDE (1) #5 (#4 @ 6" WALLS) VERT. AT FREE ENDS OF WALLS, AND (2) #5 ((2) #4 @ 6" WALLS) HORIZONTAL AT ELEVATED FLOOR AND ROOF LEVELS AND AT TOPS OF WALLS. REINFORCE WALL CORNERS AND INTERSECTIONS PER 2/S6.0. REINFORCE JAMBS AND FREE ENDS OF WALLS PER 2/S6.0, U.O.N. REINFORCE WALL OPENINGS PER 8/S6.0, U.O.N. ALL HORIZONTAL REINFORCEMENT SHALL BE PLACED IN BOND BEAMS. SEE 1/S6.0 FOR REINFORCING DEVELOPMENT AND LAP SPLICE SCHEDULE.

38. MASONRY VENEER SHALL HAVE W1.7 (9 GAUGE) WIRE JOINT REINFORCEMENT SPACED AT 16" O.C. VERTICALLY AND SHALL BE ANCHORED TO BACKING WALLS PER IBC SECTION 1405.6 WITH SHEET METAL ANCHORS, WIRE ANCHORS OR ADJUSTABLE ANCHORS. MECHANICALLY CONNECT THE ANCHORS TO THE JOINT REINFORCEMENT WITH CLIPS OR HOOKS THAT WILL ENGAGE OR ENCLOSE THE WIRE. THE WIRE SHALL BE CONTINUOUS WITH BUTT SPLICES BETWEEN ANCHORS PERMITTED.

SHEET METAL ANCHORS (NON-CORRUGATED) SHALL BE AT LEAST 7/8" WIDE, 0.03" THICK, COMPLY WITH ACI 530 REQUIREMENTS AND BE SPACED AT 16" O.C. VERTICALLY AND A MAX. OF 24" O.C. HORIZONTALLY. WIRE ANCHORS SHALL BE AT LEAST W1.7 WIRE (9 GAUGE), COMPLY WITH ACI 530 REQUIREMENTS AND BE SPACED AT 16" O.C. VERTICALLY AND A MAX. OF 24" O.C. HORIZONTALLY.

ADJUSTABLE ANCHORS SHALL COMPLY WITH ACI 530 REQUIREMENTS AND BE SPACED AT 16" O.C. VERTICALLY AND AT 18" O.C. HORIZONTALLY. PINTLE ANCHORS SHALL HAVE AT LEAST TWO PINTLE LEGS OF W2.8 (6 GAUGE) WIRE. THE MAXIMUM HEIGHT OF CONTINUOUS BRICK VENEER FROM A CONCRETE FOUNDATION SHALL BE 30 FEET. PROVIDE VERTICAL EXPANSION JOINTS IN CONTINUOUS VENEER @ 25' O.C. MAX. TYPICAL U.O.N. LINTEL ANGLES OVER OPENINGS 6'-0" WIDE OR LESS SHALL BE L3 1/2" X 3 1/2" X 1/4" HOT DIP GALVANIZED, U.N.O. AND SHALL BEAR ON A MINIMUM OF 4" OF MASONRY EACH END.

STEEL

39. STRUCTURAL STEEL DESIGN, FABRICATION, AND ERECTION SHALL BE BASED ON THE LATEST EDITIONS OF THE A.I.S.C. SPECIFICATIONS AND CODES:

A. AISC - STEEL CONSTRUCTION MANUAL, 14TH EDITION
B. CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
C. SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.

40. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

TYPE OF MEMBER	ASTM SPECIFICATION	Fy
A. WIDE FLANGE (W AND WT) SHAPES	A992	50 KSI
B. ALL OTHER SHAPES	A36	36 KSI
C. PLATE	A36 OR A572	36 KSI (MIN.)
D. STRUCTURAL TUBING (SQUARE OR RECTANGULAR)	A500 (GRADE B)	46 KSI
E. ANCHOR BOLTS (EMBEDDED IN MASONRY OR CONCRETE)	F1554 (GRADE 36) OR F1554 (GRADE 55, SUPP. S1)	36 KSI 55 KSI
F. CONNECTION BOLTS (7/8" ROUND, UNLESS SHOWN OTHERWISE)	A325-N	92 KSI
G. CONNECTION BOLTS (3/4" ROUND, UNLESS SHOWN OTHERWISE)	A307	36 KSI
H. HEADED SHEAR STUDS	A108	49 KSI
I. THREADED RODS	A36	36 KSI

SUBSTITUTION OF MEMBER SIZES OR STEEL GRADE SHALL NOT BE ALLOWED WITHOUT PRIOR APPROVAL OF THE ENGINEER. STEEL BEAMS ARE EQUALLY SPACED BETWEEN DIMENSIONED POINTS. ALL STEEL ANCHORS AND TIES AND OTHER MEMBERS EMBEDDED IN CONCRETE OR MASONRY SHALL BE LEFT UNPAINTED. ALL STEEL TO BE FIREPROOFED SHALL BE LEFT UNPAINTED. ALL OTHER STEEL SHALL HAVE ONE COAT OF APPROVED SHOP PAINT.

STRUCTURAL STEEL AND CONNECTIONS EXPOSED TO WEATHER OR EARTH SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION IN COMPLIANCE WITH ASTM A123. GALVANIZE BOLTS AND SIMILAR THREADED FASTENERS EXPOSED TO WEATHER OR EARTH IN ACCORDANCE WITH ASTM A153. ALL FIELD WELDS EXPOSED TO WEATHER OR EARTH SHALL BE COATED WITH BRUSH APPLIED ZINC RICH PAINT COMPLYING WITH ASTM A780 (Z.R.C. OR EQUIVALENT).

A MINIMUM OF TWO BOLTS ARE REQUIRED FOR ALL CONNECTIONS. ALTERNATE CONNECTIONS TO THOSE SHOWN ON THESE DRAWINGS WILL REQUIRE PRIOR APPROVAL OF THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ERECTION AIDS AND JOINT PREPARATIONS THAT INCLUDE, BUT ARE NOT LIMITED TO, ERECTION ANGLES, LIFT HOLES, AND OTHER AIDS. WELDING PROCEDURES, REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES AND UNEQUAL PARTS.

41. ALL A-325 CONNECTION BOLTS SHALL BE INSTALLED TO THE SNUG-TIGHT CONDITION PER AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. ALL NUTS SHALL CONFORM TO ASTM A563. ALL WASHERS SHALL CONFORM TO ASTM F436 OR ASTM F844 TYPE 325. ALL BOLT HOLES SHALL BE STANDARD SIZE UNLESS OTHERWISE NOTED.

42. ALL A-307 CONNECTION BOLTS SHALL BE PROVIDED WITH LOCK WASHERS UNDER NUTS OR SELF-LOCKING NUTS. ALL BOLT HOLES SHALL BE STANDARD SIZE UNLESS OTHERWISE NOTED.

43. ALL WELDING SHALL BE IN CONFORMANCE WITH A.I.S.C. AND A.W.S. STANDARDS AND SHALL BE PERFORMED BY W.A.B.O. CERTIFIED WELDERS USING E70 XX ELECTRODES. ONLY PREQUALIFIED WELDS (AS DEFINED BY A.W.S.) SHALL BE USED. WELDING OF GRADE 60 REINFORCING BARS (IF REQUIRED) SHALL BE PERFORMED USING LOW HYDROGEN ELECTRODES. WELDING OF GRADE 40 REINFORCING BARS (IF REQUIRED) SHALL BE PERFORMED USING E70XX ELECTRODES. WELDING WITHIN 4" OF COLD BENDS IN REINFORCING STEEL IS NOT PERMITTED. SEE REINFORCING NOTE FOR MATERIAL REQUIREMENTS OF WELDED BARS. ALL WELDING OF STAINLESS STEEL SHALL USE E308 ELECTRODES WITH A GMAW PROCESS. ALL WELDING SHALL BE PERFORMED BY WELDERS WITH AWS / W.A.B.O. CERTIFICATION WITH THE MATERIAL AND METHOD REQUIRED.

SHOP DRAWINGS SHALL SHOW ALL WELDING WITH AWS A2.4 SYMBOLS. WELDS SHOWN ON DRAWINGS ARE MINIMUM SIZES. INCREASE WELDS SIZE TO AWS MINIMUM SIZES BASED ON PLATE THICKNESS. MINIMUM WELDING SHALL BE 3/16-INCH. THE WELDS SHOWN ARE FOR THE FINAL CONNECTIONS. FIELD WELD ARROWS ARE SHOWN WHERE A FIELD WELD IS REQUIRED BY THE STRUCTURAL DESIGN; THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING IF A WELD SHOULD BE SHOP OR FIELD WELDED IN ORDER TO FACILITATE THE STRUCTURAL STEEL DELIVERY AND ERECTION. SEE THE SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL WELDING REQUIREMENTS, ESPECIALLY AT SPECIAL MOMENT RESISTING FRAMES AND OTHER SEISMIC CRITICAL WELDS.

44. DEFORMED BAR ANCHORS (DBA) SHALL BE TYPE D2L ANCHORS BY NELSON STUD WELDING DIVISION, TRW ASSEMBLIES AND FASTENERS GROUP (OR EQUIVALENT). ANCHORS SHALL BE MADE FROM COLD ROLLED, DEFORMED STEEL CONFORMING TO ASTM A1064.

WOOD

45. FRAMING LUMBER: SHALL BE KILN DRIED OR MC-19 (MOISTURE CONTENT LESS THAN 19%), AND GRADED AND MARKED IN CONFORMANCE WITH W.C.L.I.B. STANDARD NO. 17 GRADING RULES FOR WEST COAST LUMBER. FURNISH TO THE FOLLOWING MINIMUM STANDARDS:

JOISTS: (2X, 3X, AND 4X MEMBERS) . . . . . DOUGLAS FIR OR HEM-FIR NO. 2

BEAMS AND STRINGERS: (INCLUDING 6 X AND LARGER MEMBERS) . . . . . DOUGLAS FIR NO. 1

POSTS AND TIMBERS: . . . . . DOUGLAS FIR NO. 1

STUDS, PLATES & MISCELLANEOUS LIGHT FRAMING: . . . . . DOUGLAS FIR OR HEM-FIR NO. 2 (AS NOTED ON PLANS / DETAILS)

2X 3X AND 4X TONGUE AND GROOVE DECKING: . . . . . HEM-FIR COMMERICAL DEX

46. WOOD SHRINKAGE: DUE TO CROSS GRAIN WOOD SHRINKAGE, THIS BUILDING IS EXPECTED TO SETTLE APPROXIMATELY 1/8 TO 1/4 INCH PER STORY. ALL UTILITIES SHALL BE DESIGNED WITH FLEXIBLE JOINTS OR OTHER MEANS TO APPROPRIATELY ACCOMMODATE THIS NORMAL SETTLEMENT. ALL INTERIOR AND EXTERIOR SHEATHING AND FINISHES SHALL BE INSTALLED SUCH THAT NO DAMAGE WILL OCCUR. SHRINKAGE IS EXPECTED IN THE THICKNESS OF THE WALL PLATES AND NOT IN THE LENGTH OF THE WALL STUDS.

47. GLUED LAMINATED MEMBERS SHALL BE FABRICATED IN CONFORMANCE WITH ASTM D3737 AND ANSI A190.1 STANDARDS. EACH MEMBER SHALL BEAR AN A.I.T.C. IDENTIFICATION MARK AND SHALL BE ACCOMPANIED BY AN A.I.T.C. CERTIFICATE OF CONFORMANCE. CERTIFICATES OF CONFORMANCE MUST BE MADE AVAILABLE TO BUILDING INSPECTORS. ALL SIMPLE SPAN BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V4, Fb = 2,400 PSI, Fv = 240 PSI, E = 1,800 KSI. ALL CANTILEVERED OR CONTINUOUS BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V8, Fb = 2,400 PSI, Fv = 240 PSI, E = 1,800 KSI. CAMBER ALL SIMPLE SPAN GLULAM BEAMS TO 3,000' RADIUS UNLESS SHOWN OTHERWISE ON THE PLANS. ALL GLUE LAMINATED COLUMNS SHALL BE DOUGLAS FIR COMBINATION 2, Fc = 1,900 PSI, Fby = 1,800 PSI, Fbx = 1,700 PSI, E = 1,700 KSI (4 LAMS MINIMUM DEPTH).

48. LAMINATED STRAND LUMBER (LSL) SHALL BE DESIGNED AND MANUFACTURED PER ASTM D5456. EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, AND THE INDEPENDENT INSPECTION AGENCY'S LOGO. ALL LAMINATED STRAND LUMBER SHALL BE MANUFACTURED USING A WATERPROOF ADHESIVE MEETING THE REQUIREMENTS OF ASTM D2559. MINIMUM STRUCTURAL PROPERTIES ARE AS FOLLOWS:

RIM JOISTS AND BLOCKING (1-1/4" MINIMUM THICKNESS AT NON-SHEAR WALLS; SEE SCHEDULE 10/S5.0 FOR MINIMUM THICKNESS AT SHEAR WALLS):

$Fb = 1700$ PSI, $E = 1.3 \times 10^6$ PSI, $Fv = 400$ PSI

49. WOOD I-JOISTS DESIGN SHOWN ON PLANS IS BASED ON JOISTS MANUFACTURED BY THE ROSEBURG CORPORATION. ALTERNATE I-JOIST MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE I.C.C. OR IAPMO UES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH WOOD JOIST PROVIDED. GLUE FLOOR JOISTS TO SHEATHING AS REQUIRED BY THE JOIST MANUFACTURER.

50. WOOD SHEATHING SHALL BE APA RATED PLYWOOD SHEATHING, EXTERIOR GLUE; EXPOSURE 1, IN CONFORMANCE WITH THE REQUIREMENTS FOR THEIR TYPE IN DOC PS-1 OR PS-2. SEE PLANS FOR THICKNESS, PANEL IDENTIFICATION INDEX AND NAILING REQUIREMENTS.

UNLESS OTHERWISE NOTED ON THE PLANS, ROOF AND FLOOR SHEATHING SHALL BE LAID UP WITH FACE GRAIN PERPENDICULAR TO SUPPORTS. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED TONGUE AND GROOVE JOINTS OR SHALL BE SUPPORTED WITH SOLID BLOCKING. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS OF FLOOR AND ROOF SHEATHING. TOENAIL BLOCKING TO SUPPORTS WITH (2) 10d-F NAILS AT EACH END, UNLESS OTHERWISE NOTED. AT BLOCKED FLOOR AND ROOF DIAPHRAGMS PROVIDE FLAT 2X BLOCKING AT ALL UNFRAMED PANEL EDGES AND NAIL WITH EDGE NAILING SPACED PER PLANS. WHERE NOT NOTED OTHERWISE, NAIL PANEL EDGES WITH 8d NAILS @ 6" O.C. EDGES, 12" O.C. IN THE FIELD.

51. ALL WOOD EXPOSED TO WEATHER, OR BEARING ON UNPROTECTED CONCRETE OR MASONRY BELOW GRADE, OR BEARING ON UNPROTECTED CONCRETE OR MASONRY LESS THAN 8" FROM EXPOSED EARTH SHALL BE PRESSURE TREATED, U.O.N. PRESSURE TREATMENT SHALL BE WITH AN APPROVED PRESERVATIVE AND BRANDED WITH A QUALITY CONTROL AGENCY MARK BY THE AMERICAN WOOD PRESERVERS BUREAU OR EQUAL. ALL METAL HARDWARE IN CONTACT WITH TREATED WOOD SHALL BE PROTECTED WITH A G185 GALVANIZED COATING (ZMAX) OR BETTER. ALL NAILS IN TREATED WOOD SHALL BE HOT-DIP GALVANIZED OR BETTER. PROVIDE 2 LAYERS OF 30# ASPHALT IMPREGNATED BUILDING PAPER BETWEEN NON-PRESSURE-TREATED LEDGERS, BLOCKING, ETC., AND CONCRETE OR MASONRY.

52. TIMBER CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY, AS SPECIFIED IN THEIR CATALOG NO. C-C-2019. EQUIVALENT DEVICES BY OTHER MANUFACTURERS MAY BE SUBSTITUTED, PROVIDED THEY HAVE I.C.C. OR IAPMO UES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. CONNECTORS SHALL BE SIZED TO MATCH THE SIZE OF THE FRAMING MEMBERS BEING CONNECTED. PROVIDE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE ONE-HALF OF THE NAILS OR BOLTS IN EACH MEMBER. ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. UNLESS NOTED OTHERWISE, ALL NAILS SHALL BE COMMON. ALL SHIMS SHALL BE SEASONED AND DRIED AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED. ALL BOLTS TIGHTENED TO SNUG TIGHT.

CONTINUOUS ROD HOLDOWN SYSTEM SHALL BE DESIGNED FOR THE LOADS AND CONDITIONS SHOWN ON THE STRUCTURAL PLANS AND SHALL BE FURNISHED AND INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S INSTRUCTIONS. THE SYSTEM SHALL BE FULLY SELF-TIGHTENING AND BE DESIGNED TO ACCOMMODATE 3/8" OF SHRINKAGE PER FLOOR, ACCOMMODATING A MINIMUM OF 1" OF TRAVEL FOR WOOD LEVELS ONE THROUGH THREE AND A MINIMUM OF 2" OF TRAVEL FOR LEVELS FOUR AND ABOVE. SYSTEM ELONGATION SHALL BE LESS THAN 0.20" PER STORY UNDER DESIGN LOAD. RODS SHALL BE ASTM A36 (58 KSI ULTIMATE) AND SHALL ELONGATE NO MORE THAN 0.125" PER STORY UNDER DESIGN LOAD. THE SYSTEM SHALL ACCOMMODATE A MINIMUM OUT-OF-PLUMB ROD OF 3" IN 10'-0". DESIGN SUBMITTALS SHALL BEAR THE STAMP AND SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER, STATE OF WASHINGTON, AND SHALL INDICATE THE LOAD CAPACITIES AND SELF-TIGHTENING DEVICES OF EACH HOLDOWN RUN.

DESIGN SHOWN ON PLANS IS BASED ON A SYSTEM MANUFACTURED BY THE EARTHBOUND CORPORATION USING THE "SLACKJACK" SHRINKAGE COMPENSATING DEVICE (IAPMO UES REPORT NO. ER-240). ALTERNATE HOLDOWN MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER PROVIDED THEY HAVE I.C.C. OR IAPMO UES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES.

53. WOOD FASTENERS:

A. NAIL SIZES SPECIFIED ON DRAWINGS ARE BASED ON THE FOLLOWING SPECIFICATIONS:

DRAWING ID	NAIL NAME	NAIL DIAMETER	NAIL LENGTH
"6d"	6d Common	0.113"	2"
"8d Box"	8d Box	0.113"	2-1/2"
"8d"	8d Common	0.131"	2-1/2"
"10d-F"	10d Framer	0.131"	3"
"10d"	10d Shear	0.148"	2-1/4"
"16d"	16d Sinker	0.148"	3-1/4"

IF CONTRACTOR PROPOSES THE USE OF ALTERNATE NAILS, THEY SHALL SUBMIT NAIL SPECIFICATIONS TO THE STRUCTURAL ENGINEER (PRIOR TO CONSTRUCTION) FOR REVIEW AND APPROVAL.

B. NAILS - SHEATHING FASTENERS TO FRAMING SHALL BE DRIVEN FLUSH TO FACE OF SHEATHING WITH NO COUNTERSINKING PERMITTED.

C. HOT DIPPED GALVANIZED NAILS, BOLTS AND METAL PLATES - ALL NAILS, BOLTS AND METAL PLATES IN CONTACT WITH PRESSURE TREATED (INCLUDING FIRE-RETARDANT TREATED) LUMBER SHALL BE HOT DIPPED GALVANIZED.

54. WOOD FRAMING NOTES: THE FOLLOWING APPLY UNLESS OTHERWISE SHOWN ON THE PLANS:

A. ALL WOOD FRAMING DETAILS NOT SHOWN OTHERWISE SHALL BE CONSTRUCTED TO THE MINIMUM STANDARDS OF THE IBC. MINIMUM NAILING, UNLESS OTHERWISE NOTED, SHALL CONFORM TO IBC TABLE 2304.10.1. COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. TIGHTEN BOLTS AND LAG SCREWS SNUGLY AGAINST WOOD FRAMING AFTER WOOD HAS REACHED SPECIFIED MOISTURE CONTENT.

B. WALL FRAMING: AT EXTERIOR WALLS TWO STUDS MINIMUM SHALL BE PROVIDED AT THE END OF ALL BEARING AND SHEAR WALLS AND AT EACH SIDE OF ALL OPENINGS. SOLID BLOCKING FOR WOOD COLUMNS SHALL BE PROVIDED THROUGH FLOORS TO SUPPORTS BELOW.

ALL BEARING STUD WALLS SHALL HAVE THEIR LOWER WOOD PLATES ATTACHED TO WOOD FRAMING BELOW WITH 16d NAILS AT 8" O.C. STAGGERED OR BOLTED TO CONCRETE WITH 5/8" DIAMETER ANCHOR BOLTS WITH 3"X3"X1/4" PLATE WASHERS @ 4'-0" O.C., UNLESS INDICATED OTHERWISE. INDIVIDUAL MEMBERS OF BUILT UP POSTS SHALL BE NAILED TO EACH OTHER WITH 10d-F NAILS @ 8" O.C. STAGGERED. REFER TO THE PLANS AND SHEAR WALL SCHEDULE FOR REQUIRED SHEATHING AND NAILING. WHEN NOT OTHERWISE NOTED, PROVIDE GYPSUM WALLBOARD ON INTERIOR SURFACES AND GYPSUM SHEATHING ON EXTERIOR SURFACES ATTACHED TO ALL STUDS, TOP AND BOTTOM PLATES AND BLOCKING WITH SCREWS AT 8" O.C. USE 1-1/4 " W #6 SCREWS FOR 1/2" GWB AND 5/8" GWB WHERE OCCURS. USE 1-1/4" W #6 GALVANIZED SCREWS FOR 1/2" GWB AND 5/8" EXTERIOR GYPSUM SHEATHING, WHERE OCCURS. VERIFY THE FIRE ASSEMBLY REQUIREMENTS WHERE APPLICABLE WITH THE ARCHITECT.

C. FLOOR AND ROOF FRAMING: PROVIDE DOUBLE JOISTS UNDER ALL PARALLEL PARTITIONS THAT EXTEND OVER MORE THAN HALF THE JOIST LENGTH AND AROUND ALL OPENINGS IN FLOORS OR ROOFS UNLESS OTHERWISE NOTED. PROVIDE SOLID BLOCKING AT ALL BEARING POINTS. NAIL ALL MULTI JOIST BEAMS TOGETHER WITH 10d-F NAILS @ 8" O.C. STAGGERED UNLESS OTHERWISE NOTED.

D. POSITIVE CONNECTIONS: PROVIDE THE FOLLOWING SIMPSON CONNECTORS AT TYPICAL FRAMING UNLESS OTHERWISE NOTED ON PLAN OR DETAIL. PROVIDE CCQ/ECCQ CAPS AND PBS BASES AT POSTS. PROVIDE BC BASE WHERE POST BEARS ON WOOD FRAMING BELOW. PROVIDE LUS SERIES HANGERS FOR 2X FLOOR AND ROOF JOISTS. CONNECTORS SHALL BE SIZED TO MATCH THE SIZE OF THE FRAMING MEMBERS BEING CONNECTED.

STRUCTURAL OBSERVATION

55. AS NOTED IN IBC SECTION 1704.6, STRUCTURAL OBSERVATION IS REQUIRED FOR THIS PROJECT. STRUCTURAL OBSERVATION MEANS THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM, INCLUDING BUT NOT LIMITED TO, THE ELEMENTS AND CONNECTIONS AT SIGNIFICANT CONSTRUCTION STAGES AND THE COMPLETED STRUCTURE FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY OF THE INSPECTIONS REQUIRED BY IBC SECTIONS 110 AND 1704.

DURING STRUCTURAL OBSERVATION, THE REVIEWING ENGINEER WILL SELECT PORTIONS OF WORK TO REVIEW CLOSELY AS WELL AS OBSERVE THE STRUCTURAL SYSTEM FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. SUCH REVIEW PROCEDURES WILL BE CONDUCTED IN ACCORDANCE WITH COMMONLY ACCEPTED STANDARDS OF PRACTICE. THE BUILDING OFFICIAL UNDERSTANDS THAT SUCH PROCEDURES INDICATE ACTUAL CONDITIONS ONLY WHERE THE REVIEW IS PERFORMED AND THAT THE RESULTS WILL BE INFERRED TO EXIST IN OTHER AREAS NOT REVIEWED.

THE BUILDING OFFICIAL ALSO RECOGNIZES THAT STRUCTURAL REVIEW IS A TECHNIQUE EMPLOYED TO MINIMIZE THE RISK OF PROBLEMS ARISING DURING CONSTRUCTION. STRUCTURAL OBSERVATION BY THE DESIGN PROFESSIONAL DOES NOT CONSTITUTE WARRANTY OR GUARANTEE OF ANY TYPE. IN ALL CASES, THE CONTRACTOR SHALL RETAIN RESPONSIBILITY FOR THE QUALITY OF WORK AND FOR ADHERENCE TO THE APPROVED PLANS AND SPECIFICATIONS.

ENGINEER'S SEAL

6/10/20

ISSUE	DATE	No.	REVISION	DATE

HARBORSIDE APARTMENTS

1310 "G" STREET
Bellingham, WA
For:
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Drawing Title:
GENERAL STRUCTURAL NOTES
PROJECT NO. : ____
DRAWN BY: TA
DATE: ____

Drawing No.
S1.1

PHOTO REDUCTION SCALE — 0 — 1 INCH — 2 INCHES — 3 INCHES — 4 INCHES

GENERAL STRUCTURAL NOTES

(The following apply unless shown otherwise on the plans)

SPECIAL INSPECTION SCHEDULE

SEE NOTES 1 & 2

			CONTINUOUS	PERIODIC	REMARKS
FOUNDATION	1	EXCAVATION, GRADING AND FILL	X		BY GEOTECHNICAL ENGINEER
	2	FINAL FOUNDATION PREPARATION	X		BY GEOTECHNICAL ENGINEER
	3	PLACEMENT OF FOUNDATION AND RETAINING WALL BACKFILL	X		BY GEOTECHNICAL ENGINEER
	4	PILE DRIVING AND/OR DRILLING OF CAISSONS	X		BY GEOTECHNICAL ENGINEER
	5	INSTALLATION OF AGGREGATE FOUNDATION SYSTEM	X		BY GEOTECHNICAL ENGINEER
CONCRETE	1	INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, STUDRAILS, MECHANICAL SPLICES, AND PLACEMENT		X	
	2	INSPECT BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED	X		
	3	VERIFYING USE OF REQUIRED DESIGN MIX		X	
	4	AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X		
	5	INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X		
	6	INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X	
	7	INSPECTION OF PRESTRESSED CONCRETE:			
		a. APPLICATION OF PRESTRESSING FORCES.	X		
		b. GROUTING OF BONDED PRESTRESSING TENDONS IN THE SEISMIC-FORCE-RESISTING SYSTEM.	X		
		c. INSPECTION OF GREASE CAP AND GROUT INSTALLATION AT TENDON END	X		
	8	VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POSTTENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS		X	
	9	INSPECTION OF EMBED PLATES, BOLTS, AND OTHER EMBEDDED ITEMS PRIOR TO AND DURING PLACEMENT OF CONCRETE		X	
STRUCTURAL STEEL	1	MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS:			
		a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS		X	
		b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED		X	
	2	INSPECTION OF WELDING:			
		a. STRUCTURAL STEEL:			
		1) COMPLETE AND PARTIAL PENETRATION GROOVE WELDS	X		SEE NOTE 4
		2) MULTIPASS FILLET WELDS	X		
		3) SINGLE-PASS FILLET WELDS > 5/16"	X		
		4) SINGLE-PASS FILLET WELDS ≤ 5/16"		X	SEE NOTE 5
		b. OTHER WELDING:			
		1) STAIR/RAILING SYSTEMS		X	
WOOD	1	FIELD GLUING OPERATIONS OF ELEMENTS OF THE SEISMIC-FORCE-RESISTING SYSTEM	X		
	2	NAILING, BOLTING, ANCHORING, AND OTHER FASTENING COMPONENTS WITHIN THE SEISMIC-FORCE-RESISTING SYSTEM INCLUDING DRAG STRUTS, BRACES AND HOLDOWNS		X	SEE NOTE 7
ARCHITECTURAL COMPONENTS	1	DURING ERECTION AND FASTENING OF EXTERIOR CLADDING, INTERIOR NON-BEARING WALLS, AND INTERIOR AND EXTERIOR VENEER		X	SEE NOTE 8
MECHANICAL AND ELECTRICAL COMPONENTS	1	DURING ANCHORAGE OF ELECTRICAL EQUIPMENT FOR EMERGENCY OR STANDBY POWER SYSTEMS		X	
APPROVED FABRICATORS	1	APPROVED FABRICATORS MUST SUBMIT CERTIFICATE OF COMPLIANCE FOR ALL OFFSITE FABRICATORS SUCH AS STRUCTURAL STEEL, GLULAMS, PREGAST CONCRETE, ETC.			
PREFABRICATED CONSTRUCTION	1				SEE NOTE 6

NOTES:

1. THE ITEMS CHECKED WITH AN "X" SHALL BE INSPECTED IN ACCORDANCE WITH IBC CHAPTER 17 BY A CERTIFIED SPECIAL INSPECTOR FROM AN ESTABLISHED TESTING AGENCY. FOR MATERIAL SAMPLING AND TESTING REQUIREMENTS REFER TO THE PROJECT SPECIFICATIONS, THE STRUCTURAL NOTES, AND THE NOTES BELOW. SPECIAL INSPECTION TESTING REQUIREMENTS APPLY EQUALLY TO ALL BIDDER DESIGNED COMPONENTS.
2. CONTINUOUS INSPECTION MEANS THAT THE SPECIAL INSPECTOR IS ON THE SITE AT ALL TIMES OBSERVING THE WORK REQUIRING SPECIAL INSPECTION (IBC 1702). PERIODIC SPECIAL INSPECTION MEANS THAT THE SPECIAL INSPECTOR IS ON SITE AT TIME INTERVALS NECESSARY TO CONFIRM THAT ALL WORK REQUIRING SPECIAL INSPECTION IS IN COMPLIANCE.
3. INSPECTION OF DRILLED ANCHORS, INCLUDING EXPANSION AND ADHESIVE GROUTED ANCHORS, WHERE SPECIFIED, SHALL INCLUDE VISUAL VERIFICATION OF DRILLED HOLE DEPTH, SPACING, EDGE DISTANCES AND HOLE CLEANING. FOR GROUTED ANCHORS, GROUT INSTALLATION SHALL BE OBSERVED AND GROUT PRODUCT SPECIFICATION AND PREPARATION SHALL BE VERIFIED.
4. ALL COMPLETE PENETRATION WELDS SHALL BE TESTED ULTRASONICALLY OR AS OTHERWISE SPECIFIED OR BY USING ANOTHER APPROVED METHOD.
5. ALL WELDS SHALL BE VISUALLY INSPECTED.
6. INSPECTION OF PREFABRICATED CONSTRUCTION SHALL BE THE SAME AS IF THE MATERIAL USED IN THE CONSTRUCTION TOOK PLACE ON SITE. CONTINUOUS INSPECTION WILL NOT BE REQUIRED DURING PREFABRICATION IF THE APPROVED AGENCY CERTIFIES THE CONSTRUCTION AND FURNISHES EVIDENCE OF COMPLIANCE.
7. EXCEPTIONS: FASTENING OF WOOD SHEATHING USED FOR WOOD SHEAR WALLS, SHEAR PANELS, AND DIAPHRAGMS WHERE FASTENER SPACING IS MORE THAN 4" ON CENTER.
8. EXCEPTIONS:
   a) SPECIAL INSPECTION IS NOT REQUIRED FOR ARCHITECTURAL COMPONENTS IN STRUCTURES 30 FEET OR LESS IN HEIGHT.
   b) CLADDING AND VENEER WEIGHING 5 PSF OR LESS.
   c) INTERIOR NON-BEARING WALLS WEIGHING 15 PSF OR LESS.

ABBREVIATIONS

@	At	L	Angle
d	Penny (Nails)	LL	Live Load
ø	Diameter	LLH	Long Leg Horizontal
		LLV	Long Leg Vertical
A.B.	Anchor Bolt	LONGIT.	Longitudinal
ADD'L	Additional	LT. WT.	Lightweight
ALT.	Alternate		
APPROX.	Approximate	MATL.	Material
ARCH.	Architect	MAX.	Maximum
		MECH.	Mechanical
B.U.	Built-up	MEZZ	Mezzanine
B/	Bottom of	MF	Moment Frame
BF	Braced Frame	MFR.	Manufacturer
BLKG.	Blocking	MIN.	Minimum
BLDG.	Building	MISC.	Miscellaneous
BM.	Beam	MK.	Mark
BRG.	Bearing		
BTWN.	Between	N.	North
		N.S.	Near Side
℄	Centerline	NIC	Not in Contract
C	Camber	NO.	Number
C TO C	Center to Center	NOM.	Nominal
CIP	Cast In Place	NTS	Not to Scale
C.J.	Construction Joint or Control Joint		
CLG.	Ceiling	O.C.	On Center
CLR.	Clear	O.D.	Outside Diameter
CMU	Concrete Masonry Unit	O.F.	Outside Face
CNTR.	Center	O.H.	Opposite Hand
COL.	Column	OPNG.	Opening
CONC.	Concrete	OPP.	Opposite
CONN.	Connections		
CONST.	Construction	PAF	Powder Actuated Fastener
CONT.	Continuous	PC	Precast
C.J.P.	Complete Joint Penetration	PERM.	Permanent
CSK.	Countersink	PERP.	Perpendicular
		PL or ℗	Plate
DBA.	Deformed Bar Anchor	PLF	Pounds per linear Foot
DBL.	Double	PLYWD	Plywood
DEG.	Degree	PJP	Partial Joint Penetration
DET.	Detail	PREFAB.	Prefabricated
DF	Doug Fir-Larch	PROJ.	Project
DIA.	Diameter	PSF	Pounds per Square Foot
DIAG.	Diagonal	PSI	Pounds per Square Inch
DIAPH.	Diaphragm	P.T.	Post-Tensioning
DIM.	Dimension	P/T	Pressure-Treated
DN.	Down		
DO	Ditto	RAD.	Radius
DWG.	Drawing	REF.	Reference
		REINF.	Reinforce or Reinforcement
(E)	Existing	REQD.	Required
E.	East	REV.	Revise
EA.	Each	R.O.	Rough Opening
E.F.	Each Face		
EL.	Elevation	S.	South
ELEV.	Elevator	SCH. or SCHED.	Schedule
EMBED.	Embedment Length	SECT.	Section
ENGR.	Engineer	SHT.	Sheet
E.W.	Each Way	SIM.	Similar
EXP.	Expansion	SOG	Slab On Grade
EXT.	Exterior	SPEC.	Specification
		SQ.	Square
FDN.	Foundation	SQ. FT.	Square Feet
FIN.	Finish	SQ. IN.	Square Inch (Inches)
FLR.	Floor	STD.	Standard
FRP	Fiber Reinforced Polymer	STIFF.	Stiffener
F.S.	Far Side	STL.	Steel
FT.	Foot or Feet	STR.	Structural
FTG.	Footing	SUB.	Substitute
		SYM.	Symmetrical
GA.	Gauge		
GALV.	Galvanized	T/	Top of
GL	Glue Laminated	T&B	Top and Bottom
GRD.	Grade	T&G	Tongue & Groove
GWB	Gypsum Wall Board	THRU	Through
		TEMP.	Temporary
HF	Hem Fir	T.O.C.	Top of Concrete
HGR.	Hanger	T.O.S.	Top of Steel
HORIZ.	Horizontal	T.O.W.	Top of Wall
HSS	Hollow Structural Section	TRANS.	Transverse
HT.	Height	TS	Tube Steel
		TYP.	Typical
I.D.	Inside Diameter		
I.F.	Inside Face	UON or UNO	Unless Otherwise Noted
IN.	Inch		
INFO.	Information	VERT.	Vertical
INT.	Interior	VIF	Verify In Field
JT.	Joint	W.	West
		W/ or w/	With
KSF	Kips per Square Foot	WD	Wood
KSI	Kips per Square Inch	W.H.S.	Welded Headed Stud
		W/O	Without
		WP	Work Point
		W.T.S.	Welded Threaded Stud
		WWF	Welded Wire Fabric
		X SECT.	Cross Section
		X-STR	Extra Strong

ENGINEER'S SEAL

6/10/20

No.	REVISION	DATE

ISSUE	DATE

HARBORSIDE APARTMENTS

1310 "G" STREET
Bellingham, WA
Phase 1
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

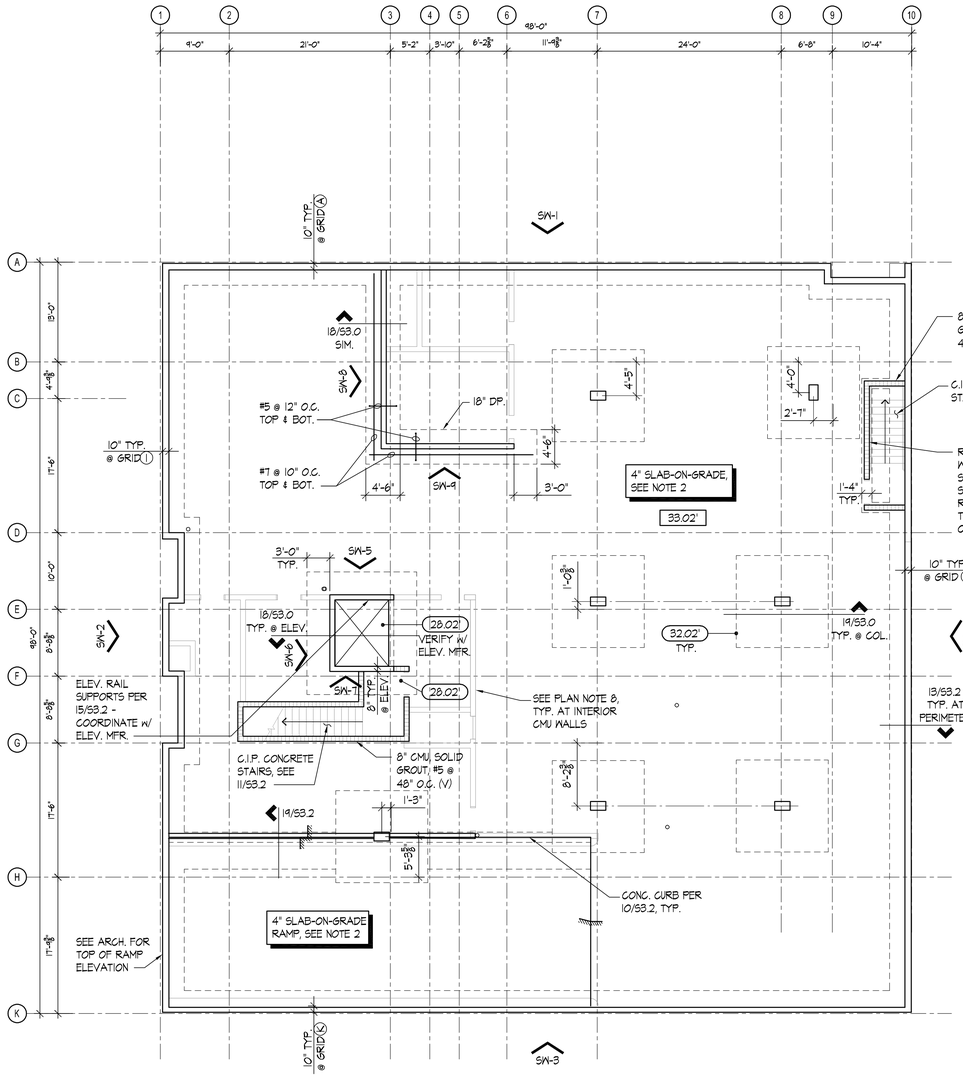
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Drawing Title:
GENERAL STRUCTURAL NOTES

PROJECT NO. :
DRAWN BY: TA
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Drawing No.
S1.2

PHOTO REDUCTION SCALE 0" 1 INCH 2 INCHES 3 INCHES 4 INCHES



FOUNDATION PLAN

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

PLAN NOTES:

1. VERIFY ALL DIMENSIONS WITH ARCHITECT.
2. SLAB ELEVATION VARIES PER PLAN AND ARCHITECTURAL PLAN. SLAB-ON-GRADE SHALL BE 4" THICK WITH 6x6 W1.4xW1.4 WWM AT CENTER, U.O.N. PROVIDE VAPOR BARRIER BELOW SLAB AT INTERIOR SPACES OVER FREE-DRAINING GRANULAR FILL PER GEOTECHNICAL REPORT.
3. PROVIDE CONSTRUCTION/CONTROL JOINTS IN SLABS ON GRADE TO DIVIDE SLAB INTO RECTANGULAR AREAS 225 SQUARE FEET OR LESS. AREAS SHALL BE APPROXIMATELY SQUARE AND HAVE NO ACUTE ANGLES. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND 2/S3.0.
4. TOPS OF ALL FOOTINGS SHALL BE PER PLAN. CONTRACTOR SHALL COORDINATE WITH FINAL SITE GRADES AND MAINTAIN DEPTH OF FOOTINGS SHOWN ON THE DRAWINGS.
5. SEE ARCHITECTURAL/MECHANICAL/CIVIL/UTILITIES DRAWINGS FOR UNDERSLAB PIPING. COORDINATE FOUNDATION DEPTHS AND PIPING IN ACCORDANCE WITH AFOREMENTIONED DRAWINGS.
6. ELEVATOR MANUFACTURER TO PROVIDE ELEVATOR GUIDERAILS. CONTRACTOR TO COORDINATE EXACT LOCATION WITH ELEVATOR MANUFACTURER.
7. THE SEISMIC SYSTEM AT CONCRETE LEVELS IS SPECIAL REINFORCED SHEAR WALLS. SEE SHEETS S3.4 - S3.6 FOR ELEVATIONS AND FURTHER NOTES.
8. SEE ARCH. FOR LOCATION OF ALL INTERIOR NON-BEARING CMU OR CONCRETE WALLS. SEE GENERAL STRUCTURAL NOTES AND DETAIL SHEET S6.0 FOR STRUCTURAL REQUIREMENTS.

LEGEND:

- X.X' — TOP OF SLAB ELEVATION
- STEP IN SLAB
- SW-x — SHEAR WALL ELEVATION PER S3.4 - S3.6 (SEE PLAN NOTE 7)
- HIGH / LOW — STEP IN FOOTING PER 7/S3.0
- (X.X') — TOP OF FOOTING ELEVATION (SEE PLAN NOTES 4 & 5)

BAR LEGEND:

(B) 5 B 15

- (B) — QUANTITY (WHERE SPECIFIED)
- 5 — BAR SIZE
- B — "T" TOP, "M" MIDDLE, "B" BOTTOM
- 15 — @ SPACING O.C. (EQUAL SPACE IF NOT SPECIFIED)

ENGINEER'S SEAL

6/10/20

No.	REVISION	DATE

ISSUE	DATE

HARBORSIDE APARTMENTS

1310 "G" STREET
Bellingham, WA
For:
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

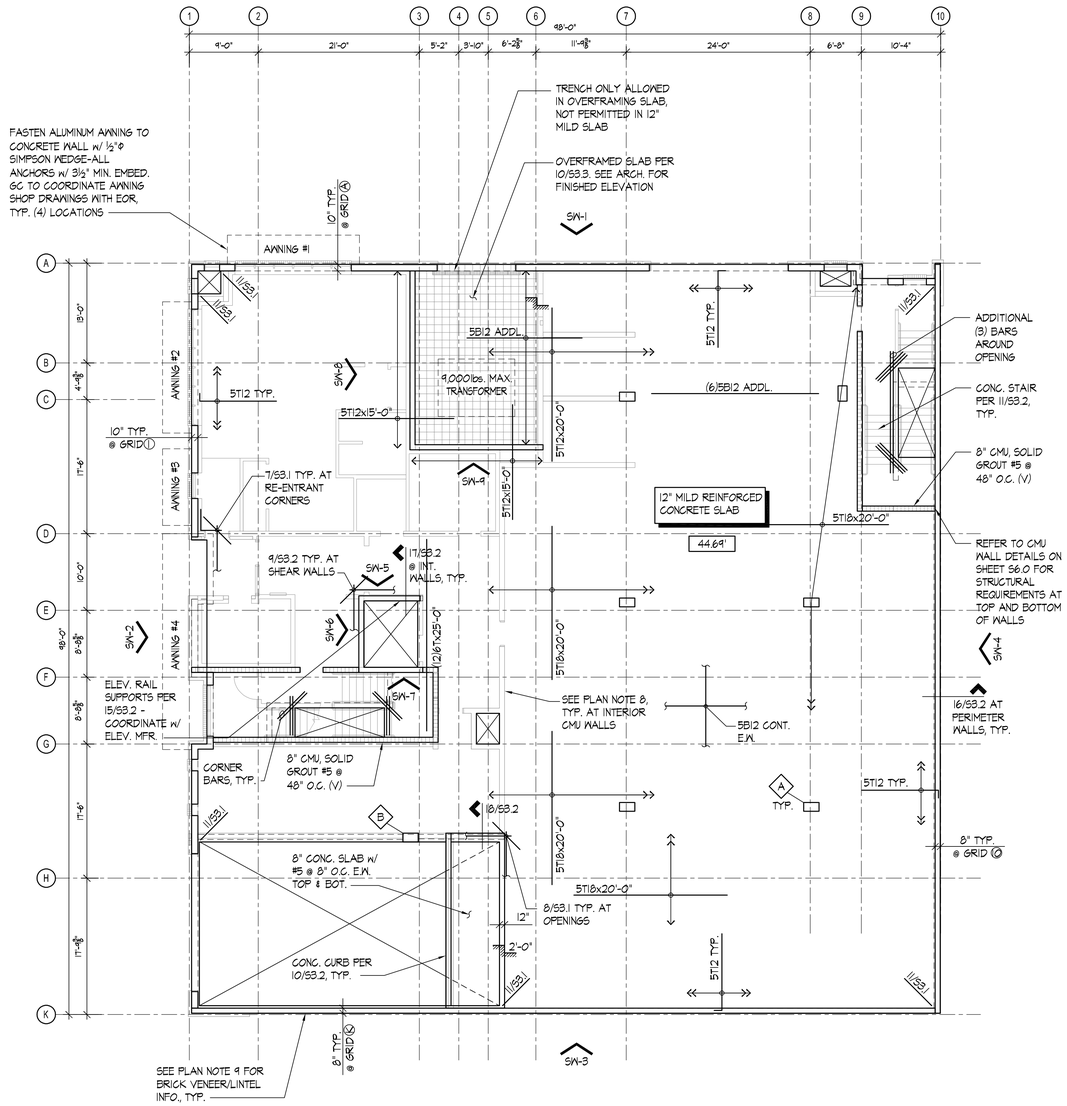
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FOUNDATION PLAN

PROJECT NO. :
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S2.0

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FIRST FLOOR MILD REINFORCING PLAN

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

PLAN NOTES:

1. VERIFY ALL DIMENSIONS WITH ARCHITECT.
2. TOP OF SLAB ELEVATION, SLAB THICKNESS AND REINFORCING SHALL BE AS NOTED ON PLAN. VERIFY DIMENSIONS, SLOPES, AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS.
3. SEE 18/S3.1 FOR TYPICAL REINFORCEMENT EXTENTS. TWO-WAY SLAB REINFORCING SHALL BE LAYERED FROM THE BOTTOM OF SLAB AS FOLLOWS:

   E-W BOTTOM BARS
   N-S BOTTOM BARS
   N-S TOP BARS
   E-W TOP BARS

4. MECHANICAL PIPING, ELECTRICAL FIXTURES, AND OTHER HEAVY LOADS HUNG FROM MILD SLAB SHALL BE SUPPORTED WITH UNISTRUT CONCRETE INSERTS, OR EQUAL.
5. MECHANICAL PIPING AND ELECTRICAL CONDUIT SHALL PENETRATE THE MILD SLAB AT ONLY PREDETERMINED SLEEVE LOCATIONS. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATION AND SIZE OF SLAB PENETRATIONS.
6. ELEVATOR MANUFACTURER TO PROVIDE ELEVATOR GUIDE RAILS. CONTRACTOR TO COORDINATE EXACT LOCATION WITH ELEVATOR MANUFACTURER.
7. THE SEISMIC SYSTEM AT CONCRETE LEVELS IS SPECIAL REINFORCED SHEAR WALLS. SEE SHEET S3.4-S3.6 FOR ELEVATIONS AND FURTHER NOTES. FOR SLAB DOWELING INTO SHEAR WALLS DETAILS.
8. SEE ARCH. FOR LOCATION OF ALL INTERIOR NON-BEARING CMU OR CONCRETE WALLS. SEE GENERAL STRUCTURAL NOTES AND DETAIL SHEET S6.0 FOR STRUCTURAL REQUIREMENTS.

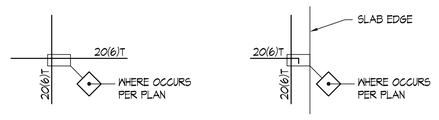
LEGEND:

- X.X' — TOP OF SLAB ELEVATION
- STEP IN SLAB
- X — STUD RAIL TYPE, SEE 4/S3.3
- SW-x — SHEAR WALL ELEVATION PER S3.4 - S3.6

BAR LEGEND:

(B) 5 B 15
- (B) — QUANTITY (WHERE SPECIFIED)
- 5 — BAR SIZE
- B — "T" TOP, "M" MIDDLE, "B" BOTTOM
- 15 — @ SPACING O.C. (EQUAL SPACE IF NOT SPECIFIED)

TYPICAL STUD RAILS & REINFORCING



REINFORCING AT INTERIOR COLUMNS, TYP. U.O.N.

REINFORCING AT EXTERIOR COLUMNS, TYP. U.O.N.

NOTE:
FOR STRUCTURAL NOTES AND ABBREVIATIONS, SEE SHEETS S1.0 THRU S1.2

ENGINEER'S SEAL
6/10/20

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HARBORSIDE APARTMENTS

1310 "G" STREET
Bellingham, WA
Floor

Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

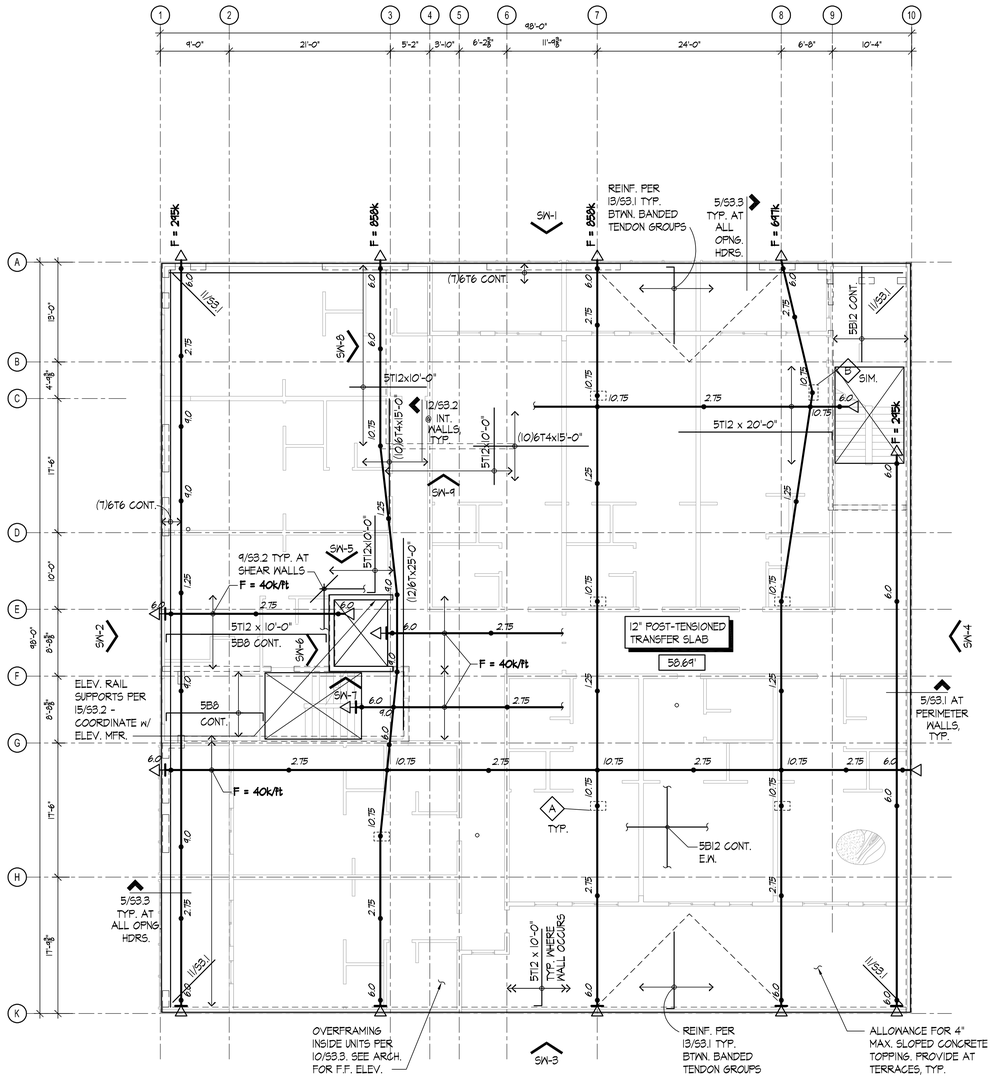
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Drawing Title:
FIRST FLOOR PLAN

PROJECT NO. :
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Drawing No.
S2.1

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SECOND FLOOR MILD REINFORCING AND PT PLAN

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

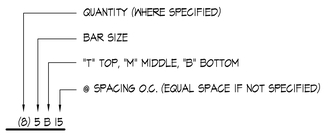
PLAN NOTES:

1. VERIFY ALL DIMENSIONS WITH ARCHITECT.
2. TOP OF SLAB ELEVATION, SLAB THICKNESS AND REINFORCING SHALL BE AS NOTED ON PLAN. VERIFY DIMENSIONS, SLOPES, AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS.
3. TRANSFER POST-TENSIONED SLAB IS DESIGNED FOR 3-HOUR FIRE SEPARATION. PROVIDE 1" MINIMUM CLEAR COVER TO MILD REINFORCING. PROVIDE 2⅜" MINIMUM CLEAR COVER TO POST-TENSIONING AT EXTERIOR SPANS AND 1" MINIMUM CLEAR COVER AT INTERIOR SPANS. ALL OTHER SLABS AREA DESIGNED FOR 3-HOUR FIRE SEPARATION. PROVIDE 1" MINIMUM CLEAR COVER TO MILD REINFORCING. PROVIDE 1¾" MINIMUM CLEAR COVER TO POST-TENSIONING REINFORCING AT EXTERIOR SPANS AND 1" MINIMUM CLEAR COVER AT INTERIOR SPANS.
4. SEE SHEET S1.0 FOR POST-TENSIONING GENERAL NOTES.
5. SEE SHEETS S3.1 & S3.2 FOR TYPICAL POST-TENSIONING DETAILS, INCLUDING ADDITIONAL REQUIRED REINFORCING.
6. STRESS MINIMUM OF (2) TENDONS AT SLAB EDGES PERPENDICULAR TO BANDED TENDON ENDS PRIOR TO STRESSING BANDED TENDONS.
7. PROVIDE ADD'L REINF. PER 12/S3.1 AT WOOD SW HOLDOWNS.
8. PROVIDE (3) #4 BARS @ 6" O.C. TOP AND BOTTOM CONTINUOUS (SEE 20/S3.1 FOR PLACEMENT) ALONG PERIMETER OF SLAB WHERE NOTED ON PLAN. BARS ARE IN ADDITION TO (2) #4 EDGE BARS SHOWN ON 20/S3.1 AND ON PLAN. (3) #4 TOP AND BOTTOM BAR ARE NOT REQUIRED WHERE CONCRETE SHEAR WALL REINFORCING OF 9/S3.2 IS SPECIFIED.
9. MECHANICAL PIPING, ELECTRICAL FIXTURES, AND OTHER HEAVY LOADS HUNG FROM PT SLAB SHALL BE SUPPORTED WITH UNISTRUT CONCRETE INSERTS, OR EQUAL.
10. MECHANICAL PIPING AND ELECTRICAL CONDUIT SHALL PENETRATE THE PT SLAB AT ONLY PREDETERMINED SLEEVE LOCATIONS. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATION AND SIZE OF SLAB PENETRATIONS.
11. ALL POST-TENSIONING STRESSING AND ANCHOR ENDS SHALL BE FULLY ENCAPSULATED ACCORDING TO POST-TENSIONING GENERAL NOTES.
12. SPACE TENDONS WITHIN REGION NOTED ON PLAN SUCH THAT TENDONS ARE IN (2) TENDON BUNDLES SPACED AT 6" O.C. TENDONS SHALL MAINTAIN A MINIMUM HORIZONTAL SWEEP RADIUS OF 10'-0". WHERE TENDON CURVATURE EXCEEDS 1:6 PROVIDE HAIRPINS PER 5/S3.2.
13. ELEVATOR MANUFACTURER TO PROVIDE ELEVATOR GUIDE RAILS. CONTRACTOR TO COORDINATE EXACT LOCATION WITH ELEVATOR MANUFACTURER.
14. THE SEISMIC SYSTEM AT CONCRETE LEVELS IS SPECIAL REINFORCED SHEAR WALLS. SEE SHEETS S3.4-S3.6 FOR ELEVATIONS AND FURTHER NOTES. FOR SLAB DOWELING INTO SHEAR WALLS DETAILS.
15. SEE ARCH. FOR LOCATION OF ALL INTERIOR NON-BEARING CMU OR CONCRETE WALLS. SEE GENERAL STRUCTURAL NOTES AND DETAIL SHEET S6.0 FOR STRUCTURAL REQUIREMENTS.

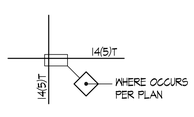
LEGEND:

- X.X' — TOP OF SLAB ELEVATION
- STEP IN SLAB
- X — STUD RAIL TYPE, SEE 4/S3.3
- SW-x — SHEAR WALL ELEVATION PER S3.4 - S3.6

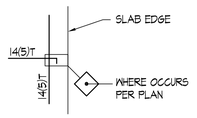
BAR LEGEND:



TYPICAL STUD RAILS & REINFORCING



REINFORCING AT INTERIOR COLUMNS, TYP. U.O.N.



REINFORCING AT EXTERIOR COLUMNS, TYP. U.O.N.

NOTE:
FOR STRUCTURAL NOTES AND ABBREVIATIONS, SEE SHEETS S1.0 THRU S1.2

ENGINEER'S SEAL
6/10/20

ISSUE	DATE	No.	REVISION	DATE

HARBORSIDE APARTMENTS
1310 "G" STREET
Bellingham, WA
For:
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

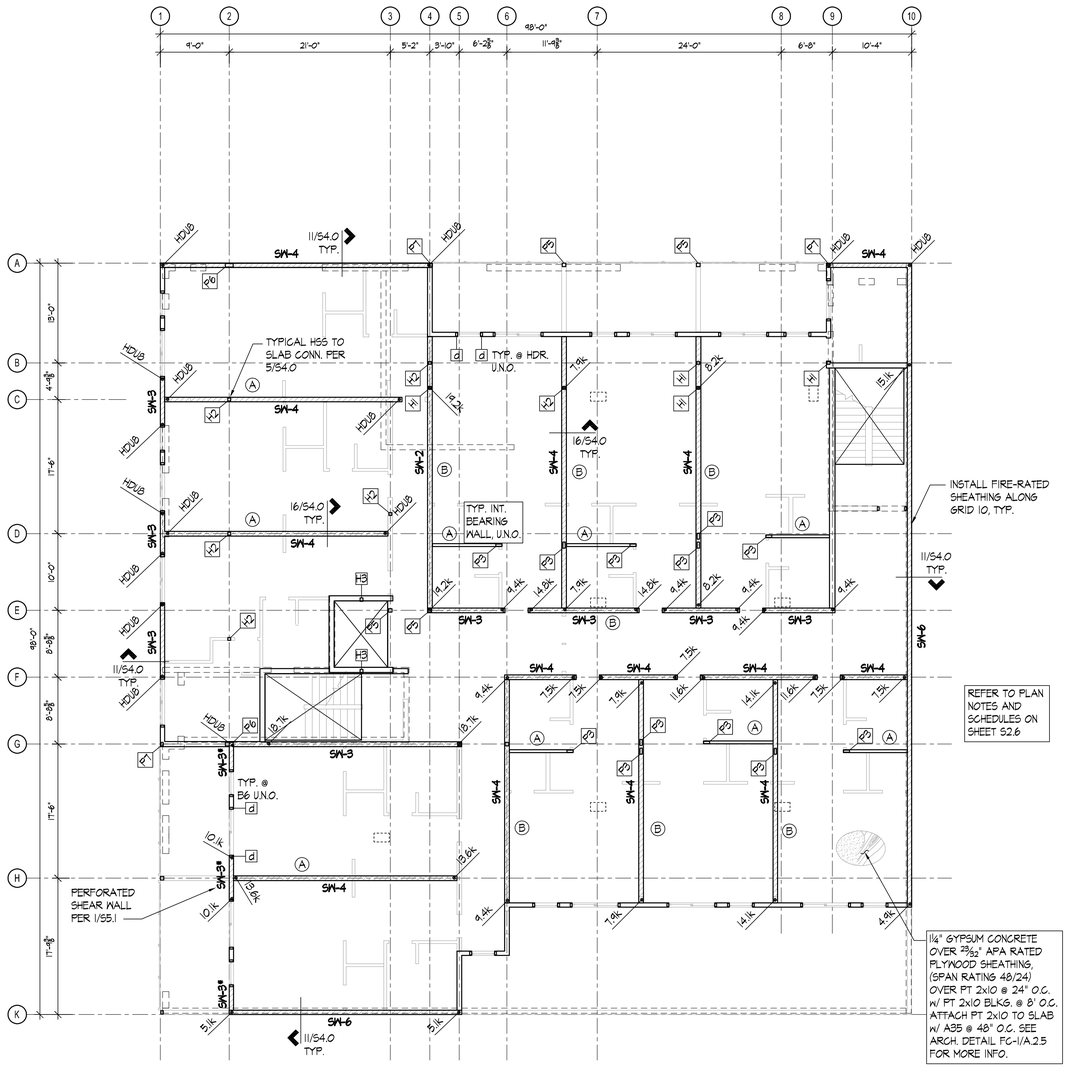
MJH ENGINEERING P.S.
consulting structural associates
Bellingham, WA 98228
Phone: (360)715-3058
email: mjhpe@comcast.net

Drawing Title:
2nd FLOOR PLANS

PROJECT NO. :
DRAWN BY: TA
DATE:

Drawing No.
S2.2

PHOTO REDUCTION SCALE 0" 1 INCH 2 INCHES 3 INCHES 4 INCHES



SECOND FLOOR WOOD FRAMING PLAN

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

ENGINEER'S SEAL

6/10/20

No.	REVISION	DATE

ISSUE DATE

HARBORSIDE APARTMENTS

1310 "G" STREET
Bellingham, WA
For:
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

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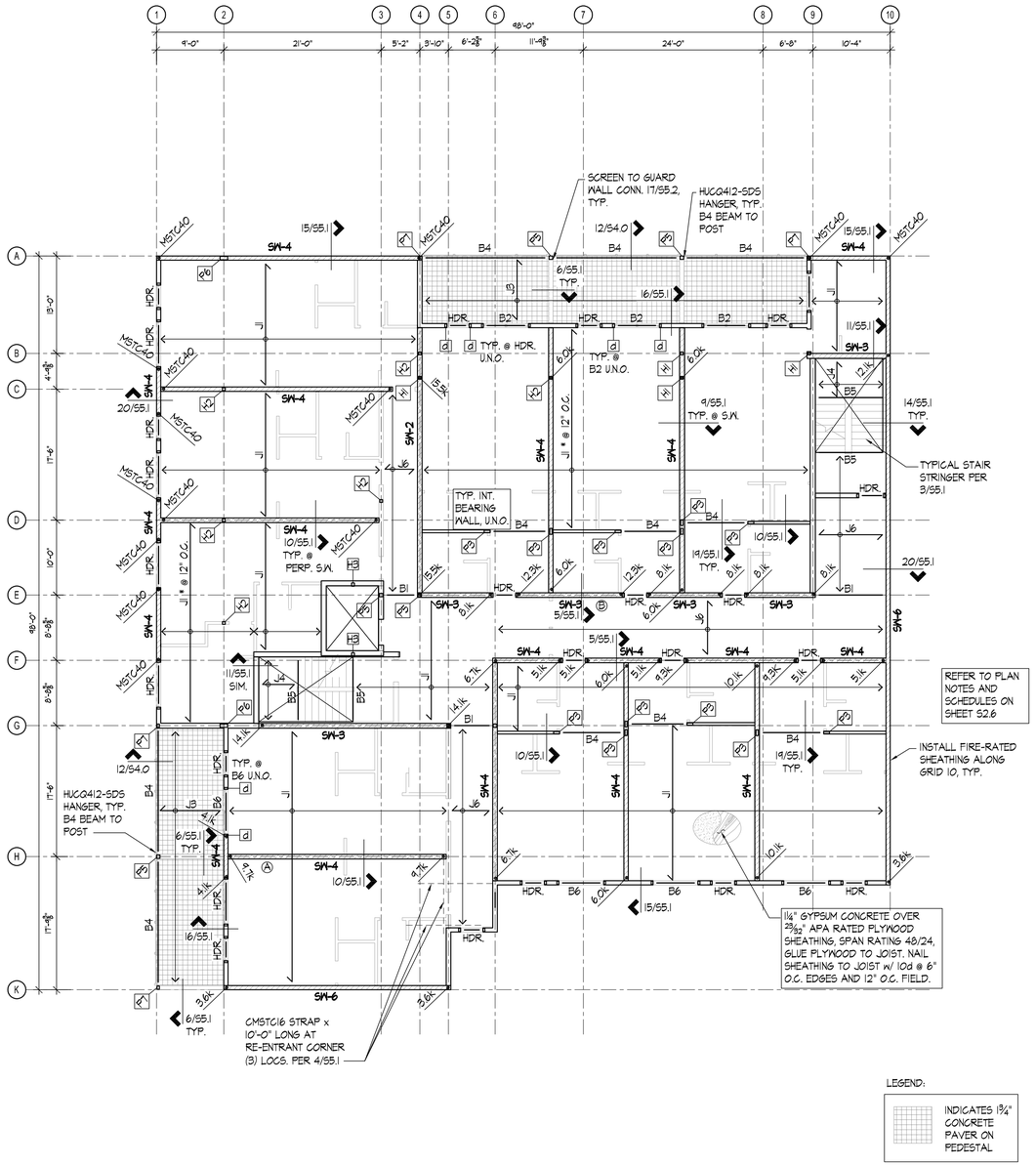
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2nd FLOOR FRAMING PLAN

PROJECT NO. :
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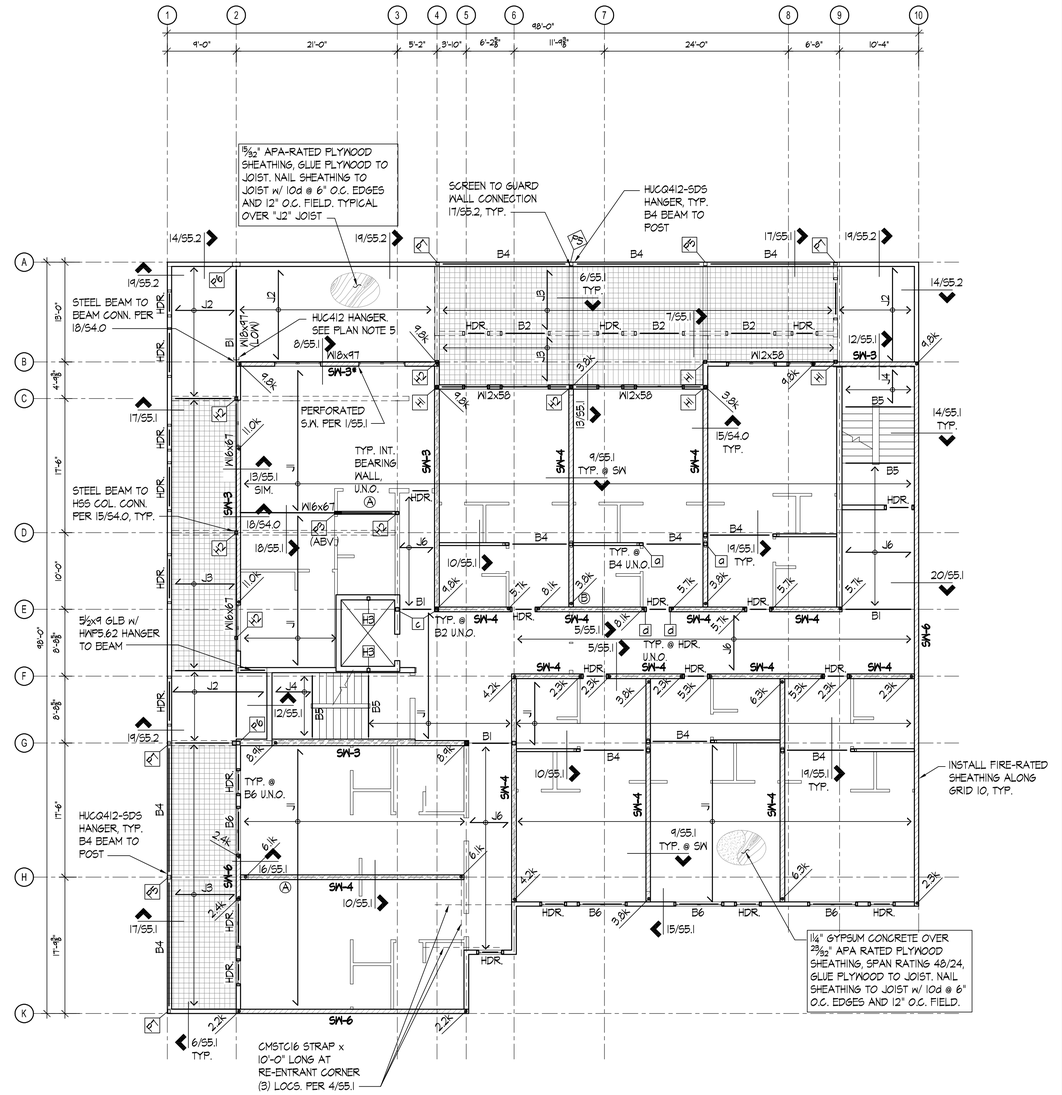
S2.3

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THIRD FLOOR FRAMING PLAN

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



FOURTH FLOOR FRAMING PLAN

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

ENGINEER'S SEAL

6/10/20

No.	REVISION	DATE

ISSUE	DATE

HARBORSIDE APARTMENTS

1310 "G" STREET
Bellingham, WA

Bad Rabbit Properties
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

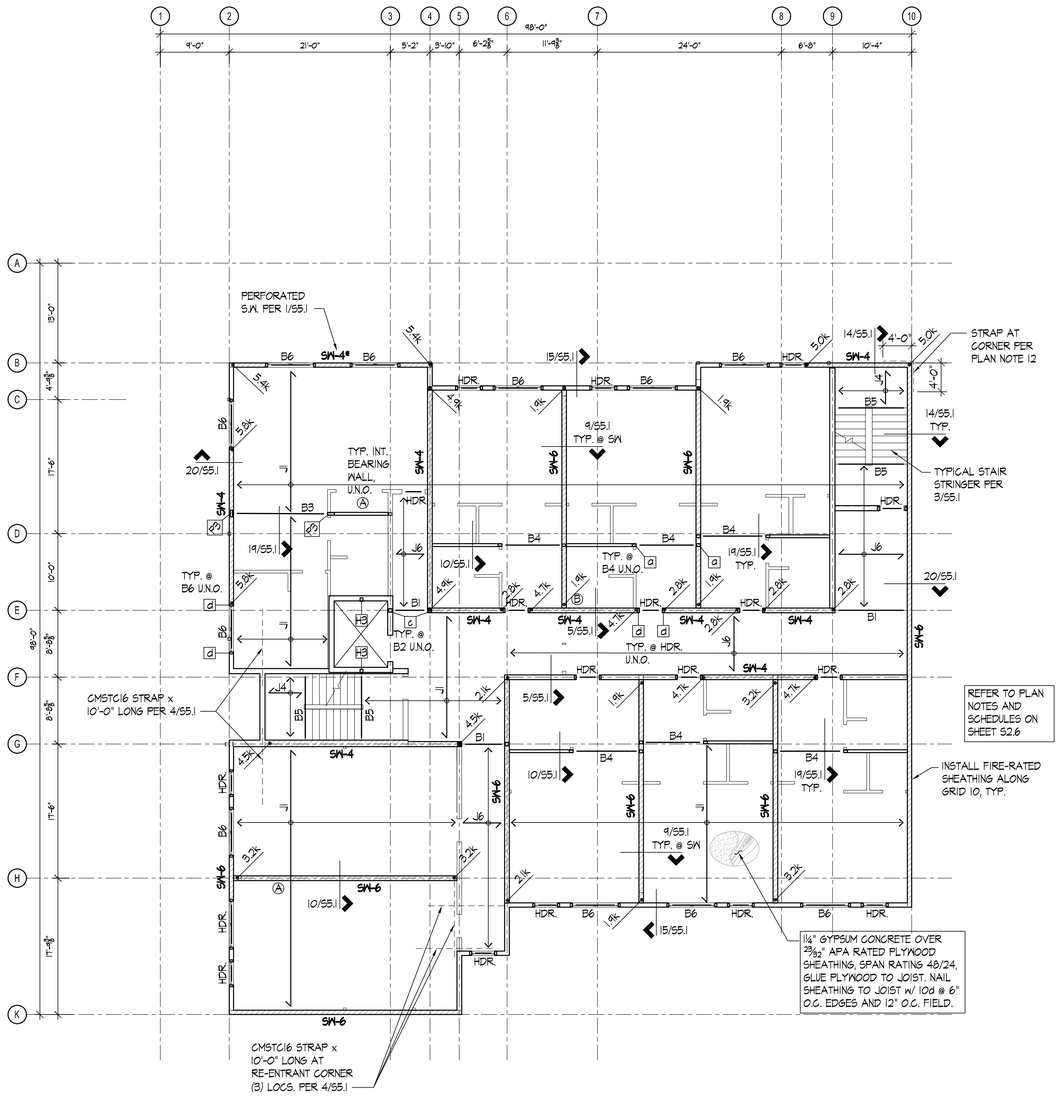
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Bellingham, WA 98228
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email: mjhpe@comcast.net

Drawing Title:
3rd & 4th FLOOR PLANS

PROJECT NO. :
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DATE:

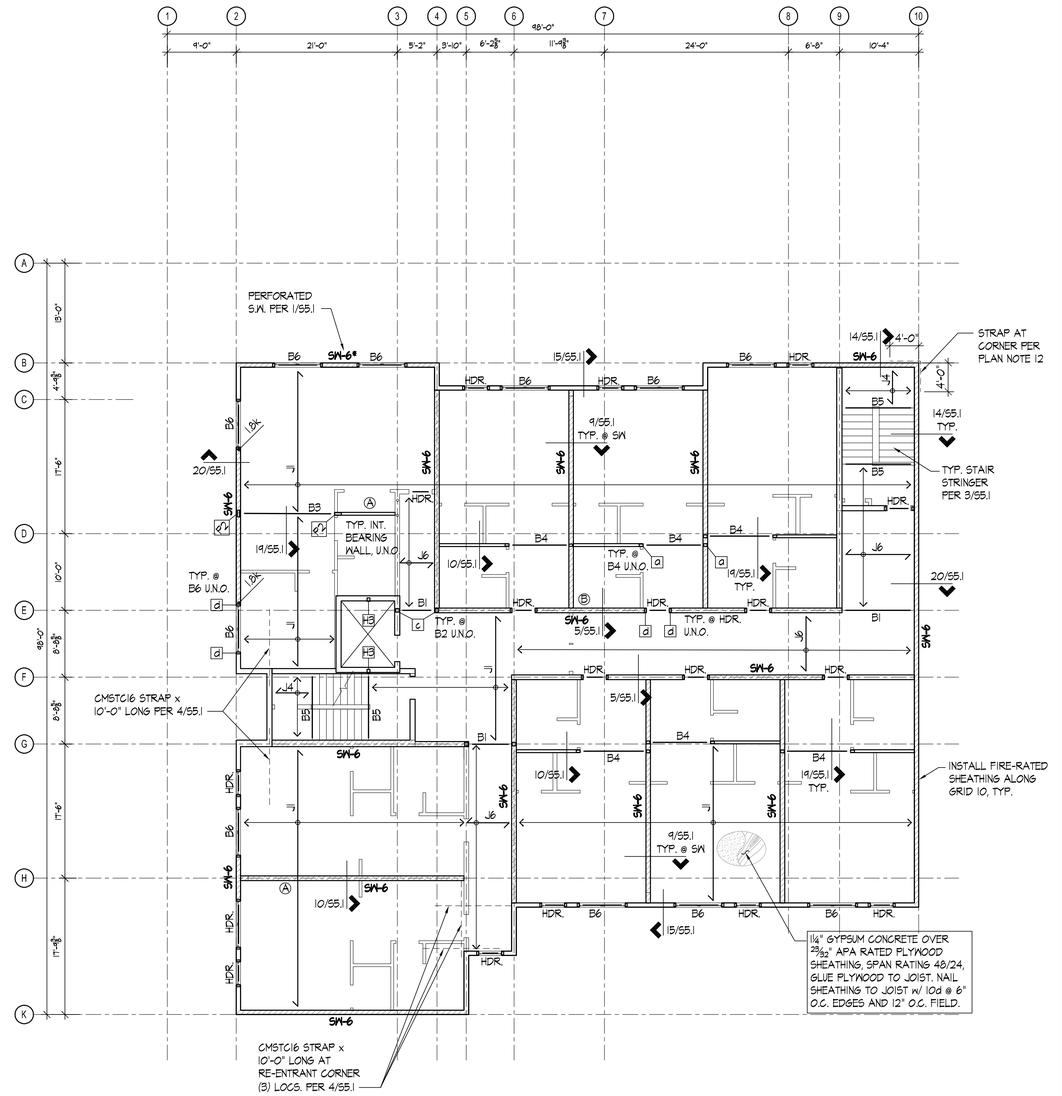
Drawing No.
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PHOTO REDUCTION SCALE 0 1 INCH 2 INCHES 3 INCHES 4 INCHES



FIFTH FLOOR FRAMING PLAN

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



SIXTH FLOOR FRAMING PLAN

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

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ISSUE	DATE	No.	REVISION	DATE

HARBORSIDE APARTMENTS

1310 "G" STREET
Bellingham, WA

Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

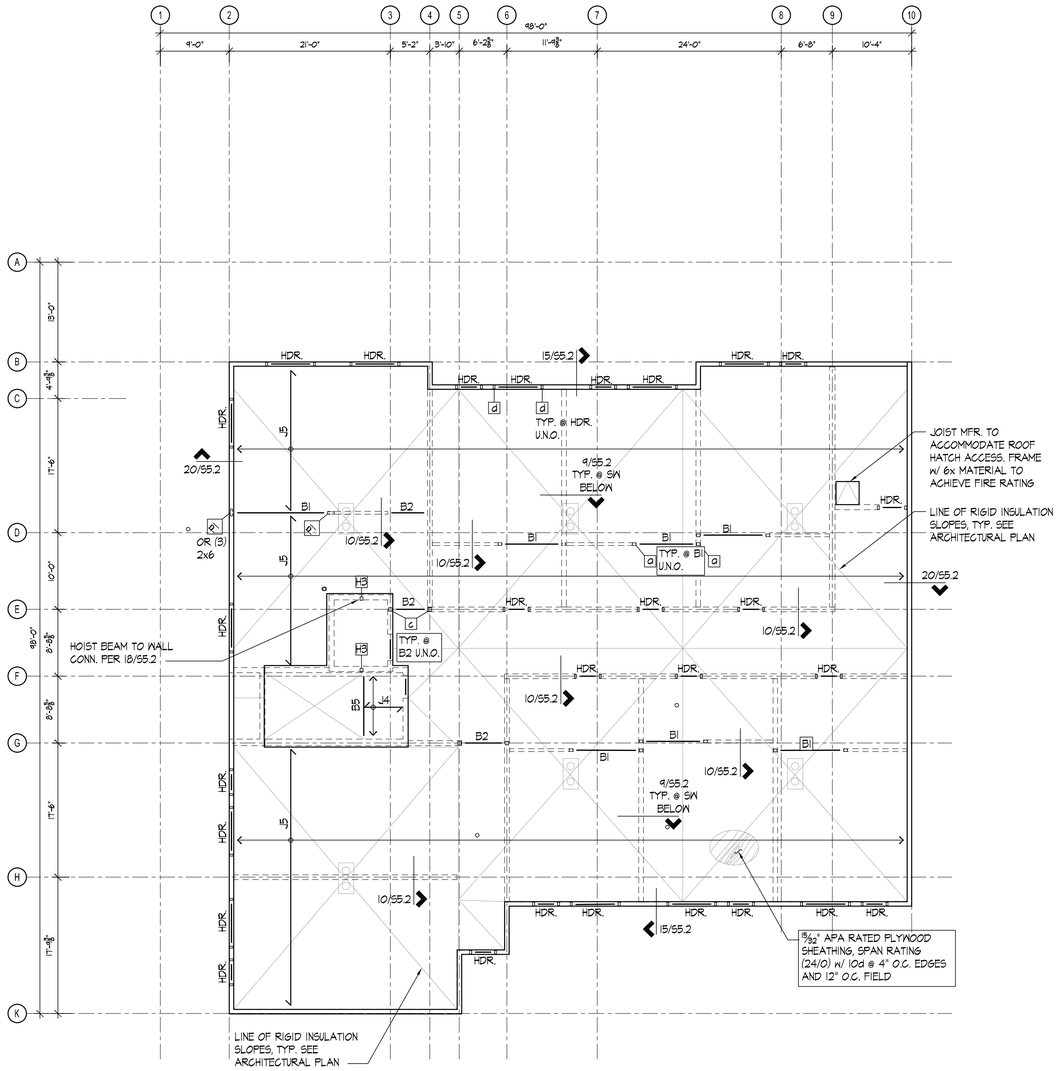
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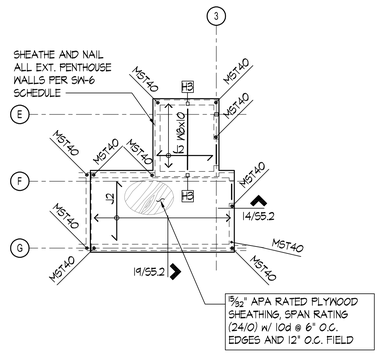
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5th & 6th FLOOR PLANS

PROJECT NO. : ____
DRAWN BY: TA
DATE: ____

Drawing No.
S2.5

PHOTO REDUCTION SCALE 0" 1 INCH 2 INCHES 3 INCHES 4 INCHES





PENTHOUSE ROOF FRAMING PLAN

ROOF FRAMING PLAN

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

JOIST SCHEDULE			
MARK	DESCRIPTION	HANGER	LEDGER CONNECTION
J1	14" RFPI 60S JOISTS @ 16" O.C.	ITS PER MFR.	N/A
J2	2x12 @ 24" O.C.	HUS210	2x12 w/ (3) ¼"Øx5" SDS @ EA. STUD
J3	PT 2x10 @ 16" O.C.	HUS210Z	PT 2x10 w/ (3) ¼"Øx5" SDS @ EA. STUD
J4	2x10 @ 16" O.C.	HUS210	2x10 w/ (2) ¼"Øx5" SDS @ EA. STUD
J5	11⅞" RFPI 70 JOISTS @ 19.2" O.C.	ITS PER MFR.	N/A
J6	2x8 @ 16" O.C.	LUS28	2x8 w/ (2) ¼"Øx3½" SDS @ EA. STUD

NOTES:
1. NOT ALL JOISTS OCCUR ON EACH PLAN
2. INSTALL WEB FILLER PER MFR

STEEL POST SCHEDULE	
MARK	DESCRIPTION
H1	HSS 5x5x⅛
H2	HSS 5½x5½x⅜
H3	HSS 4x6x¼

WOOD BEAM SCHEDULE	
MARK	DESCRIPTION
HDR	(2) 2x8 (DROP)
B1	3½x11⅞ GLB
B2	3½x11½ GLB (DROP)
B3	5½x14 GLB
B4	3½x14 GLB
B5	6x12
B6	4x10

NOTES:
1. CAN USE 4x8 IN LIEU OF (2) 2x8 AT "HDR"

WOOD POST SCHEDULE	
MARK	DESCRIPTION
P1	4x4
P2	4x8
P3	3½x4½ GLB
P4	3½x10½ GLB
P5	6x6
P6	6x12
P7	4x6

MULTI STUD POST SCHEDULE								
LEVEL	MARK							
	◇a		◇b		◇c		◇d	
	2x4	2x6	2x4	2x6	2x4	2x6	2x4	2x6
ROOF	2	2	-	3	-	2	-	2
5th	3	2	-	3	-	2	-	2
4th	3	2	-	3	-	3	-	2
3rd	4	3	-	3	-	3	-	3
2nd	P3	3	-	3	-	P5	-	3

NOTES:
1. SEE PLAN NOTES FOR # OF STUDS IF NOT SHOWN ON SCHEDULE
2. PROVIDE MINIMUM (2) 2x STUDS AT EACH BEAM/HDR

WALL STUD SCHEDULE				
LEVEL	MARK			
	Ⓐ		Ⓑ	
	2x4	2x6	2x4	2x6
ROOF	2x4 @ 16" O.C.	2x6 @ 16" O.C.	-	2x6 @ 16" O.C.
5th	2x4 @ 16" O.C.	2x6 @ 16" O.C.	-	2x6 @ 16" O.C.
4th	2x4 @ 12" O.C.	2x6 @ 16" O.C.	-	2x6 @ 16" O.C.
3rd	2x4 @ 12" O.C.	2x6 @ 16" O.C.	-	2x6 @ 16" O.C.
2nd	3x4 @ 12" O.C.	(2) 2x6 @ 16" O.C.	-	2x6 @ 16" O.C.

NOTES:
1. SEE PLAN NOTES FOR WALLS NOT SHOWN ON SCHEDULE
2. DOUBLE 2x STUDS MAY BE SUBSTITUTED FOR A SINGLE 3x MEMBER. NAIL TOGETHER PER STRUCTURAL NOTES.

GENERAL FRAMING SCHEDULE | 15

ROOF FRAMING / FLOOR FRAMING PLAN NOTES:

1. STUD WALLS SHALL BE 2x STUDS @ 16" O.C. U.N.O. ON PLAN AND PER SCHEDULES. FOR HOLES AND NOTCHES IN STUDS AND PLATE, SEE 16/55.0. ALL EXTERIOR WALLS TO BE FRAMED PER SW-6 SCHEDULE UNLESS OTHERWISE NOTED.
2. POSTS OR JAMB STUDS SUPPORTING BEAMS, OR POSTS SHALL BE MINIMUM (2) 2x STUDS, U.N.O. NAIL STUDS TOGETHER PER GENERAL STRUCTURAL NOTES.
3. FLOOR JOISTS SHALL BE PER SCHEDULE. ROOF JOISTS SHALL ALSO BE PER SCHEDULE.
4. CONTRACTOR TO COORDINATE PLUMBING, PIPING, DUCTING, AND OTHER MECHANICAL SYSTEM SUPPORT CONFIGURATIONS, LOADS AND CONNECTION DETAILS WITH MECHANICAL CONTRACTOR AND JOIST MANUFACTURER PRIOR TO CONSTRUCTION.
5. PROVIDE MINIMUM (2) 2x6 BELOW BEAM TO LEDGER INSTALLATION. WHERE BEAM CONNECTS TO LEDGER, PROVIDE MINIMUM (8) TOTAL SDS SCREWS AT LEDGER TO RIM CONNECTION AT HANGER.
6. JOIST MFR. TO PROVIDE FACEMOUNT HANGERS AS REQUIRED BASED ON CONDITIONS SHOWN ON PLAN AND DETAILS.
7. PROVIDE MINIMUM 3½" RIM JOIST AT DECK LOCATIONS.
8. FORCES ON PLANS AT SHEAR WALL END INDICATE TENSION/COMPRESSION LOADS FOR CONTINUOUS ROD HOLDOWN SYSTEM. PROVIDED FORCES ARE ASD LOAD VALUES.
9. BRICK LINTEL AND TIE DETAIL TO BE INSTALLED AS SHOWN ON THE ARCH. DRAWINGS. CONNECTIONS PER 11 AND 12/S6.0 RESPECTIVELY. SEE SHEET S6.0 FOR MORE DETAIL INFO.
10. FALL ARREST ANCHORS AT ROOF LEVEL TO BE INSTALLED PER 13/S5.2.
11. PLEASE REFERENCE DETAILS 1 & 8/S5.0 FOR FRAMING AT SHAFTS, ELEVATORS, AND STAIRS TO ACHIEVE REQUIRED FIRE RATING.
12. ADD CMSTC16 STRAP x 8'-0" LONG AT CENTER OF RIMBOARD. WRAP STRAP AROUND CORNER AS SHOWN PER PLAN.

GENERAL FRAMING PLAN NOTES | 20

ENGINEER'S SEAL
6/10/20

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1310 "G" STREET
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Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

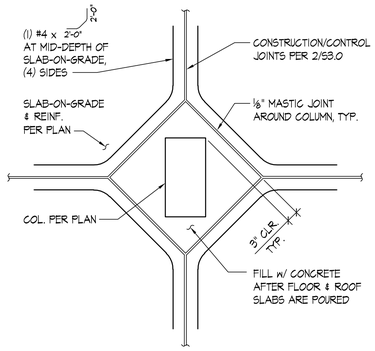
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Drawing Title:
ROOF FRAMING PLAN

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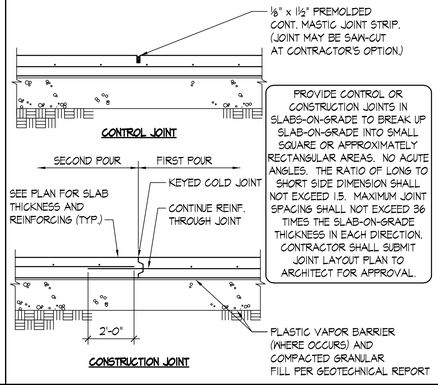
Drawing No.
S2.6

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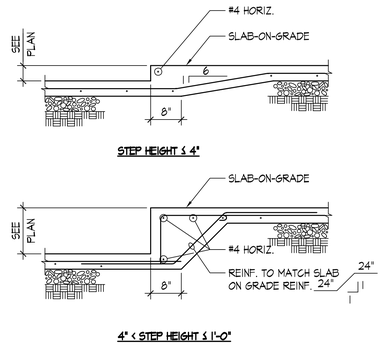


PLAN VIEW

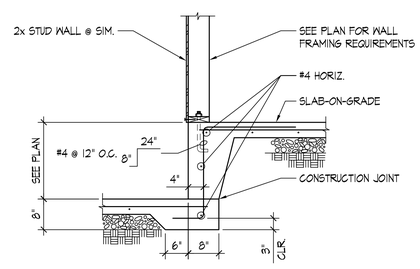
TYPICAL SLAB-ON-GRADE ISOLATION JOINT @ COLUMN SCALE: NONE | 1

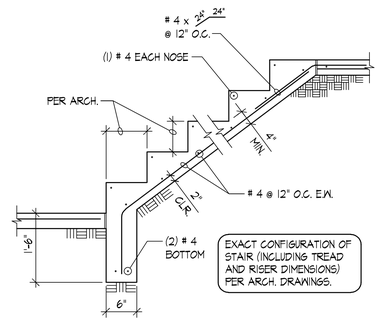


TYPICAL SLAB-ON-GRADE JOINTS SCALE: NONE | 2

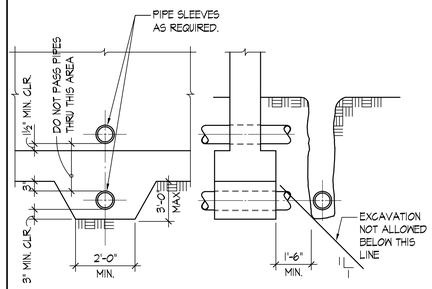


TYPICAL SLAB-ON-GRADE STEP DETAIL SCALE: NONE | 4



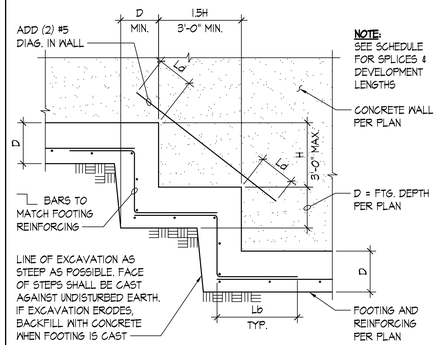


TYPICAL STAIR ON GRADE SCALE: NONE | 5

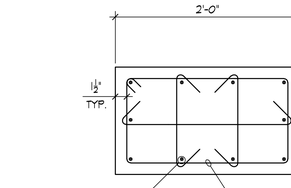


NOTE:
PIPES MUST RUN PERPENDICULAR THROUGH WALL (NOT SKEWED)

TYPICAL PIPE AND TRENCH LOCATIONS PERPENDICULAR TO FOOTING SCALE: 1"=1'-0" | 6



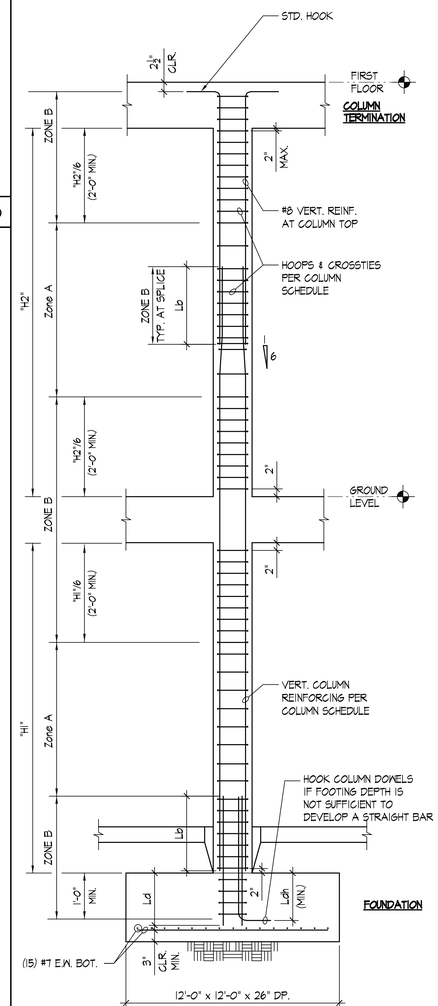
TYPICAL STEPPED FOOTING SCALE: 1"=1'-0" | 7



COLUMN DETAIL SCALE: 1 1/2"=1'-0" | 8

COLUMN SCHEDULE

MARK	SIZE	VERT. REINF.	HOOPS & CROSSTIES		DETAIL
			ZONE A	ZONE B	
C1	14" x 24"	(10) #7	#5 @ 4.5" O.C.	#5 @ 3" O.C.	8/S3.0



COLUMN SCHEDULE AND ELEVATION SCALE: NONE | 19

REINFORCING SPLICE AND DEVELOPMENT LENGTH SCHEDULE

(FOR GRADE 60, UNCOATED BARS, NORMAL WEIGHT CONCRETE)

(I) MINIMUM STRAIGHT DEVELOPMENT LENGTH FOR BARS IN TENSION (L_d)

BAR SIZE	f'c = 4000 PSI TOP BARS	f'c = 4000 PSI OTHER BARS	f'c = 5000 PSI TOP BARS	f'c = 5000 PSI OTHER BARS
# 3	18"	14"	17"	13"
# 4	25"	19"	22"	17"
# 5	31"	24"	28"	21"
# 6	37"	28"	33"	26"
# 7	54"	42"	48"	37"
# 8	62"	47"	55"	42"
# 9	70"	54"	62"	48"
# 10	78"	60"	70"	54"
# 11	87"	67"	78"	60"

NOTE:
"TOP BARS" ARE HORIZONTAL BARS w/ MORE THAN 12" DEPTH OF CONCRETE CAST BELOW THEM. IF CLEAR CONCRETE COVER IS NOT GREATER THAN THE DIAMETER OF THE BAR OR THE CENTER TO CENTER SPACING IS NOT GREATER THAN 2 BAR DIAMETERS, THEN VALUES SHALL BE INCREASED BY 50%.

(II) MINIMUM CLASS "B" LAP SPLICE LENGTH FOR BARS IN TENSION (L_b)

BAR SIZE	f'c = 4000 PSI TOP BARS	f'c = 4000 PSI OTHER BARS	f'c = 5000 PSI TOP BARS	f'c = 5000 PSI OTHER BARS
# 3	24"	18"	22"	17"
# 4	32"	25"	29"	23"
# 5	40"	31"	36"	28"
# 6	48"	37"	44"	34"
# 7	70"	54"	63"	49"
# 8	80"	62"	72"	56"
# 9	90"	70"	81"	63"
# 10	102"	78"	92"	71"
# 11	113"	87"	102"	78"

NOTE:
"TOP BARS" IN BEAMS ARE HORIZONTAL BARS w/ MORE THAN 12" DEPTH OF CONCRETE CAST BELOW THEM. IF CLEAR CONCRETE COVER IS NOT GREATER THAN THE DIAMETER OF THE BAR OR THE CENTER TO CENTER SPACING IS NOT GREATER THAN 2 BAR DIAMETERS, THEN VALUES SHALL BE INCREASED BY 50%.

(III) MINIMUM EMBEDMENT LENGTHS FOR STANDARD END HOOKS (L_{dh})

BAR SIZE	f'c = 4000 PSI ALL BARS	f'c = 5000 PSI BAR SIZE	f'c = 5000 PSI ALL BARS
# 3	6"	# 3	6"
# 4	7"	# 4	6"
# 5	8"	# 5	7"
# 6	10"	# 6	9"
# 7	12"	# 7	10"
# 8	13"	# 8	12"
# 9	15"	# 9	13"
# 10	17"	# 10	15"
# 11	19"	# 11	17"

NOTE:
IF SIDE COVER IS NOT EQUAL TO OR GREATER THAN 2½" AND/OR END COVER FOR HOOKS IS NOT EQUAL TO OR GREATER THAN 2", THEN VALUES SHALL BE INCREASED BY 43%.

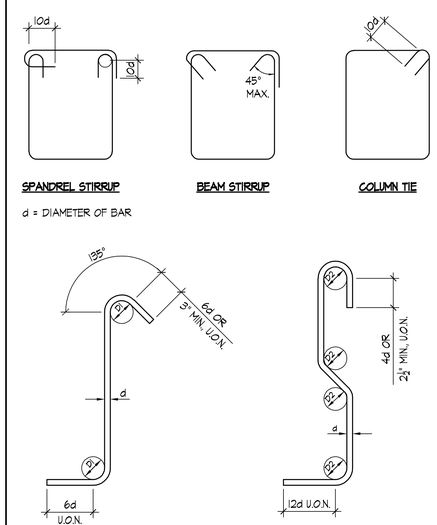
(IV) MINIMUM STRAIGHT DEVELOPMENT LENGTH FOR BARS IN COMPRESSION (L_{dc})

BAR SIZE	f'c = 5000 PSI ALL BARS
# 3	8"
# 4	9"
# 5	12"
# 6	14"
# 7	17"
# 8	18"
# 9	21"
# 10	24"
# 11	27"

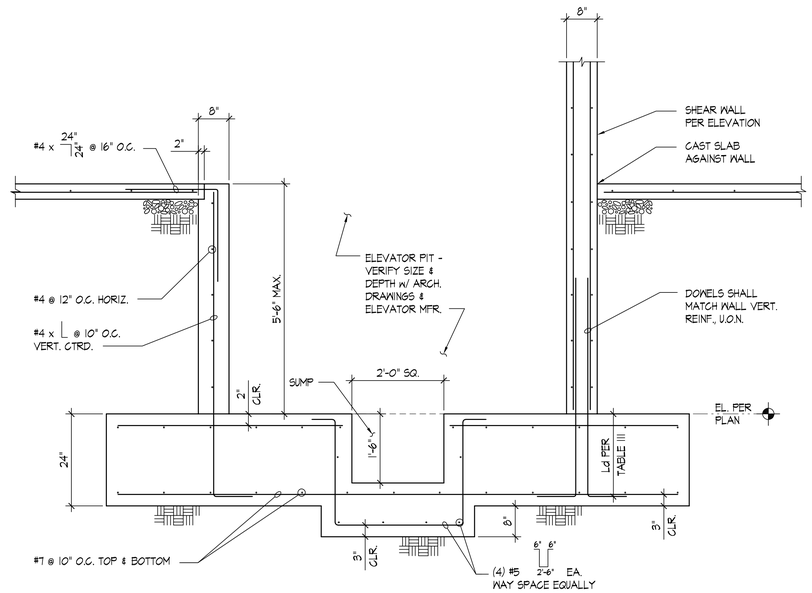
(V) MINIMUM LAP SPLICE LENGTHS FOR BARS IN COMPRESSION (L_{bc})

BAR SIZE	f'c = 5000 PSI ALL BARS
# 3	12"
# 4	15"
# 5	19"
# 6	23"
# 7	26"
# 8	30"
# 9	34"
# 10	38"
# 11	42"

TYPICAL SPLICE SCHEDULE SCALE: NONE | 20



TYPICAL REBAR BENDS SCALE: NONE | 16



ELEVATOR SHEAR WALL FOOTING SCALE: 3/4"=1'-0" | 18

TYPICAL SLAB-ON-GRADE ISOLATION JOINT @ COLUMN SCALE: NONE | 1

TYPICAL SLAB-ON-GRADE JOINTS SCALE: NONE | 2

TYPICAL SLAB-ON-GRADE STEP DETAIL SCALE: NONE | 4

TYPICAL STAIR ON GRADE SCALE: NONE | 5

TYPICAL PIPE AND TRENCH LOCATIONS PERPENDICULAR TO FOOTING SCALE: 1"=1'-0" | 6

TYPICAL STEPPED FOOTING SCALE: 1"=1'-0" | 7

COLUMN DETAIL SCALE: 1 1/2"=1'-0" | 8

TYPICAL REBAR BENDS SCALE: NONE | 16

ELEVATOR SHEAR WALL FOOTING SCALE: 3/4"=1'-0" | 18

COLUMN SCHEDULE AND ELEVATION SCALE: NONE | 19

TYPICAL SPLICE SCHEDULE SCALE: NONE | 20

ENGINEER'S SEAL
6/10/20

No.	REVISION	DATE

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1310 "G" STREET
Bellingham, WA
Floor

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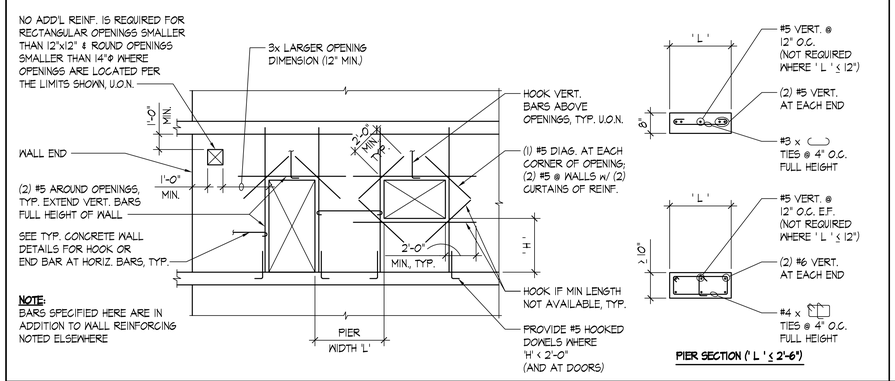
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DETAILS

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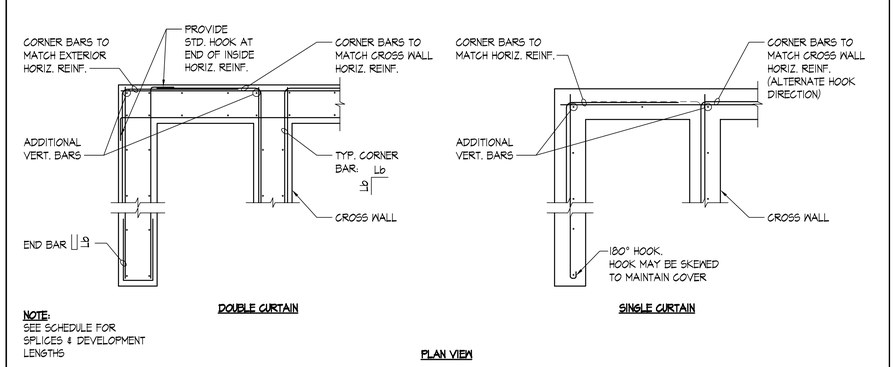
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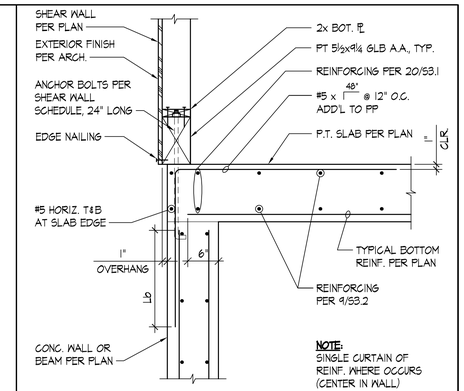


TYPICAL OPENING REINFORCING AT CONCRETE WALLS — SCALE: NONE — 2

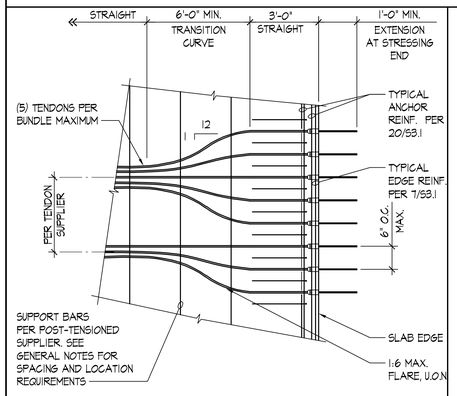
PIER SECTION ('L' ≤ 2'-6")



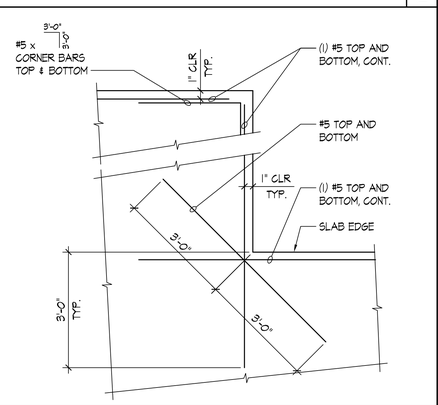
TYPICAL CORNER AND WALL END BAR ARRANGEMENT AT CONCRETE WALLS OR FOOTINGS — SCALE: NONE — 4



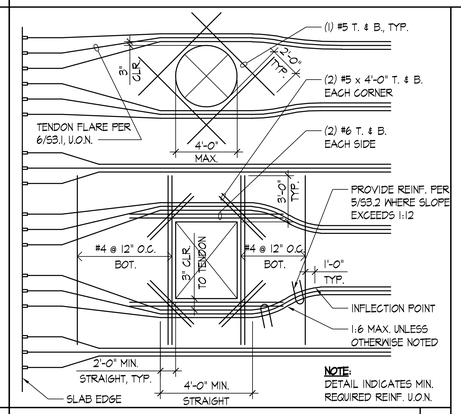
TYPICAL CONCRETE WALL AT P.T. TRANSFER SLAB EDGE — SCALE: 1"=1'-0" — 5



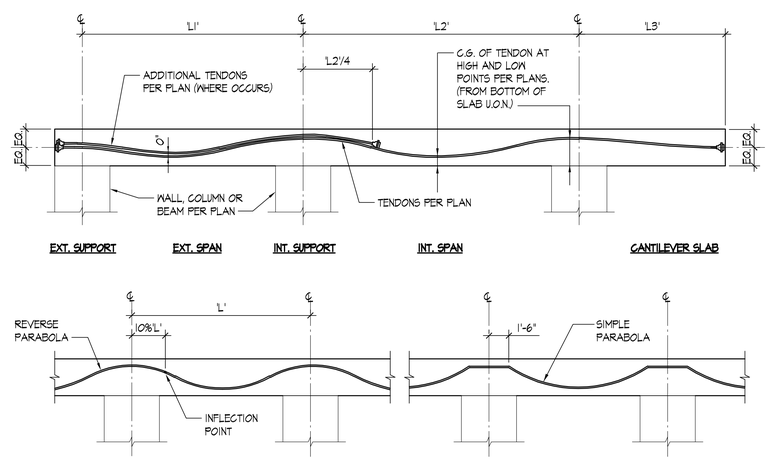
POST-TENSIONING TENDON FLARE AT ANCHORS — SCALE: NONE — 6



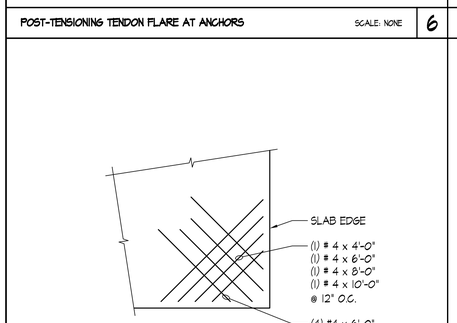
TYPICAL SLAB EDGE REINF. AT POST-TENSIONED SLAB — SCALE: NONE — 7



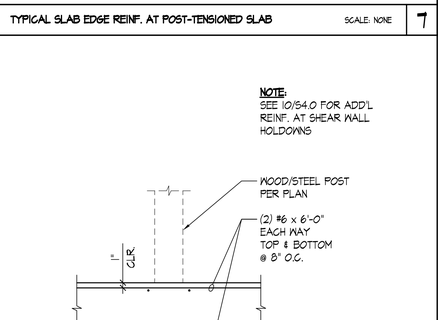
REINF. AT OPENINGS IN POST-TENSIONED SLAB — SCALE: NONE — 8



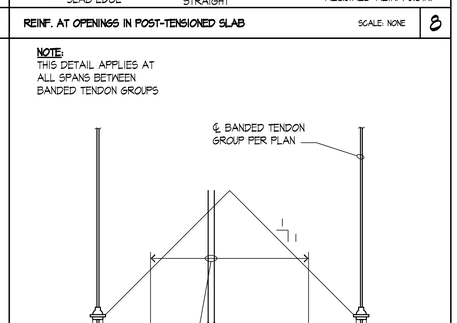
TYPICAL POST-TENSIONED TENDON ELEVATIONS — SCALE: NONE — 15



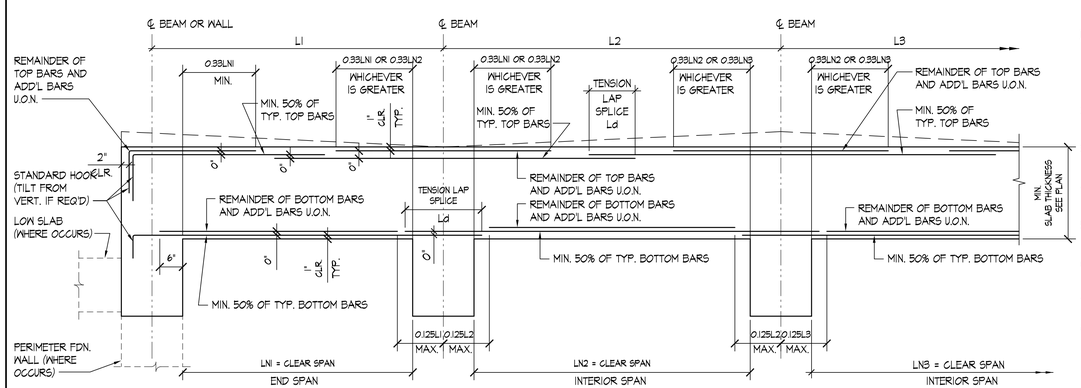
CORNER REINF. AT POST-TENSIONED SLAB EDGE — SCALE: NONE — 11



TYPICAL ADDITIONAL REINFORCING AT POSTS ABOVE — SCALE: 1"=1'-0" — 12



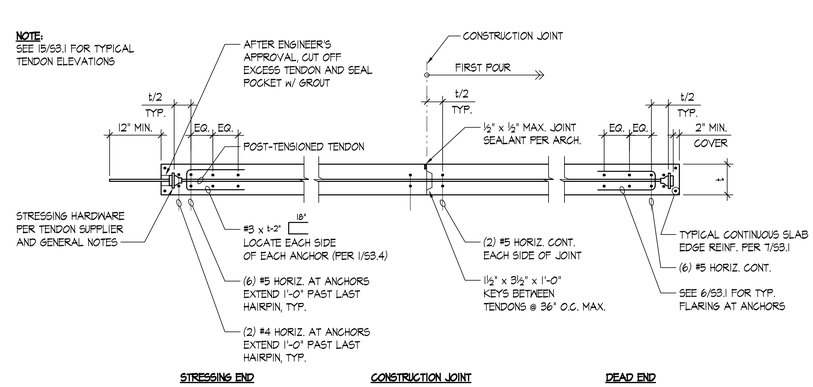
REINF. BETWEEN BANDED TENDONS — SCALE: NONE — 13



NOTES:

1. SEE PLANS FOR REINFORCING SIZE AND SPACING. REBAR LENGTHS PER THIS SECTION EXCEPT AS NOTED ON PLANS.
2. PLACE PRIORITY #2 BARS FIRST (LOWER) AT TOP LAYER.
3. PLACE PRIORITY #1 BARS FIRST (LOWER) AT BOTTOM LAYER.
4. FOR MINIMUM SLAB THICKNESS, SEE PLAN DRAWINGS.
5. FOR LAP SPLICE SCHEDULE, SEE 20/S3.0.
6. BARS IN PERPENDICULAR DIRECTION ARE NOT SHOWN FOR CLARITY.
7. SEE 16/S3.0 FOR HOOKS.
8. TYPICAL REINF. SHOWN ON PLAN. ADDITIONAL REINF. SHOWN AS NUMBER AND SIZE OF BARS i.e. (9) #6 = (9) #6 BARS.

TYPICAL CONCRETE SLAB REINFORCING AT BUILDINGS — SCALE: NONE — 18



TYPICAL POST-TENSIONED SLAB SECTION — SCALE: NONE — 20

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6/10/20

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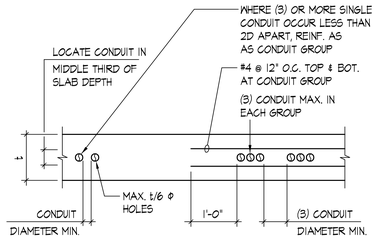
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Drawing No.
S3.1

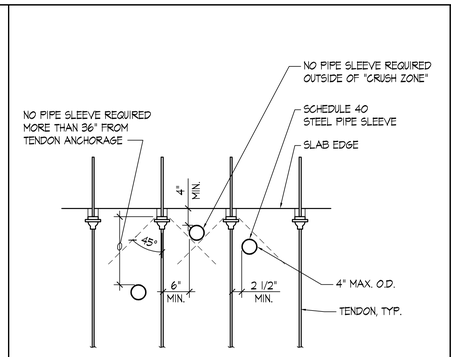
PHOTO REDUCTION SCALE 0" 1 INCH 2 INCHES 3 INCHES 4 INCHES



SINGLE CONDUIT **CONDUIT GROUP**

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS INDICATING PLACEMENT OF CONDUIT IN POST-TENSIONED SLAB (SEE GENERAL STRUCTURAL NOTES).
2. CONDUIT PLACEMENT NOT MEETING CRITERIA SHOWN IN DIAGRAM SHALL BE SUBMITTED TO ENGINEER FOR REINFORCING DESIGN.
3. DO NOT PLACE CONDUIT WITHIN 4'-0" FROM COLUMN FACE OR 3'-0" FROM TENDON ANCHORS.
4. DO NOT TIE CONDUIT TO P.T. TENDONS. MAINTAIN 2" CLR. TO TENDONS.

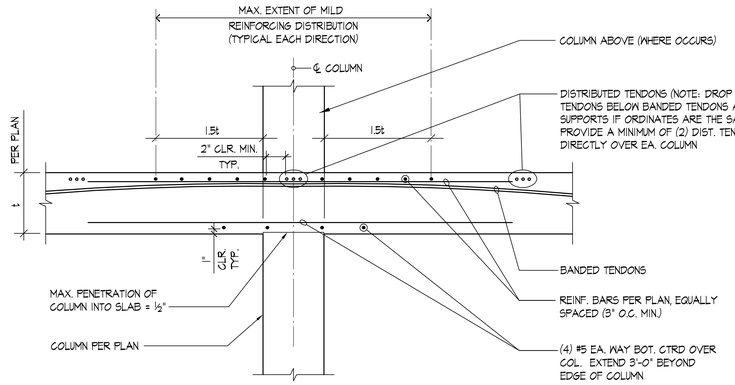
TYPICAL CONDUIT PLACEMENT CRITERIA IN P.T. SLAB SCALE: NONE | 1



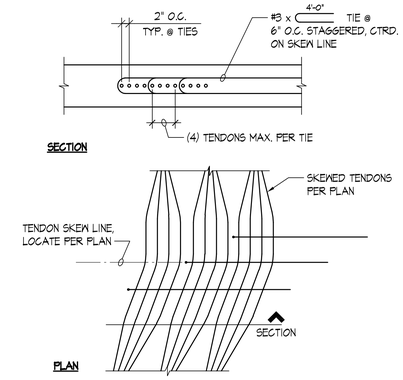
PLAN VIEW

TYPICAL PENETRATION AT TENDON ANCHORAGE SCALE: NONE | 2

NOTE:
SEE 19/S3.0 FOR COLUMN TO SLAB REINFORCING



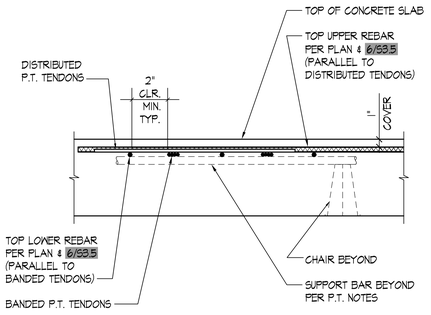
TYPICAL INTERIOR COLUMN AT FLAT PLATE SCALE: NONE | 4



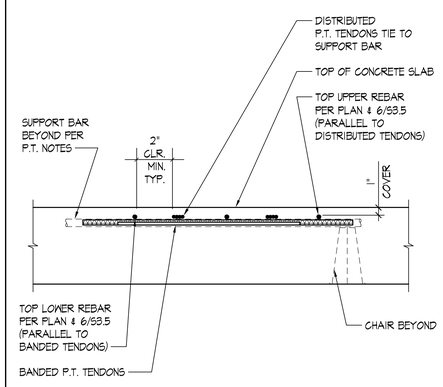
SECTION

PLAN

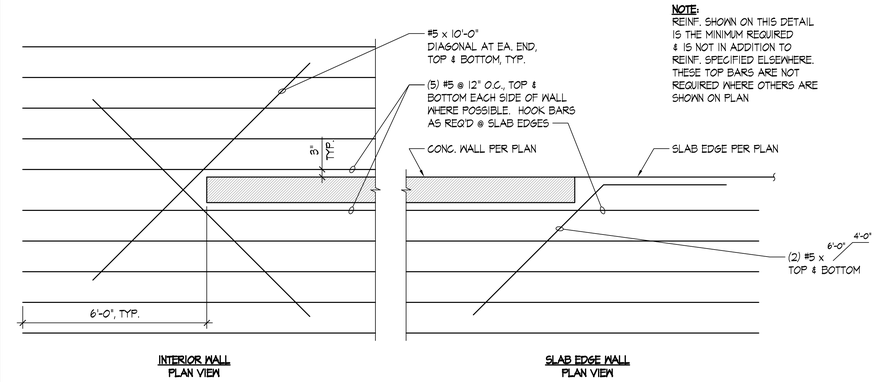
REINF. AT SKEWED TENDONS SCALE: NONE | 5



TYPICAL SECTION THRU BANDED P.T. TENDONS SCALE: 1 1/2"=1'-0" | 6

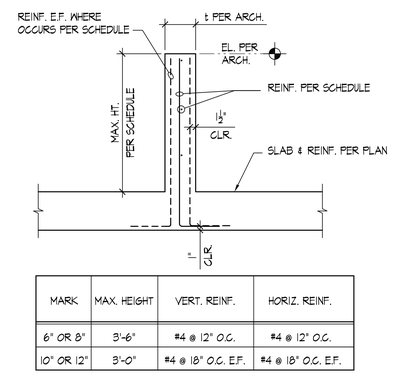


TYPICAL SECTION THRU UNIFORMLY DISTRIBUTED P.T. TENDONS SCALE: 1 1/2"=1'-0" | 7



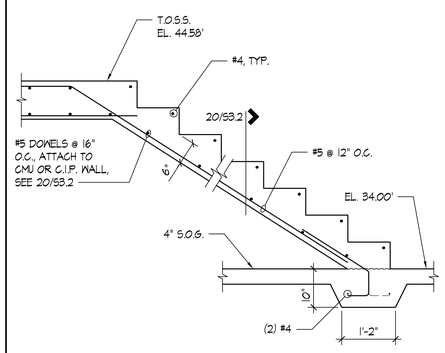
NOTE:
REINF. SHOWN ON THIS DETAIL IS THE MINIMUM REQUIRED & IS NOT IN ADDITION TO REINF. SPECIFIED ELSEWHERE. THESE TOP BARS ARE NOT REQUIRED WHERE OTHERS ARE SHOWN ON PLAN

TYPICAL P.T. SLAB CRACK CONTROL REINFORCING AT CONCRETE WALLS SCALE: NONE | 9

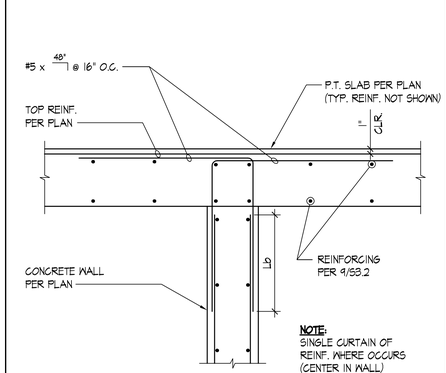


MARK	MAX. HEIGHT	VERT. REINF.	HORIZ. REINF.
6" OR 8"	3'-6"	#4 @ 12" O.C.	#4 @ 12" O.C.
10" OR 12"	3'-0"	#4 @ 18" O.C. E.F.	#4 @ 18" O.C. E.F.

CONCRETE CURB SCHEDULE SCALE: NONE | 10

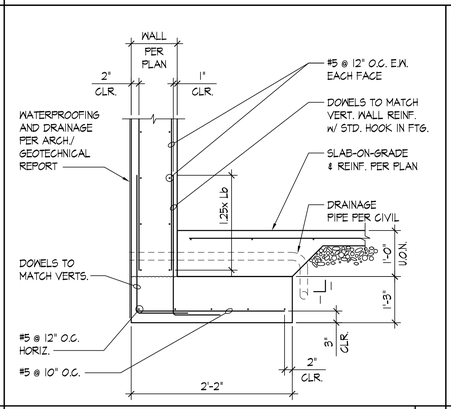


CONCRETE STAIRS SCALE: 3/4"=1'-0" | 11



NOTE:
SINGLE CURTAIN OF REINF. WHERE OCCURS (CENTER IN WALL)

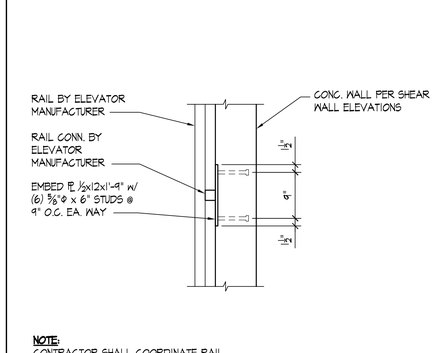
TYPICAL INTERIOR CONCRETE WALL BELOW P.T. SLAB SCALE: NONE | 12



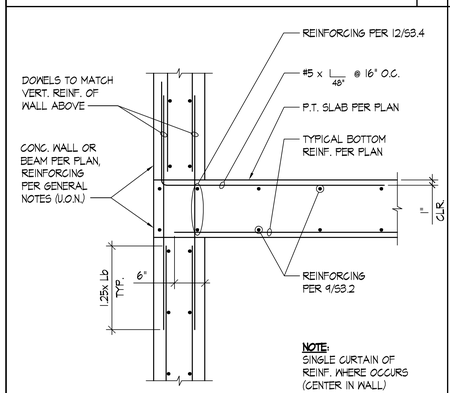
TYPICAL PROPERTY LINE WALL FOOTING SCALE: NONE | 13

DETAIL SCALE: NONE | 14

ELEVATOR RAIL SUPPORT SCALE: NONE | 15

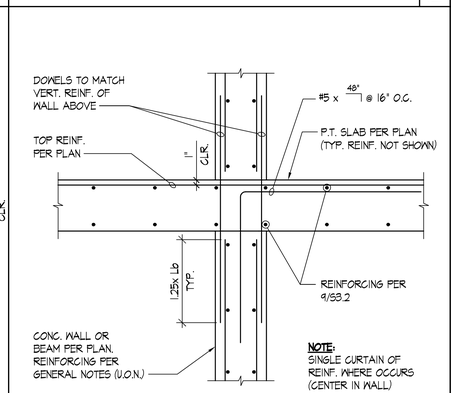


NOTE:
CONTRACTOR SHALL COORDINATE RAIL SUPPORT LOCATIONS W/ ELEV. MFR



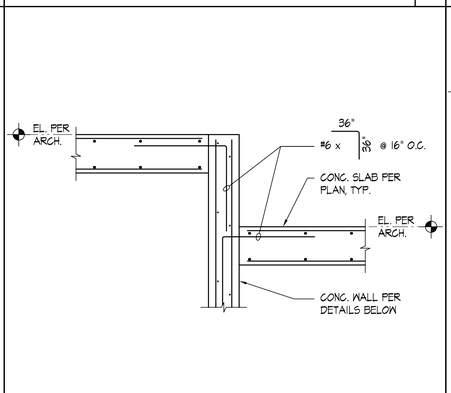
NOTE:
SINGLE CURTAIN OF REINF. WHERE OCCURS (CENTER IN WALL)

TYPICAL CONCRETE WALL AT P.T. SLAB EDGE SCALE: NONE | 16

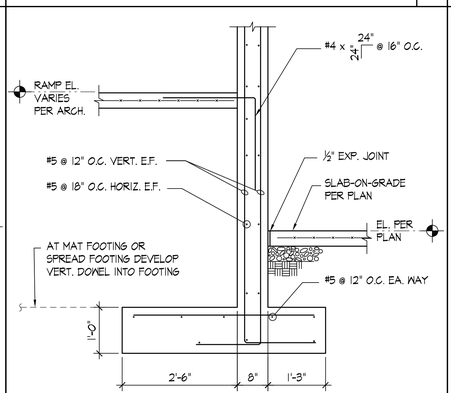


NOTE:
SINGLE CURTAIN OF REINF. WHERE OCCURS (CENTER IN WALL)

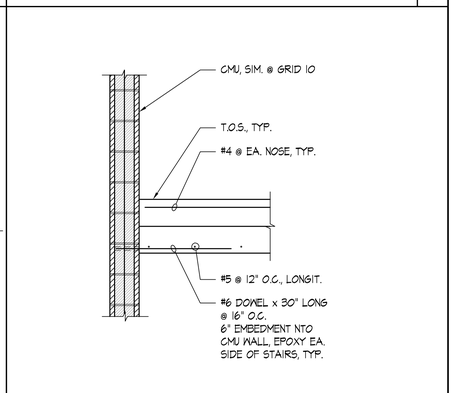
TYPICAL INTERIOR CONC. WALL AT P.T. SLAB SCALE: NONE | 17



STEP IN SLAB SCALE: NONE | 18



SECTION AT RAMP SCALE: NONE | 19



SECTION AT STAIRS SCALE: 3/4"=1'-0" | 20

ENGINEER'S SEAL
6/10/20

No.	REVISION	DATE

ISSUE DATE:

HARBORSIDE APARTMENTS

1310 "G" STREET
Bellingham, WA
For:
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

MJH ENGINEERING P.S.
consulting structural associates
Bellingham, WA 98228
Phone: (360)715-3059
email: mjhpe@comcast.net

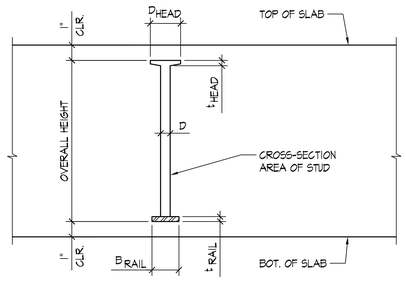
Drawing Title:
DETAILS

PROJECT NO. :
DRAWN BY: TA
DATE:

Drawing No.
S3.2

PHOTO REDUCTION SCALE 0" 1 INCH 2 INCHES 3 INCHES 4 INCHES

D (in)	X-SECT AREA (in²)	D_{HEAD} (in)	t_{HEAD} (in)	B_{RAIL} (in)	t_{RAIL} (in)
¾	.442	2.37	.42	2.0	⅜

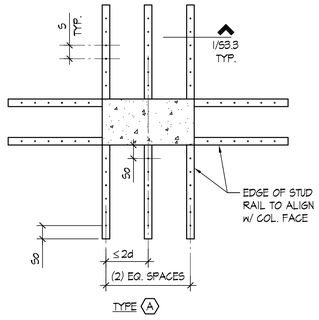


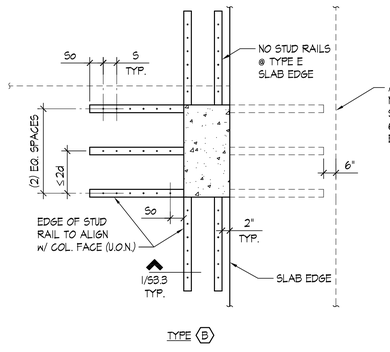
STUDRAIL DETAIL — SCALE: NONE — 1

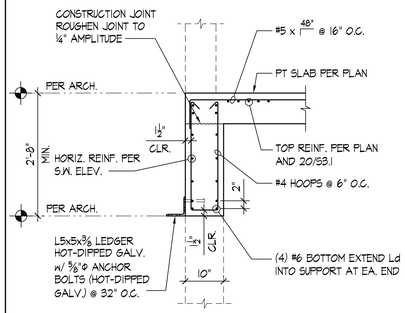
STUDRAIL SCHEDULE		
TYPE	(A)	(B)
NUMBER OF RAILS/COLUMN	10	7
NUMBER OF STUDS/RAIL	14	22
STUD DIAMETER (in)	¾	¾
DISTANCE TO FIRST STUD, So (in)	5.125	5.125
STUD SPACING, S (in)	4.125	5.5
OVERALL HEIGHT OF RAIL	10	10
EFFECTIVE DEPTH, d (in)	10.375	10.375

NOTE:
* INDICATES COLUMNS WHERE (1) 4"ϕ MAX. PENETRATION IS ALLOWED. PENETRATION SHALL NOT CONFLICT WITH STUDRAILS.
OPENINGS NEAR COLUMNS ONLY ALLOWED WHERE APPROVED BY ENGINEER.

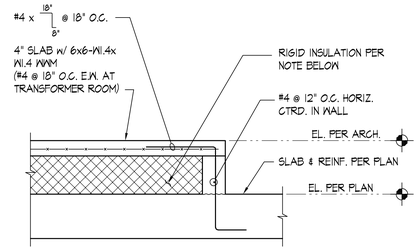
STUDRAIL SCHEDULE — SCALE: NONE — 4







"HEAVY" CONCRETE BEAM @ PERIMETER DETAIL — SCALE: NONE — 5



NOTE:
RIGID INSULATION BELOW TOPPING SLABS SHALL BE CLOSED-CELL, LIGHTWEIGHT FOAM WITH A COMPRESSIVE STRENGTH 3 PSI AT 1% DEFORMATION WITH A MAXIMUM DENSITY SHALL BE 2.5 POUNDS PER CUBIC FOOT.

TYPICAL RIGID INSULATION OVERFRAMING — SCALE: NONE — 10

DETAIL — SCALE: 1"=1'-0" — 6

DETAIL — SCALE: 1"=1'-0" — 7

DETAIL — SCALE: 1"=1'-0" — 8

DETAIL — SCALE: 1"=1'-0" — 9

DETAIL — SCALE: 1"=1'-0" — 11

DETAIL — SCALE: 1"=1'-0" — 12

DETAIL — SCALE: 1"=1'-0" — 13

DETAIL — SCALE: 1"=1'-0" — 14

DETAIL — SCALE: 1"=1'-0" — 15

DETAIL — SCALE: 1"=1'-0" — 16

DETAIL — SCALE: 1"=1'-0" — 17

DETAIL — SCALE: 1"=1'-0" — 18

DETAIL — SCALE: 1"=1'-0" — 19

DETAIL — SCALE: 1"=1'-0" — 20

ENGINEER'S SEAL
6/10/20

No.	REVISION	DATE

ISSUE DATE

HARBORSIDE APARTMENTS
1310 "G" STREET
Bellingham, WA
For:
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

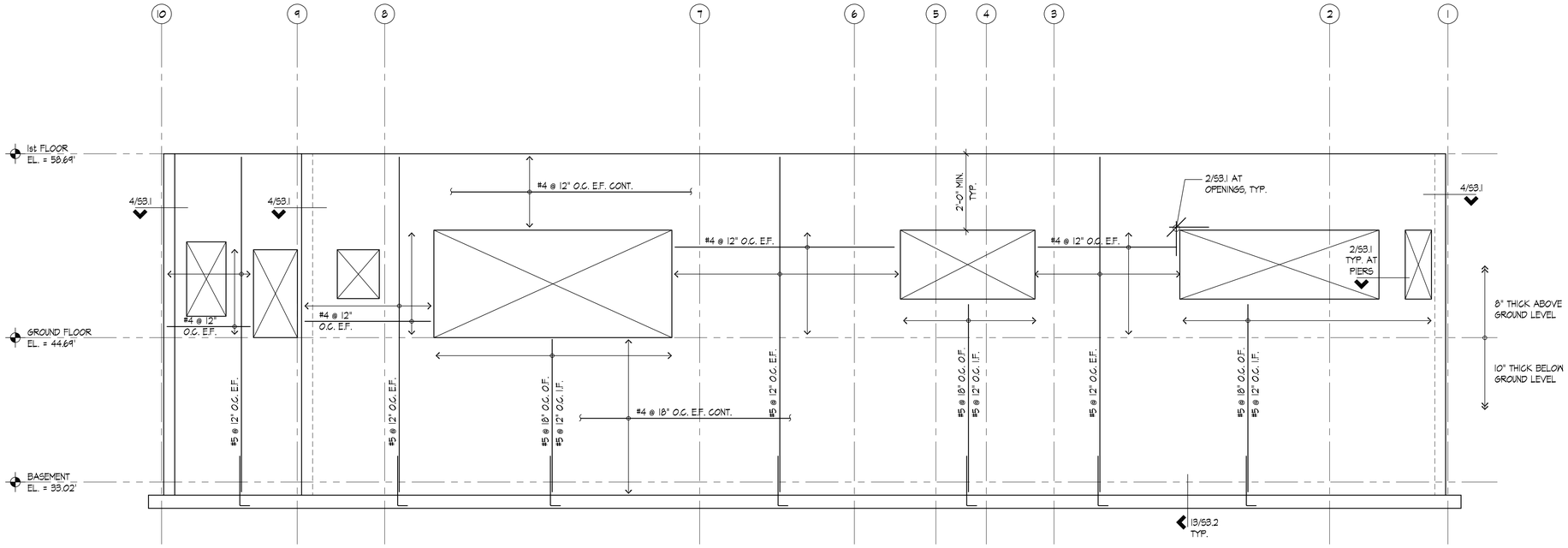
MJH ENGINEERING P.S.
consulting structural associates
Bellingham, WA 98228
Phone: (360)715-3058
email: mjhpe@comcast.net

Drawing Title:
DETAILS

PROJECT NO. :
DRAWN BY: TA
DATE:

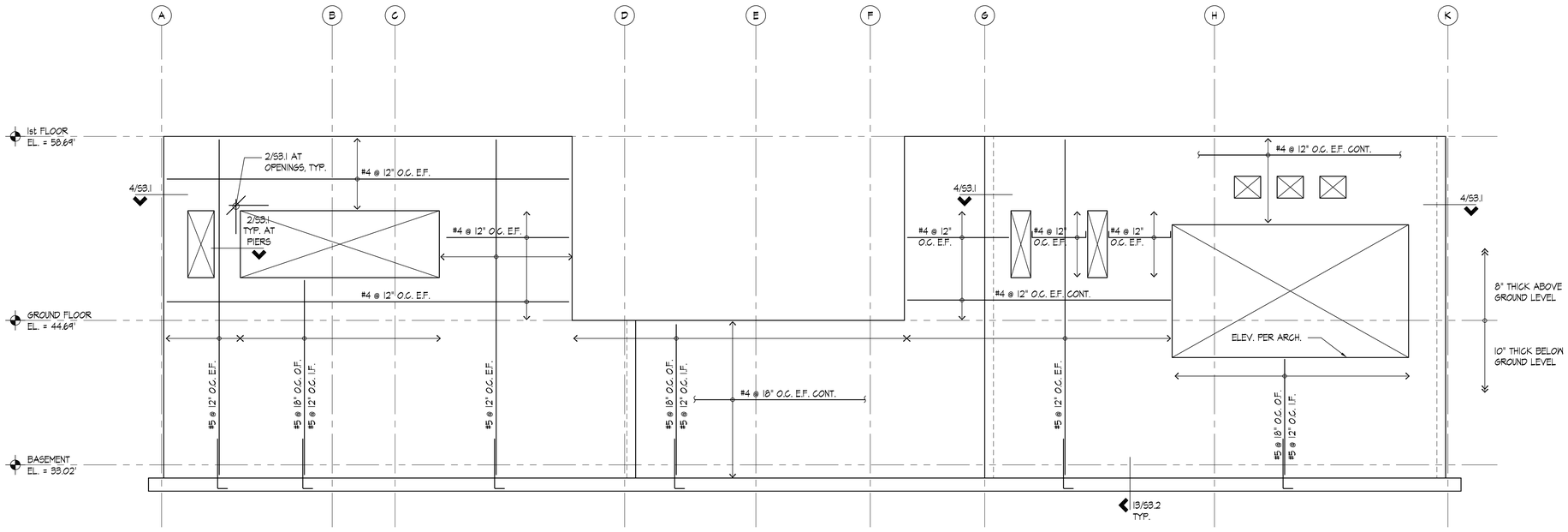
Drawing No.
S3.3

PHOTO REDUCTION SCALE 0" 1 INCH 2 INCHES 3 INCHES 4 INCHES



SW-1 ELEVATION

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



SW-2 ELEVATION

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

LEGEND:

I.F. INSIDE FACE
O.F. OUTSIDE FACE
E.F. EACH FACE

NOTES:

1. SHEAR WALL THICKNESS & REINFORCEMENT SHALL BE 8" WITH #5 @ 12" O.C. FOR VERT. AND #4 @ 12" O.C. FOR HORIZ. EACH FACE, UNLESS OTHERWISE NOTED ON THE ELEVATIONS. PROVIDE MATCHING DOWELS TO FOOTINGS, U.O.N.
2. REBAR DETAILING: ALL SHEAR WALL HORIZONTAL REINFORCEMENT SHALL BE DEVELOPED AND SPLICED FOR FULL TENSION CAPACITY PER SCHEDULE ON 20/S3.0. EMBED FOOTING DOWELS 125% OF TABLE 1 OF 20/S3.0 WHERE DEPTH AVAILABLE. VERTICAL SHEAR WALL REINFORCEMENT SHALL BE DEVELOPED & SPLICED PER 20/S3.0.
3. PROVIDE HOOKS AT ENDS OF ALL HORIZONTAL BARS AT WALL ENDS, WALL INTERSECTIONS AND AT FACES OF OPENINGS PER 4/S3.1.
4. REFER TO DETAILS FOR DOWELS REQUIRED AT INTERSECTIONS OF SLABS AND WALLS. SEE DETAILS 12,16,17/S3.2.
5. SEE GENERAL STRUCTURAL NOTES FOR SPECIAL MATERIAL REQUIREMENTS OF ALL VERTICAL BARS.
6. PROVIDE A MINIMUM OF 1" CLEAR COVER TO ALL VERTICAL SHEAR WALL REINFORCEMENT.

ENGINEER'S SEAL
6/10/20

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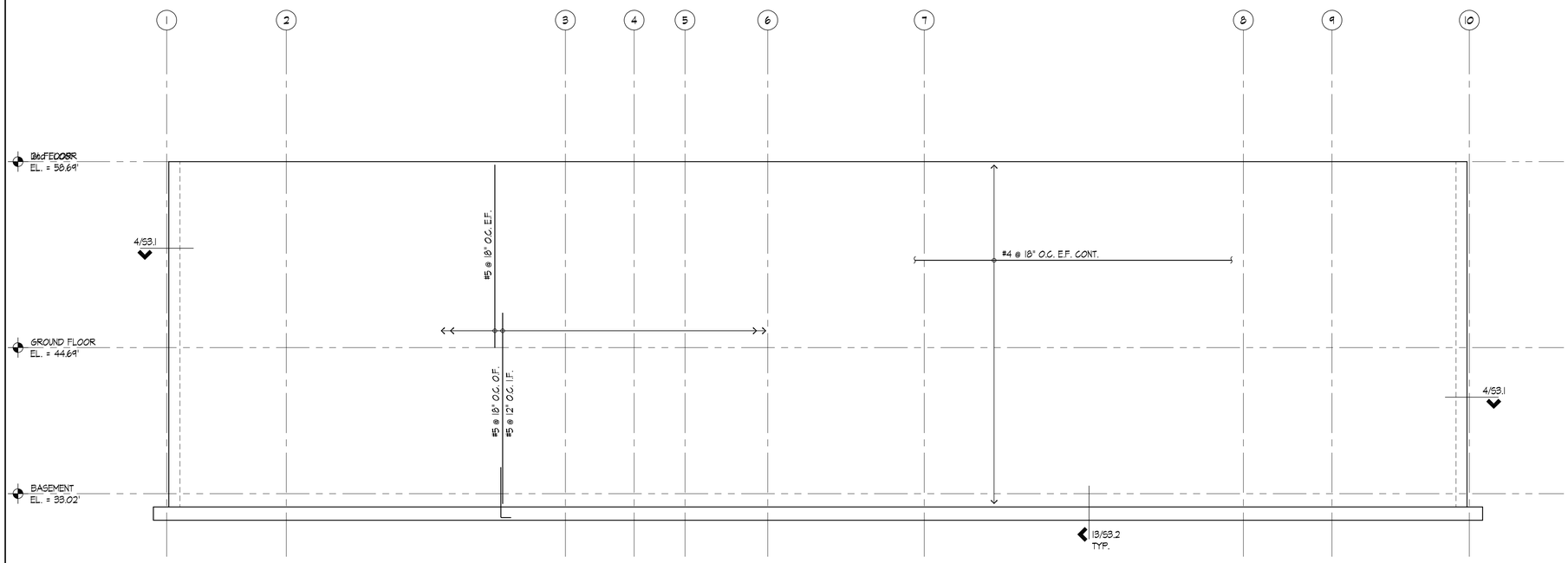
MJH ENGINEERING P.S.
consulting structural associates
Bellingham, WA 98228
Phone: (360)715-3058
email: mjhpe@comcast.net

Drawing Title:
ELEVATIONS

PROJECT NO. : ____
DRAWN BY: TA
DATE: ____

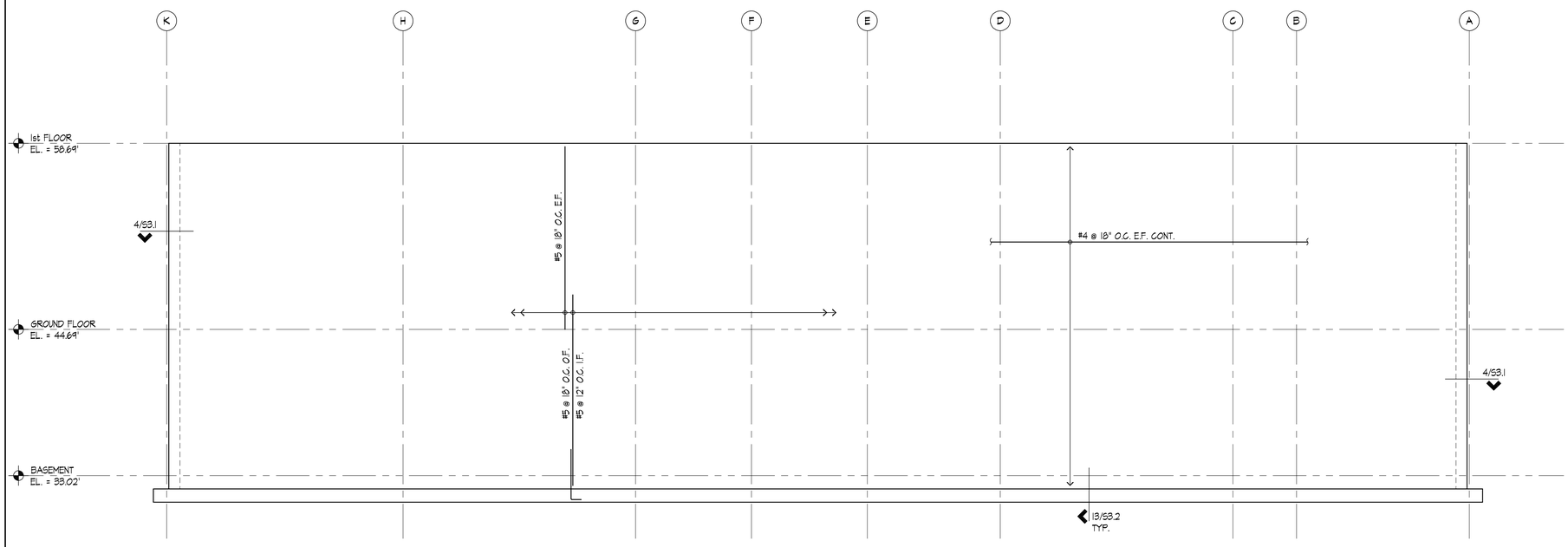
Drawing No.
S3.4

PHOTO REDUCTION SCALE 0 1 INCH 2 INCHES 3 INCHES 4 INCHES



SW-3 ELEVATION

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



SW-4 ELEVATION

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

FOR NOTES AND LEGEND SEE S3.4

ENGINEER'S SEAL

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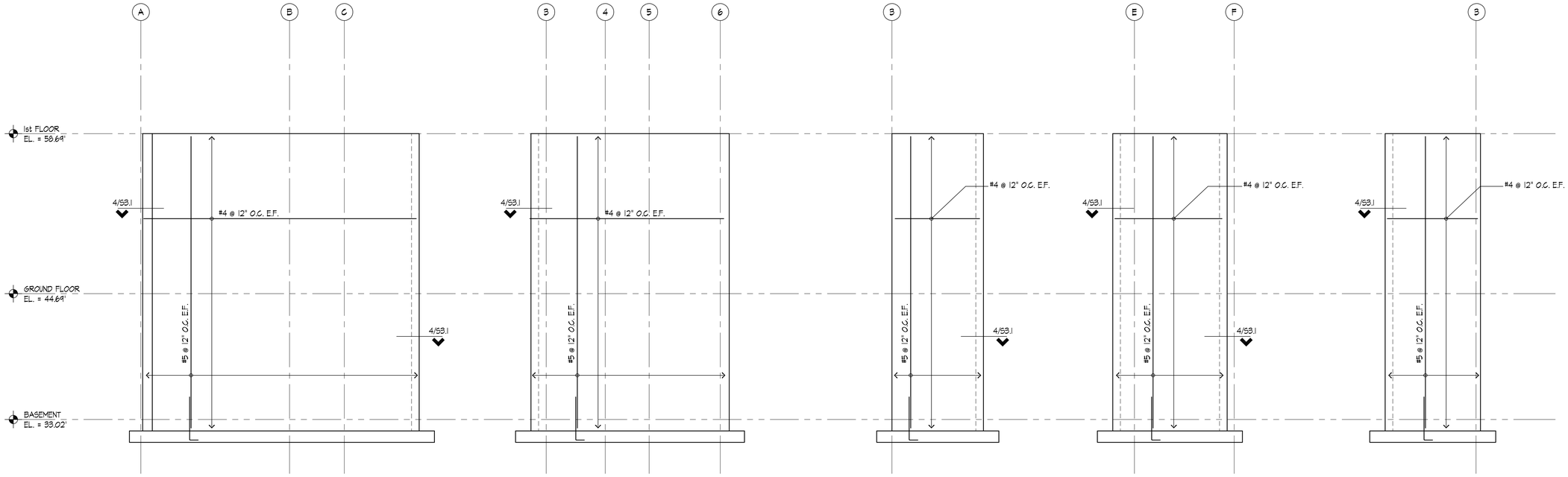
MJH ENGINEERING P.S.
consulting structural associates
Bellingham, WA 98229
Phone: (360)715-3058
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Drawing Title:
ELEVATIONS

PROJECT NO. :
DRAWN BY: TA
DATE:

Drawing No.
S3.5

PHOTO REDUCTION SCALE 0 1 INCH 2 INCHES 3 INCHES 4 INCHES



SW-5 ELEVATION

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

SW-6 ELEVATION

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

SW-7 ELEVATION

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

SW-8 ELEVATION

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

SW-9 ELEVATION

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

FOR NOTES AND LEGEND SEE S3.4

ENGINEER'S SEAL

6/10/20

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Drawing Title:
ELEVATIONS

PROJECT NO. : ____
DRAWN BY: TA
DATE: ____

Drawing No.

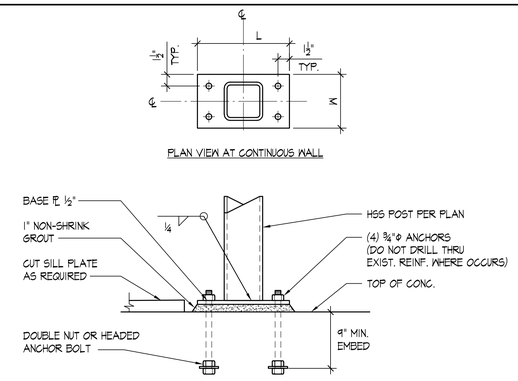
S3.6

PHOTO REDUCTION SCALE 0" 1 INCH 2 INCHES 3 INCHES 4 INCHES

DETAIL SCALE: 1"=1'-0" | 1

DETAIL SCALE: 1"=1'-0" | 2

DETAIL SCALE: 1"=1'-0" | 3

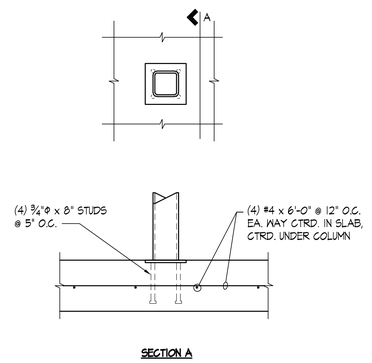


PLAN VIEW AT CONTINUOUS WALL

COLUMN SIZE	TYPE I		THICKNESS
	L	W	
HSS 5x5	12"	7"	½"
HSS 5½x5½	12"	7"	½"

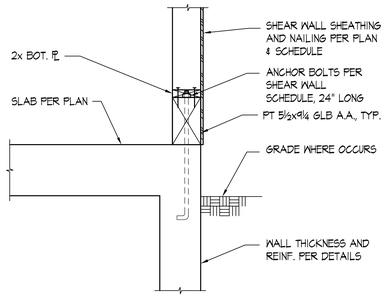
NOTES:
1. AT CONTRACTOR'S OPTION, AN EMBED PER 10/S4.0 IS STRUCTURALLY ACCEPTABLE AS AN EQUIVALENT SUBSTITUTE.

TYPICAL HSS POST BASE AT SLAB CONNECTION SCALE: NONE | 5



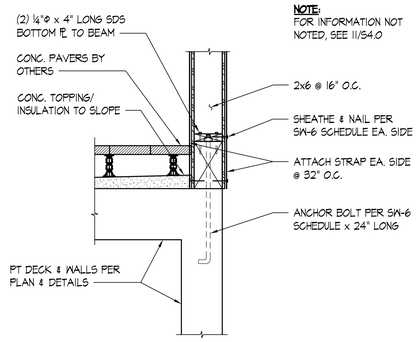
SECTION A

DETAIL SCALE: NONE | 6



EXTERIOR WALL CONNECTION TO SLAB SCALE: NONE | 11

DETAIL SCALE: NONE | 7

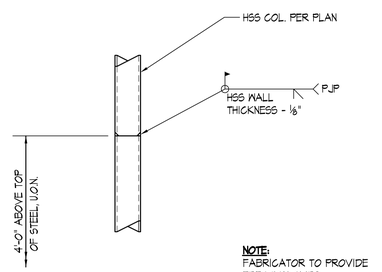


NOTE:
FOR INFORMATION NOT NOTED, SEE 11/S4.0

PARAPET GUARD WALL AT CONC. DECK SCALE: NONE | 12

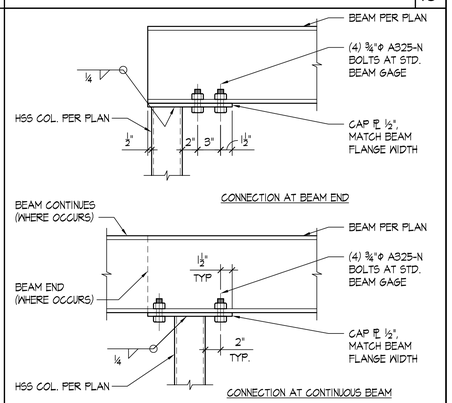
DETAIL SCALE: 1"=1'-0" | 8

DETAIL SCALE: 1"=1'-0" | 9



NOTE:
FABRICATOR TO PROVIDE ERECTION CLIPS.

ADDITIONAL BARS AT POST/HOLDOWN SCALE: NONE | 10



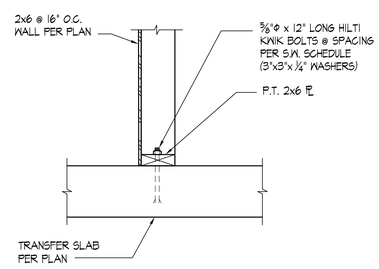
EXTERIOR WALL CONNECTION TO SLAB SCALE: NONE | 11

PARAPET GUARD WALL AT CONC. DECK SCALE: NONE | 12

DETAIL SCALE: 1"=1'-0" | 13

TYPICAL EQUAL SIZE HSS GRAVITY COLUMN SPLICE SCALE: NONE | 14

TYPICAL BEAM BEARING ON HSS COLUMN SCALE: NONE | 15



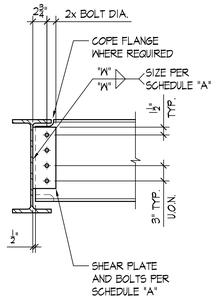
INTERIOR WALL CONNECTION TO SLAB SCALE: NONE | 16

SCHEDULE "A"

BEAM SIZE	BOLTS ①	PLATE THICKNESS ①	WELD SIZE "W"
W12	(3) ⅞"Φ	¼"	5/16"
W16, W18	(4) ⅞"Φ	⅜"	¼"

NOTES:
① BOLT TYPE = A325N, U.O.N. PL MATERIAL = A36, U.O.N.
② USE HORIZONTAL SHORT SLOTTED HOLES IN THE PLATE AT COLUMN CONNECTIONS ONLY
③ BOLTS SHALL BE AT 4" O.C. SPACING FOR W10 BEAMS/C10 CHANNELS

TYPICAL BOLTED BEAM CONNECTION SCALE: NONE | 18



BEAM TO BEAM

DETAIL SCALE: NONE | 19

DETAIL SCALE: NONE | 20

ENGINEER'S SEAL
6/10/20

No.	REVISION	DATE

ISSUE DATE

HARBORSIDE APARTMENTS

1310 "G" STREET
Bellingham, WA
For
Bad Reinartz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

MJH ENGINEERING P.S.
consulting structural associates
Bellingham, WA 98228
Phone: (360)715-3058
email: mjhpe@comcast.net

Drawing Title:
STEEL FRAMING DETAILS
PROJECT NO. :
DRAWN BY: TA
DATE:

Drawing No.
S4.0

PHOTO REDUCTION SCALE 0 1 INCH 2 INCHES 3 INCHES 4 INCHES

HARBORSIDE APARTMENTS

1310 "G" STREET
Bellingham, WA

For:
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

MJH ENGINEERING P.S.

consulting structural associates

Bellingham, WA 98228
Phone: (360)715-3058
email: mjhpe@comcast.net

Drawing Title:
TYPICAL WOOD FRAMING DETAILS & SCHEDULES

DRAWN BY: TA
PROJECT NO.:
DATE

Drawing No.
S5.0

No.	REVISION	DATE

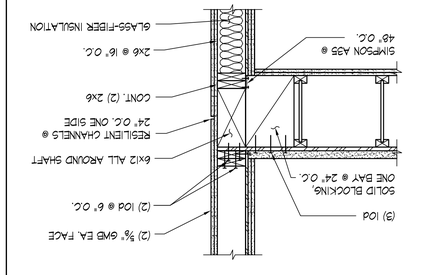
ISSUE DATE

ENGINEER'S SEAL
8/10/20

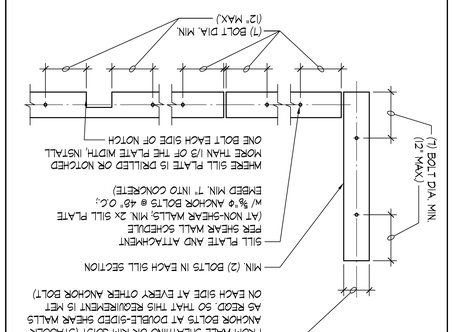
PHOTO REDUCTION SCALE
0" 1" 2" 3" 4" INCHES
1 INCH
0 1 2 3 4 5 6 INCHES

---

1 2-HOUR SHAFT FRAMING - JOIST PARALLEL
SCALE: 1"=1'-0"



2 TYPICAL SILL PLATE BOLTING - PLAN VIEW
SCALE: NONE

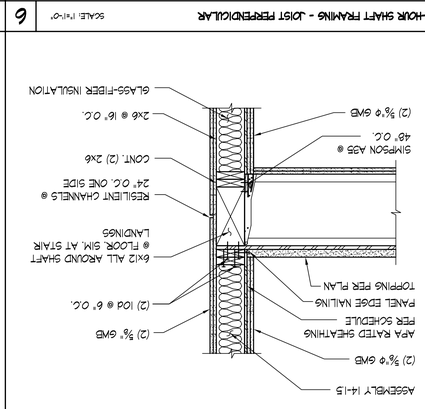


3 TYPICAL STAGGERED NAILING
SCALE: NONE

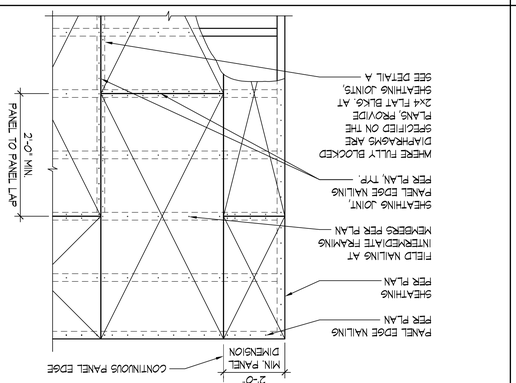
NOTE:
STAGGER EA. LINE OF NAILING (AT ALL PANEL EDGES) AS INDICATED

---

4 2-HOUR SHAFT FRAMING - JOIST PERPENDICULAR
SCALE: 1"=1'-0"

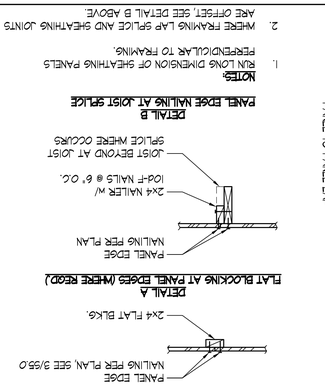


5 TYPICAL ROOF AND FLOOR DIAPHRAGM SHEATHING
SCALE: NONE



NOTES:
1. RUN LONG DIMENSION OF SHEATHING PANELS PERPENDICULAR TO FRAMING.
2. WHERE FRAMING LAP SPLICE AND SHEATHING JOINTS ARE OFFSET, SEE DETAIL B ABOVE.

DETAIL B
PANEL EDGE NAILING AT JOIST SPLICE



DETAIL A
FLAT BLOCKING AT PANEL EDGES (WHERE REQD.)

---

6 2-HOUR SHAFT FRAMING - JOIST PERPENDICULAR
SCALE: 1"=1'-0"

7 TYPICAL NON-STRUCTURAL WALL SUPPORT (BOTTOM) - I-JOIST
SCALE: NONE

8 TYPICAL HEADER DETAIL
SCALE: NONE

9 TYPICAL ALLOWABLE HOLES AND NOTCHES IN STUDS
SCALE: NONE

BEARING WALL:

STUD SIZE	MAX. DIAMETER OF HOLE
2x4	1-1/2"
2x6	2-3/8"
2x8	3"

NON-BEARING WALL:

STUD SIZE	MAX. DIAMETER OF HOLE
2x4	2-1/4"
2x6	3-5/8"
2x8	4-1/2"

B. HOLES IN WOOD STUDS

BEARING WALL:

STUD SIZE	MAX. DEPTH OF 9AW CUT OR NOTCH	MIN. DEPTH REMAINING AFTER CUT OR NOTCH
2x4	1-1/2"	2"
2x6	2-3/8"	3-1/8"
2x8	3"	4-1/4"

NON-BEARING WALL STUDS:

STUD SIZE	MAX. DEPTH OF 9AW CUT OR NOTCH	MIN. DEPTH REMAINING AFTER CUT OR NOTCH
2x4	7/8"	2-⅜"
2x6	1-⅜"	4-⅛"
2x8	1-7/8"	5-⅜"

A. CUTTING AND NOTCHING WOOD STUDS
(DO NOT NOTCH MORE THAN 3 ADJACENT STUDS W/o REVIEW BY ENGINEER)

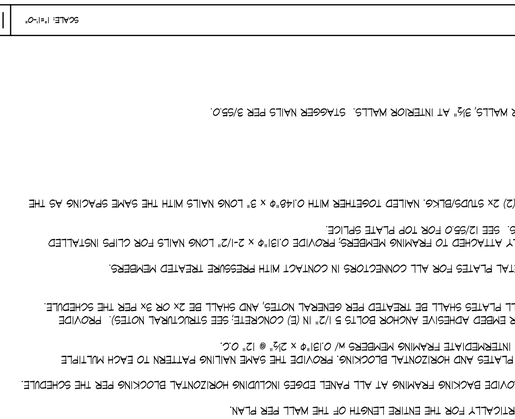
BEARING WALL STUDS:

STUD SIZE	MAX. DEPTH OF 9AW CUT OR NOTCH	MIN. DEPTH REMAINING AFTER CUT OR NOTCH
2x4	7/8"	2-⅜"
2x6	1-⅜"	4-⅛"
2x8	1-7/8"	5-⅜"

NON-BEARING WALL STUDS:

STUD SIZE	MAX. DEPTH OF 9AW CUT OR NOTCH	MIN. DEPTH REMAINING AFTER CUT OR NOTCH
2x4	1-1/2"	2"
2x6	2-3/8"	3-1/8"
2x8	3"	4-1/4"

10 TYPICAL FLOOR TO FLOOR HOLDOWN STRAP & FLOOR TO HEADER HOLDOWN STRAP
SCALE: NONE



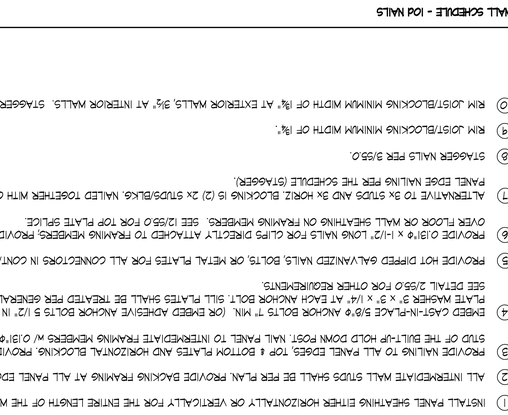
HOLDOWN STRAP	MIN. NUMBER OF NAILS EACH END	MIN. STRAP END LENGTH "A"
CS16	(15) 8d	1'-4"
MST40	(36) 16d SINKERS	2'-6"

11 TYPICAL POST AT FLOOR
SCALE: NONE

NOTE:
FRAMING CONDITIONS VARY, FOR INFORMATION NOT NOTED SEE PLAN & APPROPRIATE DETAILS

12 TYPICAL TOP PLATE SPLICE
SCALE: NONE

13 TYPICAL HOLDOWN TO CONCRETE
SCALE: NONE



NOTE:
PROVIDE HOT DIPPED GALVANIZED NAILS, BOLTS, OR METAL PLATES FOR ALL CONNECTORS IN CONTACT WITH PRESSURE TREATED MEMBERS.

HOLDOWN	ANCHOR BOLT Ø	ANCHOR BOLT IN CONCRETE EMBED LENGTH	CONNECTORS TO HOLDOWN STUDS
HDU8	⅝"ø	10"	(20) SDS ¼"x2½" SCREWS

14 TYPICAL NON-STRUCTURAL WALL SUPPORT (TOP) - I-JOIST
SCALE: NONE

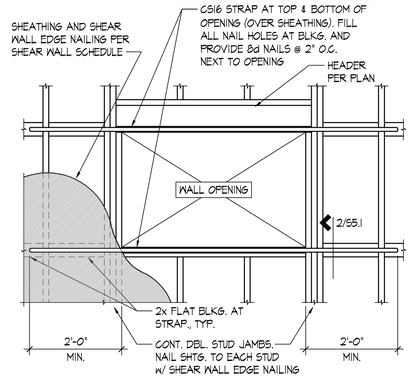
15 SHEAR WALL SCHEDULE - I0d NAILS
SCALE: 1"=1'-0"

SHEAR WALL TYPE	SHEATHING	PANEL EDGE FRAMING	PANEL EDGE NAILING	BOTTOM PLATE ATTACHMENT: 2x BOTTOM PLATE CONNECTION TO RIM JOIST OR BLOCKING BELOW	BOTTOM PLATE ATTACHMENT: ANCHOR BOLTING OF SILL PLATE TO CONCRETE BELOW	TOP PLATE ATTACHMENT: RIM JOIST OR BLOCKING CONNECTION TO TOP PLATE
	①	(2)Ⓣ	③	3x PLATE	2x PLATE	INTERIOR WALL
SW-6	15/32" APA ONE-SIDE SHTG.	2x	@ 6" O.C.	⅝"ø @ 48" O.C.	⅝"ø @ 48" O.C.	⅝"ø @ 16" O.C.
SW-4	15/32" APA ONE-SIDE SHTG.	(2) 2x	@ 4" O.C.	⅝"ø @ 48" O.C.	⅝"ø @ 32" O.C.	⅝"ø @ 16" O.C.
SW-3	15/32" APA ONE-SIDE SHTG.	(2) 2x	@ 3" O.C.	⅝"ø @ 32" O.C.	⅝"ø @ 24" O.C.	⅝"ø @ 12" O.C.
SW-2	15/32" APA ONE-SIDE SHTG.	(2) 2x	@ 2" O.C.	⅝"ø @ 24" O.C.	⅝"ø @ 16" O.C.	⅝"ø @ 8" O.C.

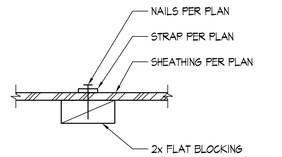
	0.148"ø x 3¼"	3x OR		(2) ROWS			
	0.148"ø x 3¼"	3x OR		(2) ROWS			
	0.148"ø x 3¼"	3x OR		(2) ROWS			
	0.148"ø x 3¼"	3x OR		0.148"ø x 3¼" @ 4" O.C.			

NOTES:
1. INSTALL PANEL SHEATHING EITHER HORIZONTALLY OR VERTICALLY FOR THE ENTIRE LENGTH OF THE WALL PER PLAN.
2. ALL INTERMEDIATE WALL STUDS SHALL BE PER PLAN. PROVIDE BACKING FRAMING AT ALL PANEL EDGES INCLUDING HORIZONTAL BLOCKING PER THE SCHEDULE.
3. PROVIDE NAILING TO ALL PANEL EDGES, TOP & BOTTOM PLATES AND HORIZONTAL BLOCKING. PROVIDE THE SAME NAILING PATTERN TO EACH MULTIPLE STUD OF THE BUILT-UP HOLD DOWN POST. NAIL PANEL TO INTERMEDIATE FRAMING MEMBERS W/ 0.131"ø x 2½" @ 12" O.C.
4. EMBED CAST-IN-PLACE 5/8"ø ANCHOR BOLTS 7" MIN. (OR EMBED ADHESIVE ANCHOR BOLTS 5 1/2" IN (E) CONCRETE, SEE STRUCTURAL NOTES). PROVIDE PLATE WASHER 3" x 3" x 1/4" AT EACH ANCHOR BOLT. SILL PLATES SHALL BE TREATED PER GENERAL NOTES, AND SHALL BE 2x OR 3x PER THE SCHEDULE.
5. PROVIDE HOT DIPPED GALVANIZED NAILS, BOLTS, OR METAL PLATES FOR ALL CONNECTORS IN CONTACT WITH PRESSURE TREATED MEMBERS.
6. PROVIDE 0.131"ø x 1-1/2" LONG NAILS FOR CLIPS DIRECTLY ATTACHED TO FRAMING MEMBERS. PROVIDE 0.131"ø x 2-1/2" LONG NAILS FOR CLIPS INSTALLED OVER FLOOR OR WALL SHEATHING ON FRAMING MEMBERS. SEE 12/S5.0 FOR TOP PLATE SPLICE.
7. ALTERNATIVE TO 3x STUDS AND 3x HORIZ. BLOCKING IS (2) 2x STUDS/BLKG. NAILED TOGETHER WITH 0.148"ø x 3" LONG NAILS WITH THE SAME SPACING AS THE PANEL EDGE NAILING PER THE SCHEDULE (STAGGER).
8. STAGGER NAILS PER 3/S5.0.
9. RIM JOIST/BLOCKING MINIMUM WIDTH OF 1½".
10. RIM JOIST/BLOCKING MINIMUM WIDTH OF 1¾". AT EXTERIOR WALLS, 3½" AT INTERIOR WALLS. STAGGER NAILS PER 3/S5.0.

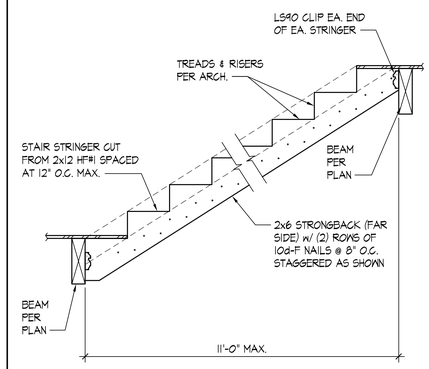
16 SHEAR WALL SCHEDULE - I0d NAILS
SCALE: 1"=1'-0"



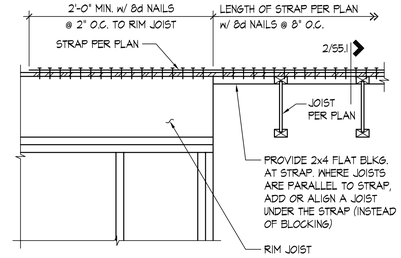
STRAPPING AROUND SHEAR WALL OPENING SCALE: NONE | 1



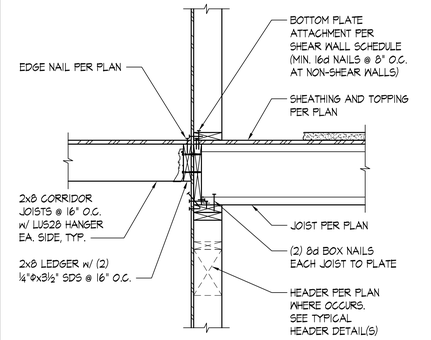
STRAP TO BLOCKING DETAIL SCALE: NONE | 2



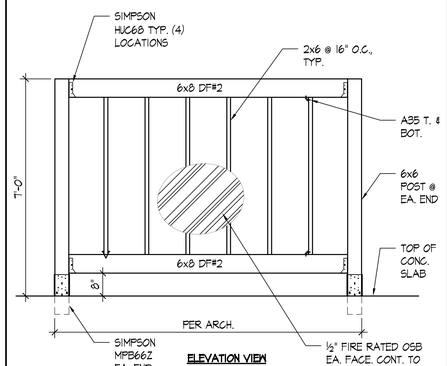
TYPICAL STAIR STRINGER SCALE: NONE | 3



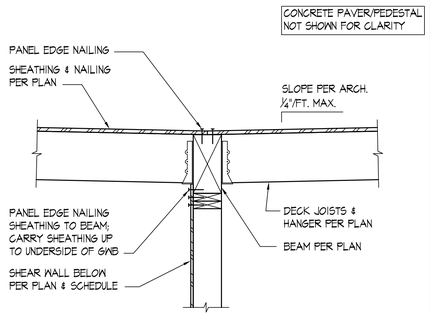
TYPICAL DRAG STRUT DETAIL SCALE: NONE | 4



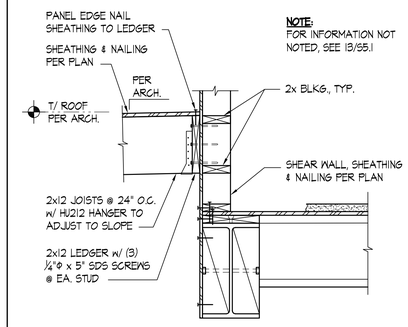
TYPICAL INTERIOR WALL AT CORRIDOR SCALE: 1"=1'-0" | 5



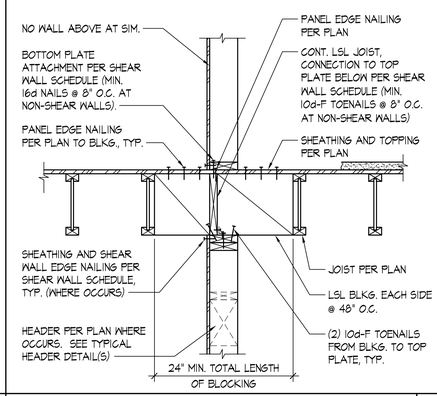
SCREEN WALL DETAIL - UNBRACED (AT WEST FACING PATIO) SCALE: NONE | 6



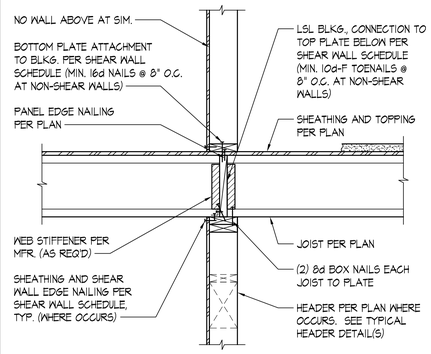
LOW DECK JOIST CONNECTION TO BEAM SCALE: NONE | 7



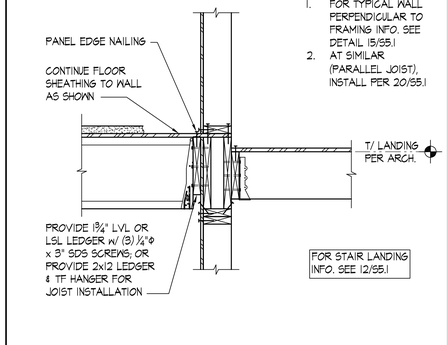
ROOF JOIST CONNECTION AT WIDE FLANGE SCALE: NONE | 8



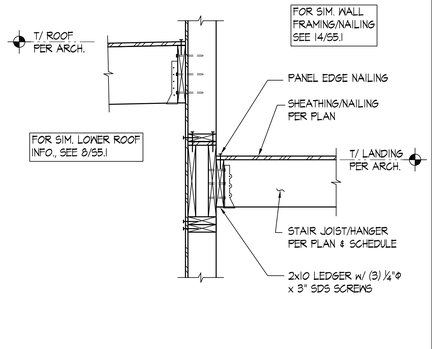
TYPICAL INTERIOR WALL - I-JOIST PARALLEL SCALE: NONE | 9



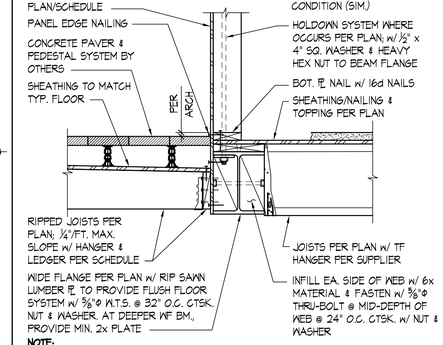
TYPICAL INTERIOR WALL - I-JOIST PERPENDICULAR SCALE: NONE | 10



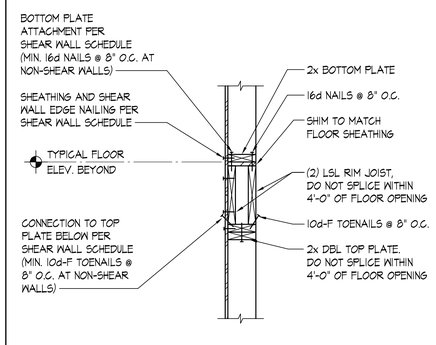
INTERIOR WALL AT FLOOR OPENING SCALE: NONE | 11



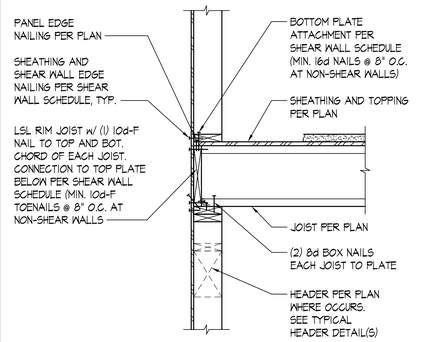
LOW ROOF AT EXTERIOR WALL ADJACENT TO STAIR LANDING SCALE: NONE | 12



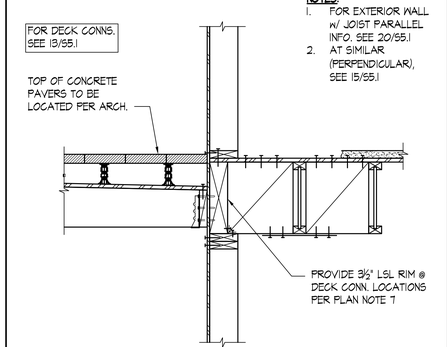
DECK CONNECTION AT WIDE FLANGE SCALE: NONE | 13



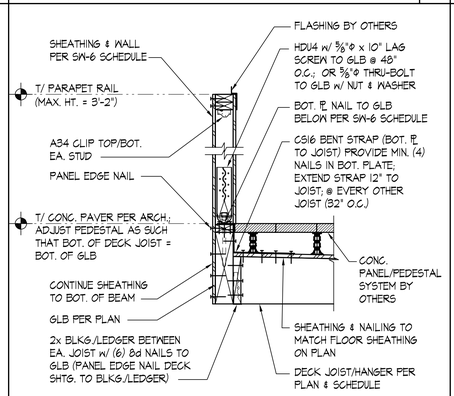
EXTERIOR WALL AT FLOOR OPENING - I-JOIST SCALE: NONE | 14



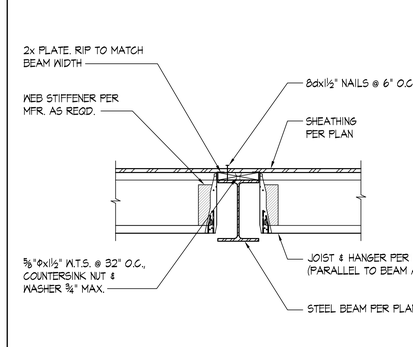
TYPICAL EXTERIOR WALL - I-JOIST PERPENDICULAR SCALE: NONE | 15



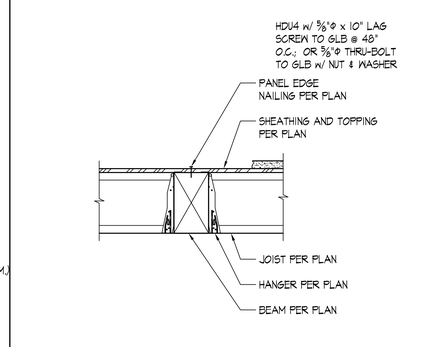
EXTERIOR WALL TO DECK SCALE: NONE | 16



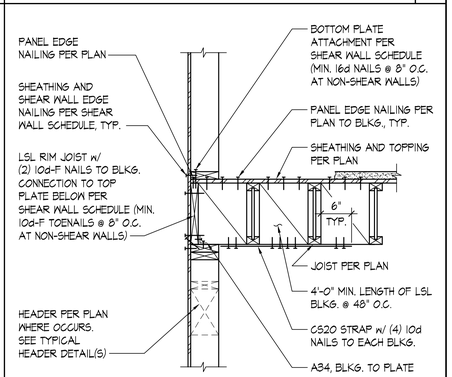
DECK RAIL / PARAPET CONNECTION SCALE: NONE | 17



TYPICAL WOOD JOIST TO STEEL BEAM W/ 2x PLATE SCALE: NONE | 18



TYPICAL I-JOIST TO FLUSH BEAM CONNECTION SCALE: NONE | 19



TYPICAL EXTERIOR WALL - I-JOIST PARALLEL SCALE: NONE | 20

ENGINEER'S SEAL
6/10/20

No.	DATE	REVISION

ISSUE	DATE

HARBORSIDE APARTMENTS

1310 "G" STREET
Bellingham, WA
For:
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

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Bellingham, WA 98228
Phone: (360)715-3058
email: mjhpe@comcast.net

Drawing Title:
FLOOR FRAMING DETAILS
PROJECT NO. :
DRAWN BY: TA
DATE:

Drawing No.
S5.1

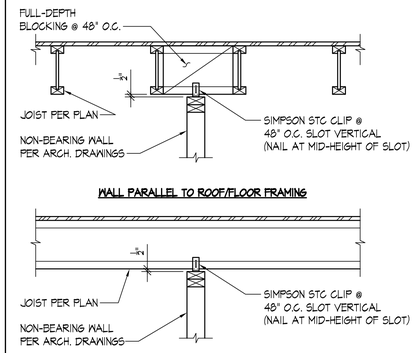
PHOTO REDUCTION SCALE 0" 1 INCH 2 INCHES 3 INCHES 4 INCHES

DETAIL SCALE: 1"=1'-0" | 1

DETAIL SCALE: 1"=1'-0" | 2

DETAIL SCALE: 1"=1'-0" | 3

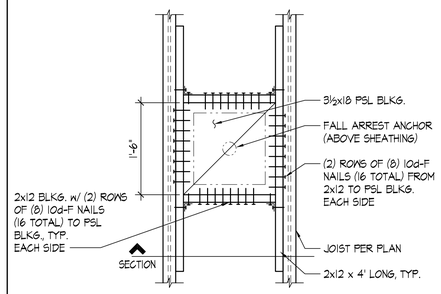
DETAIL SCALE: 1"=1'-0" | 4

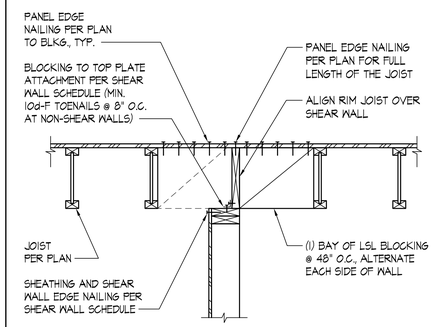


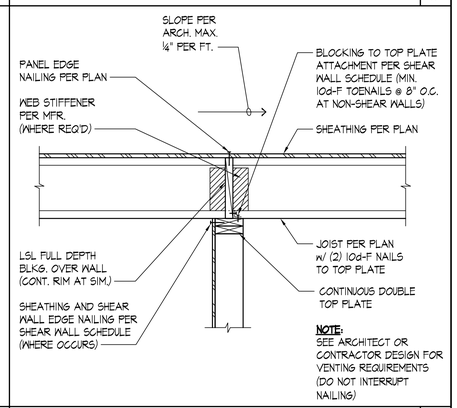
TYPICAL NON-STRUCTURAL WALL SUPPORT (TOP) - I-JOIST SCALE: NONE | 5

DETAIL SCALE: 1"=1'-0" | 6

DETAIL SCALE: 1"=1'-0" | 7





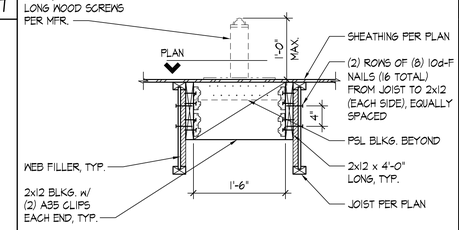


TYPICAL INTERIOR STRUCTURAL WALL AT ROOF - I-JOIST PARALLEL SCALE: NONE | 9

TYPICAL INTERIOR STRUCTURAL WALL AT ROOF - I-JOIST PERPENDICULAR SCALE: NONE | 10

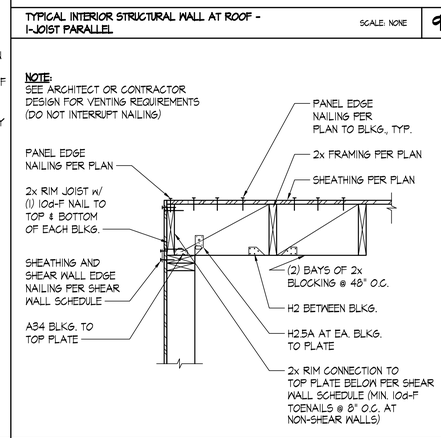
DETAIL SCALE: 1"=1'-0" | 11

DETAIL SCALE: 1"=1'-0" | 12

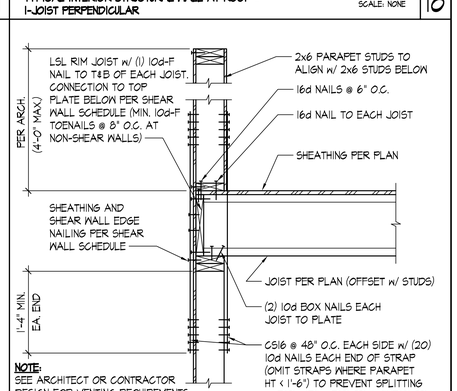


NOTE:
DESIGN JOISTS ADJACENT TO FALL ARREST ANCHORS FOR POINT LOAD OF 2,400 LBS. (Cd = 1.6) - UPWARD OR DOWNWARD, NOT CONCURRENT WITH OTHER LIVE LOADS.

TYPICAL FALL ARREST ANCHOR SUPPORT - I-JOISTS SCALE: NONE | 13

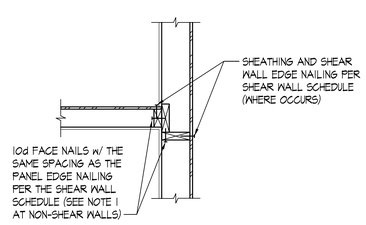


TYPICAL EXTERIOR WALL AT ROOF - 2x FRAMING PARALLEL SCALE: NONE | 14

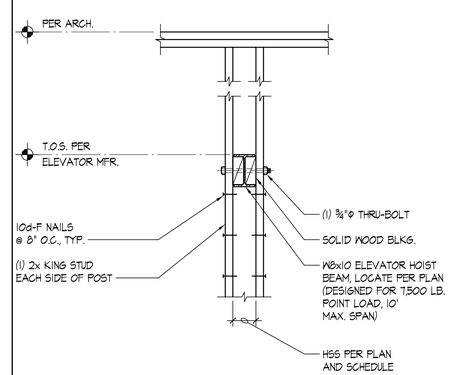


TYPICAL PARAPET - I-JOIST PERPENDICULAR SCALE: NONE | 15

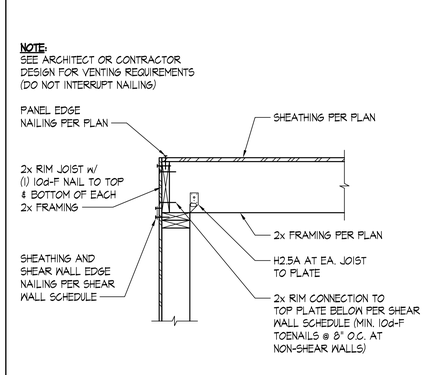
DETAIL SCALE: 1"=1'-0" | 16



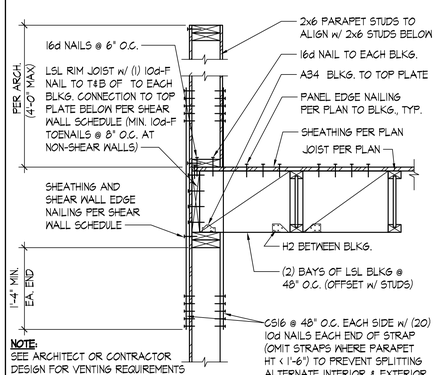
SCREEN WALL TO GUARD WALL CONNECTION AT PATIOS SCALE: NONE | 17



ELEVATOR HOIST BEAM TO WALL CONNECTION SCALE: NONE | 18



TYPICAL EXTERIOR WALL AT ROOF - 2x FRAMING PERPENDICULAR SCALE: NONE | 19



TYPICAL PARAPET - I-JOIST PARALLEL SCALE: NONE | 20

ENGINEER'S SEAL
6/10/20

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HARBORSIDE APARTMENTS

1310 "G" STREET
Bellingham, WA
For:
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

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Bellingham, WA 98228
Phone: (360)715-3059
email: mjhpe@comcast.net

Drawing Title:
ROOF FRAMING DETAILS
PROJECT NO. :
DRAWN BY: TA
DATE:

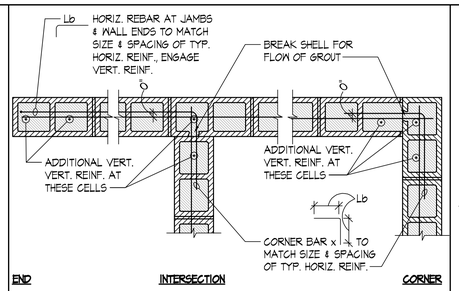
Drawing No.
S5.2

PHOTO REDUCTION SCALE 0" 1 INCH 2 INCHES 3 INCHES 4 INCHES

SPLICING & DEVELOPMENT OF REINFORCING IN GROUTED MASONRY CONSTRUCTION

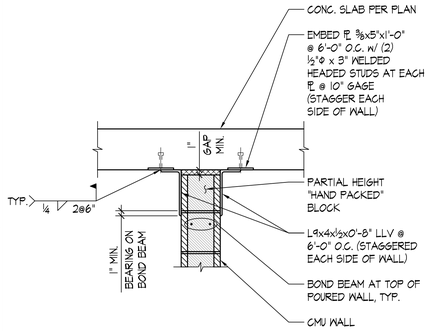
BAR SIZE	LENGTH
#4	25"
#5	40"
#6	54"
#7	63"
#8	72"

MASONRY REINFORCING SPLICE LENGTH SCHEDULE — SCALE: NONE — 1

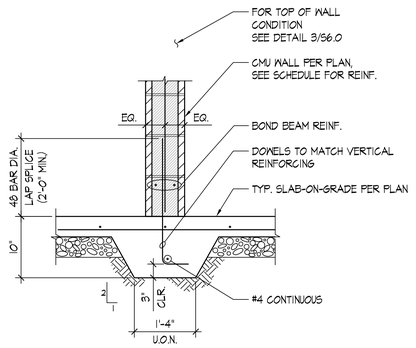


NOTES:
1. PLACE VERTICAL REINFORCING AT CENTER OF WALL U.O.N.
2. USE DOUBLE OPEN END BOND BEAM UNITS, SINGLE OPEN END UNITS AT CORNERS & ENDS OF WALL.
3. WHERE BOND BEAM IN ADJACENT WALLS OCCUR AT DIFFERENT LEVELS, RETURN ONE OF THE BEAMS 2'-0" AROUND CORNER

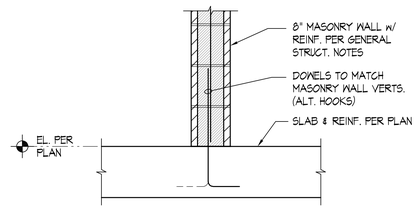
TYPICAL MASONRY WALL ENDS, INTERSECTIONS & CORNERS — SCALE: 1"=1'-0" — 2



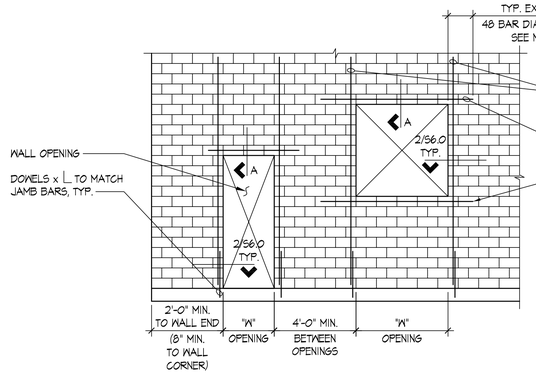
TYPICAL TOP OF NON-BEARING MASONRY WALLS — SCALE: 1"=1'-0" — 3



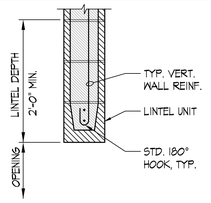
TYPICAL NON-BEARING MASONRY WALL FOUNDATION — SCALE: 1"=1'-0" — 4



DETAIL — SCALE: 1"=1'-0" — 5



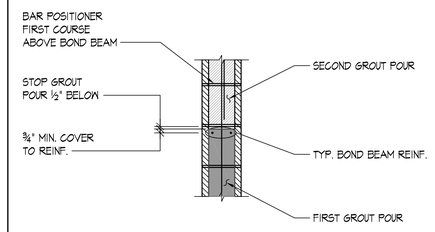
NOTES:
1. REINFORCEMENT SHOWN IN THIS DETAIL IS IN ADDITION TO THE TYPICAL VERTICAL AND HORIZONTAL WALL REINFORCEMENT.
2. JAMB BARS SHALL BE THE SAME SIZE AS TYPICAL VERTICAL REINFORCEMENT, UNLESS OTHERWISE NOTED.
3. OPENINGS LESS THAN 8"x16" DO NOT REQUIRE ADDITIONAL REINFORCEMENT.
4. WHEN 48 BAR DIA. OR 2'-0" MIN. CAN NOT BE OBTAINED, EXTEND REINFORCEMENT AS FAR AS POSSIBLE AND PROVIDE STANDARD 90° HOOK (DOWN).



SECTION A

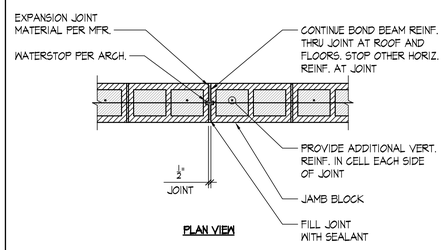
LINTEL REINFORCING SCHEDULE	
OPENING "W"	LINTEL REINF.
LESS THAN 6'-0"	(2) #5
6'-0" TO LESS THAN 10'-0"	(2) #6
10'-0" TO LESS THAN 14'-0"	(2) #8
OVER 14'-0"	SEE PLANS

TYPICAL REINFORCEMENT AROUND OPENINGS IN MASONRY WALLS — SCALE: 1"=1'-0" — 8



NOTES:
1. SEE GENERAL NOTES FOR GROUT LIFT REQUIREMENTS.
2. CLEANOUTS ARE REQUIRED FOR ALL GROUT POURS OVER 5' IN HEIGHT.

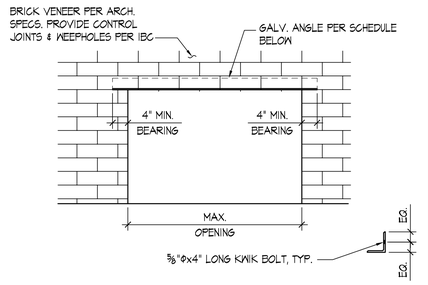
TYPICAL HORIZONTAL CONSTRUCTION JOINT IN MASONRY WALL — SCALE: 1"=1'-0" — 9



PLAN VIEW

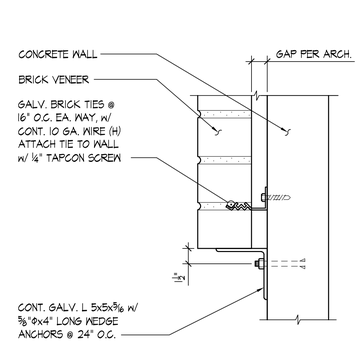
NOTES:
1. PROVIDE JOINT FULL HEIGHT OF WALL WHERE INDICATED ON ARCH. DRAWINGS (40'-0" MAX. SPACING).
2. JOINTS SHALL BE LOCATED A MINIMUM OF 2'-0" FROM ANY OPENINGS.

TYPICAL VERTICAL JOINT IN MASONRY WALL — SCALE: 1"=1'-0" — 10



LINTEL SCHEDULE	
MAX. SPAN:	L SIZE
≤ 7'-0"	4"x3½"x⅜" LLV
10'-0"	4"x3½"x⅜" LLV 11/16"ø HOLES IN VERT. LEG & 3' O.C. (TOTAL OF 2)
15'-0"	5"x3½"x⅜" LLV 11/16"ø HOLES IN VERT. LEG & 3' O.C. (TOTAL OF 3)
18'-0"	5"x3½"x⅜" LLV 11/16"ø HOLES IN VERT. LEG & 3' O.C. (TOTAL OF 4)

STEEL LINTEL AT BRICK VENEER — SCALE: NONE — 11



BRICK TIE DETAIL - (BRICK SUPPORT AT EXTERIOR WALL) — SCALE: NONE — 12

DETAIL — SCALE: 1"=1'-0" — 13

DETAIL — SCALE: 1"=1'-0" — 14

DETAIL — SCALE: 1"=1'-0" — 15

DETAIL — SCALE: 1"=1'-0" — 16

DETAIL — SCALE: 1"=1'-0" — 17

DETAIL — SCALE: 1"=1'-0" — 18

DETAIL — SCALE: 1"=1'-0" — 19

DETAIL — SCALE: 1"=1'-0" — 20

ENGINEER'S SEAL
6/10/20

No.	REVISION	DATE

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HARBORSIDE APARTMENTS

1310 "G" STREET
Bellingham, WA
For:
Bad Reinertz L.L.C.
1000 ASTOR STREET #101, BELLINGHAM, WA 98225

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Drawing Title:
MASONRY DETAILS

PROJECT NO. :
DRAWN BY: TA
DATE:

Drawing No.
S6.0

PHOTO REDUCTION SCALE — 0" — 1 INCH — 2 INCHES — 3 INCHES — 4 INCHES

WASHINGTON STATE ENERGY CODE 2015

2015 WASHINGTON STATE CODE COMPLETION REQUIREMENTS:

1. ALL AIR AND HYDRONIC SYSTEMS SHALL BE BALANCED PER MECHANICAL PLANS AND SCHEDULES
2. ALL MECHANICAL EQUIPMENT, SYSTEMS, AND CONTROLS SHALL BE FUNCTIONAL TESTED FOR PROPER OPERATION PER MANUFACTURES INSTALLATION INSTRUCTIONS AND PER SEQUENCE OF OPERATION
3. THE FOLLOWING DOCUMENTATION SHALL BE PROVIDED TO THE OWNER OR OWNER'S REPRESENTATIVE PER SECTION C408.1.2 ON A MUTUALLY AGREED UPON SCHEDULE DATE:
   A. SUBMITTAL DATA STATING EQUIPMENT SIZE AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE
   B. OPERATION AND MAINTENANCE MANUAL
   C. ACCURATE AS-BUILT DRAWING UPON COMPLETION OF PROJECT
4. COMMISSIONING COMPLIANCE FORM FIGURE C408.1.4.2 OF THE 2012 WSEC OR EQUIVALENT SHALL BE SUBMITTED TO THE ENGINEER OF RECORD AND BUILDING OFFICIAL UPON SUBSTANTIAL COMPLETION OF THE PROJECT

C404.2 SERVICE WATER-HEATING EQUIPMENT PERFORMANCE EFFICIENCY
WATER-HEATING EQUIPMENT AND HOT WATER STORAGE TANKS SHALL MEET THE REQUIREMENTS OF TABLE C404.2. THE EFFICIENCY SHALL BE VERIFIED THROUGH CERTIFICATION AND LISTED UNDER AN APPROVED CERTIFICATION PROGRAM, OR IF NO CERTIFICATION PROGRAM EXISTS, THE EQUIPMENT EFFICIENCY RATINGS SHALL BE SUPPORTED BY DATA FURNISHED BY THE MANUFACTURER.

C404.4 HEAT TRAPS
WATER-HEATING EQUIPMENT NOT SUPPLIED WITH INTEGRAL HEAT TRAPS AND SERVING NONCIRCULATING SYSTEMS SHALL BE PROVIDED WITH HEAT TRAPS ON THE SUPPLY AND DISCHARGE PIPING ASSOCIATED WITH THE EQUIPMENT.

C404.5 WATER HEATER INSTALLATION
ELECTRIC WATER HEATERS IN UNCONDITIONED SPACES OR ON CONCRETE FLOORS SHALL BE PLACED ON AN INCOMPRESSIBLE, INSULATED SURFACE WITH A MINIMUM THERMAL RESISTANCE OF R-10.

C404.6 PIPE INSULATION
FOR AUTOMATIC-CIRCULATING HOT WATER AND HEAT-TRACED SYSTEMS, PIPING SHALL BE INSULATED WITH NOT LESS THAN 1 INCH (25 MM) OF INSULATION HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER INCH/H · FT^2 · °F (1.53 W PER 25MM/M · K). THE FIRST 8 FEET (2438 MM) OF PIPING IN NONHOT-WATER-SUPPLY TEMPERATURE MAINTENANCE SYSTEMS SERVED BY EQUIPMENT WITHOUT INTEGRAL HEAT TRAPS SHALL BE INSULATED WITH 0.5 INCH (12.7 MM) OF MATERIAL HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER INCH/H · FT^2 · °F (1.53 W PER 25 MM/M · K).

EXCEPTIONS:

1. HEAT-TRACED PIPING SYSTEMS SHALL MEET THE INSULATION THICKNESS REQUIREMENTS PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. UNTRACED PIPING WITHIN A HEAT TRACED SYSTEMS SHALL BE INSULATED WITH NOT LESS THAN 1 INCH (25 MM) OF INSULATION HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER INCH/H · FT^2 · °F (1.53 W PER 25 MM/M · K).
2. HOT WATER PIPING THAT IS PART OF THE FINAL PIPE RUN TO THE PLUMBING FIXTURE AND IS NOT PART OF THE AUTOMATIC-CIRCULATING HOT WATER RETICULATION PATH IS NOT REQUIRED TO MEET THE MINIMUM INSULATION REQUIREMENTS OF C404.6.

C404.7 HOT WATER SYSTEM CONTROLS
CIRCULATING HOT WATER SYSTEM PUMPS OR HEAT TRACE SHALL BE ARRANGED TO BE TURNED OFF EITHER AUTOMATICALLY OR MANUALLY WHEN THERE IS LIMITED HOT WATER DEMAND. READY ACCESS SHALL BE PROVIDED TO THE OPERATING CONTROLS.

C408.1 SERVICE WATER HEATING SYSTEMS COMMISSIONING
SYSTEMS ARE EXEMPT FROM THE COMMISSIONING PROCESS IN BUILDINGS WHERE THE LARGEST SERVICE WATER HEATING CAPACITY IS LESS THAN 200,000 BTU/H (58,562 W) AND WHERE THERE ARE NO POOLS OR PERMANENT SPAS.

1

PLUMBING NOTES

1. ALL PIPING AND PLUMBING SHALL MEET THE 2015 UPC
2. ALL PIPE SIZING NOTED ON THE DRAWINGS ARE MINIMUM
3. PLUMBING CONTRACTOR SHALL PROVIDE MARKUP OF DEVIATIONS FROM CONTRACT DWGS FOR INCORPORATION INTO AS-BUILT SET ON FULL SIZE DWGS.
4. PLUMBER SHALL FIELD COORDINATE BUCKOUTS AND FOOTING & FLOOR SLEEVES WHERE NECESSARY.
5. THESE PLANS ARE SCHEMATIC AND DO NOT INDICATE EVERY OFFSET REQUIRED FOR ROUTING. IT SHALL BE THE PLUMBING CONTRACTOR'S RESPONSIBILITY TO COORDINATE PIPE ROUTING AND ELEVATIONS WITH OTHER AFFECTED TRADES BEFORE CONSTRUCTION. WHERE CONFLICTS OCCUR, REROUTING MAY BE NECESSARY.
6. THE PLUMBER SHALL VERIFY ALL DRAIN AND PIPING LOCATIONS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
7. ALL FIRE STOPPING OF THROUGH AND MEMBRANE PENETRATIONS AS REQUIRED BY THE IBC SHALL BE PROVIDED AND INSTALLED BY THE PLUMBING CONTRACTOR.
8. HANGERS AND SUPPORTS – ALL HANGERS AND SUPPORTS PER M55 SP69. HANGERS ARE NOT REQUIRED TO BE OVERSIZED FOR PIPE INSULATION. PROVIDE HANGERS AND SUPPORTS PER THE 2012 UNIFORM PLUMBING CODE.
9. ALL TRADES TO LEAVE A MINIMUM 36" CLEARANCE IN FRONT OF ELECTRICALLY OPERATED PLUMBING EQUIPMENT ACCESS PANELS FOR SERVICING, PER NEC REQUIREMENTS.
10. FRAMING, PATCHING AND PAINTING OF WALL, CEILING AND FLOOR OPENINGS SHALL BE BY GENERAL CONTRACTOR. THIS INCLUDES OPENINGS THROUGH AREA SEPARATION WALLS.
11. ALL TRENCHING AND EXCAVATION INSIDE THE BUILDING IS PROVIDED BY THE PLUMBING CONTRACTOR.
12. ALL BACKFILLING AND BACKFILL MATERIAL IS PROVIDED AND PERFORMED BY THE CIVIL CONTRACTOR. SELECT FILL MAY BE REQUIRED TO ENSURE SOIL STABILITY FOR PIPING SUPPORT AND TO ENSURE THAT STONES, BOULDERS, CINDERFILL, OR OTHER POTENTIALLY DAMAGING MATERIALS DO NOT CONTACT THE PIPE. SELECT FILL MATERIAL WILL BE PROVIDED BY THE GENERAL CONTRACTOR.
13. IT IS THE PLUMBING CONTRACTORS RESPONSIBILITY TO ENSURE THAT THE PIPING IS SURROUNDED BY AMPLE COVERAGE OF APPROPRIATE FILL MATERIAL PRIOR TO BACKFILLING.

PLUMBING ABBREVIATIONS

% P.G.	PERCENT PROPYLENE GLYCOL	HTWC	HIGH TEMP WATER CIRCULATING – 140°F
AFF	ABOVE FINISH FLOOR	HWC	HOT WATER CIRCULATING
AAV	AUTOMATIC AIR VENT	HWR	HOT WATER RETURN
CA	COMPRESSED AIR	HWS	HOT WATER SUPPLY
CW	COLD WATER (DOMESTIC)	KW	KILOWATT
CLG.	CEILING	I.E.	INVERT ELEVATION
COND.	CONDENSATE	LAV	LAVATORY
CONN.	CONNECT/CONNECTION	LWT	LEAVING WATER TEMP
DCVA	DOUBLE CHECK VALVE ASSEMBLY	MED AIR	MEDICAL AIR
DFU	DRAIN FIXTURE UNITS	MBH	THOUSANDS BTU PER HOUR
DIA.	DIAMETER	O2	OXYGEN
DN	DOWN (THRU FLOOR BELOW)	ORL	OVERFLOW RAIN LEADER
DROP	DROP (DOWN, SAME LEVEL)	PEX	CROSS-LINKED POLYETHYLENE
DWG.	DRAWING	POC	POINT OF CONNECTION
EA.	EACH	PRV	PRESSURE REDUCING VALVE
EL.	ELEVATION	PSI	POUNDS PER SQUARE INCH
EWT	ENTERING WATER TEMP	R.	RISE (UP, SAME LEVEL)
FCO	FLOOR CLEAN OUT	RL	RAIN LEADER
FD	FLOOR DRAIN	RPBA	REDUCED PRESSURE BACKFLOW ASSEMBLY
FFD	FUNNEL FLOOR DRAIN	SF	SQUARE FEET
FFE	FINISH FLOOR ELEVATION	TYP.	TYPICAL
FLR.	FLOOR	UP	UP (THRU FLOOR ABOVE)
FPS	FEET PER SECOND	V	VENT
FS	FLOOR SINK	VAC	VACUUM
GPM	GALLONS PER MINUTE	VTR	VENT THRU ROOF
GW	GREASE WASTE	W	WASTE
HB	HOSE BIBB	WSFU	WATER SUPPLY FIXTURE UNITS
HW	HOT WATER	W/	WITH
HTW	HIGH TEMP HOT WATER – 140°F	WC	WATER CLOSET
		WCO	WALL CLEANOUT

DOMESTIC WATER NOTES

FOR ALL COLD WATER AND HOT WATER:

1. ALL ABOVE GROUND PIPING MATERIAL SHALL BE PEX-a SDR-9 TUBING WITH MECHANICAL CONNECTIONS OR TYPE "L" COPPER WITH SOLDERED CONNECTIONS. COPPER TUBING TO BE MANUFACTURED TO ASTM B 88 STANDARD AND CONTAIN APPROPRIATE MARKINGS AND STAMP.
2. ALL BELOW GROUND PIPING MATERIAL TO BE PEX-a SDR-9 TUBING WITH MECHANICAL CONNECTIONS OR TYPE "L" COPPER WITH SOLDERED CONNECTIONS. COPPER TUBING TO BE MANUFACTURED TO ASTM B 88 STANDARD AND CONTAIN APPROPRIATE MARKINGS AND STAMP. PEX TUBING MAY ALSO BE USED FOR BELOW GRADE PIPING WITH NO JOINTS.
3. ALL SOLDER JOINTS TO USE 95-5 LEAD FREE SOLDER. REAM ALL PIPING ENDS AND PREPARE WITH EMORY CLOTH TO REMOVE ALL BURRS, EXTRUSION MARKS, AND CORROSION. USE ONLY WATER SOLUBLE FLUX.
4. IT IS ACCEPTABLE FOR HANGERS TO MAKE DIRECT CONTACT WITH PIPING. INSULATE PIPING WITH ELASTOMERIC INSULATION. INSULATE PIPING MAINS.

SANITARY WASTE & VENT NOTES

FOR ALL SANITARY WASTE, GREASE WASTE, VENT, AND CONDENSATE PIPING:

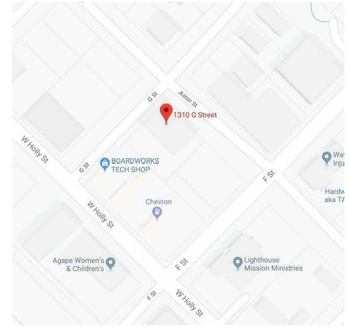
1. ALL BELOW GROUND SANITARY WASTE AND VENT PIPING SHALL BE DWV ABS WASTE PIPE AND FITTINGS.
2. ALL ABOVE GRADE SANITARY WASTE AND VENT PIPING SHALL BE DWV ABS WASTE PIPE AND FITTINGS.
3. WATER HEATER RELIEF LINES SHALL BE COPPER OR CPVC
4. SLOPE ALL CONDENSATE AND WASTE PIPING 1/4" PER LINEAR FOOT UNLESS OTHERWISE NOTED ON DRAWING SHEETS. ALL VENT PIPING SHALL BE LEVEL OR SLOPE DOWNWARD TOWARD THE FIXTURE CONNECTION.
5. PROVIDE CLEANOUTS AS INDICATED ON DRAWINGS, AT BASE OF ALL RISERS, AND AT ALL AREAS AS REQUIRED PER CODE.
6. PROVIDE TRAP PRIMERS ON ALL FLOOR DRAINS AND INDIRECT WASTE RECEIVERS.
7. TRAPS UNDER HANDICAP LAVATORIES: INSULATE WITH PRE-FORMED INSULATING COVERS COMPLYING WITH ACCESSIBILITY REQUIREMENTS. USE TRUEBRO OR APPROVED EQUAL.

LINETYPE LEGEND

- CW (DOMESTIC COLD WATER)
- HW (DOMESTIC HOT WATER)
- W (SANITARY WASTE)
- V (SANITARY VENT)
- RL (RAIN LEADER)
- ORL (OVERFLOW RAIN LEADER)

SHEET INDEX

SHEET NUMBER	SHEET TITLE	PERMIT DATE: 04-23-2020				
P-000	COVER SHEET	•				
P-101	UNDERG. & BASEMENT WASTE	•				
P-102	GOUND PLAN WASTE	•				
P-103	SECOND & THIRD FLOOR WASTE	•				
P-104	FOURTH & FIFTH FLOOR WASTE	•				
P-105	SIXTH FLOOR & ROOF WASTE	•				
P-201	BASE. & GROUND FLOOR WATER	•				
P-202	SECOND & THIRD FLOOR WATER	•				
P-203	FOURTH TO SIXTH FLOOR WATER	•				
P5.01	RISER DIAGRAMS	•				
P6.01	SCHEDULES & DETAILS	•				
	TOTAL	11	0			



VICINITY PLAN
SCALE: NTS

REVISIONS			
NO.	DATE	DESCRIPTION	
1	8-18-2020	BACKCHECK COMMENTS	
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ANDGAR™ Mechanical, LLC
STATE CONTRACTORS LICENSE NUMBER.....ANDGAML825N3
JOB#: 820011

PERMIT SET

PLUMBING COVER SHEET

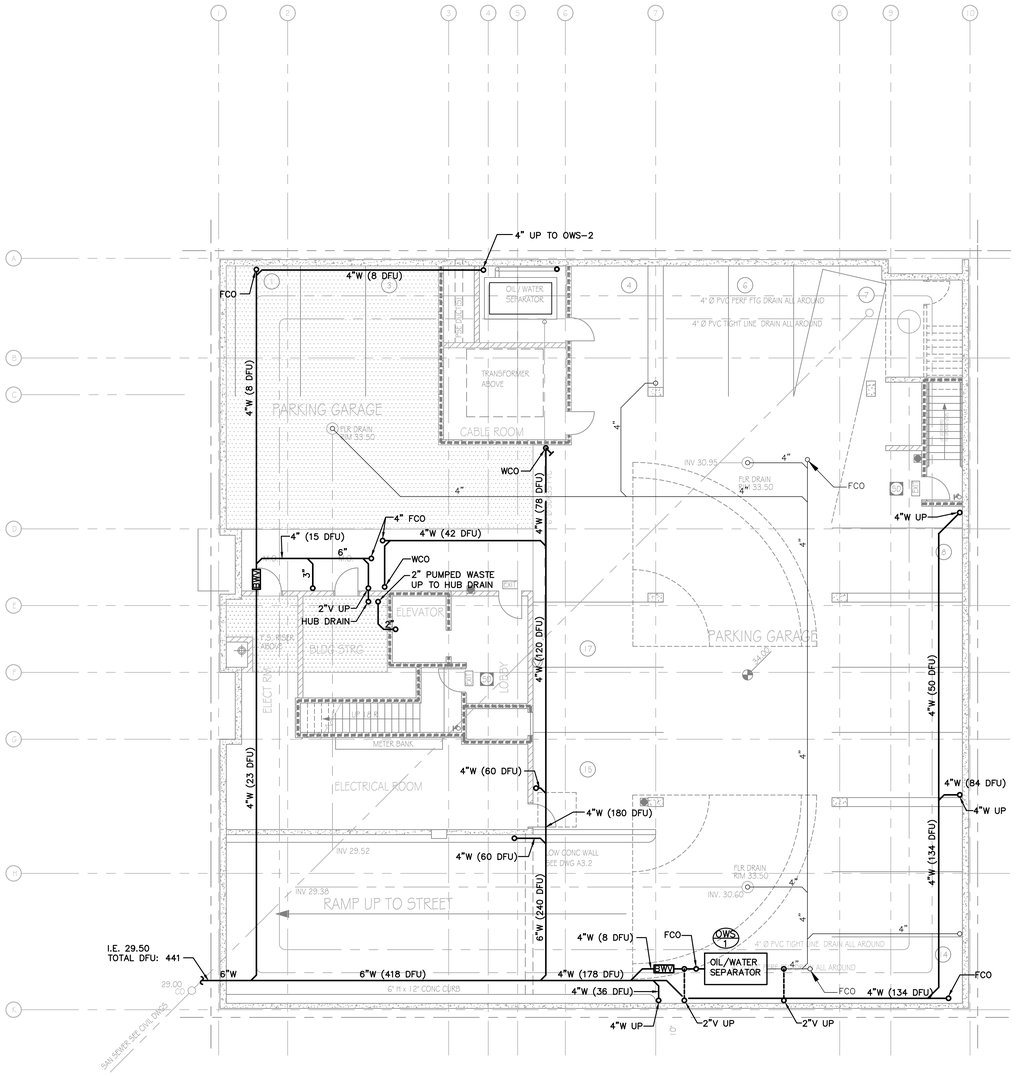
HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

Last Revision Date: 08-19-2020

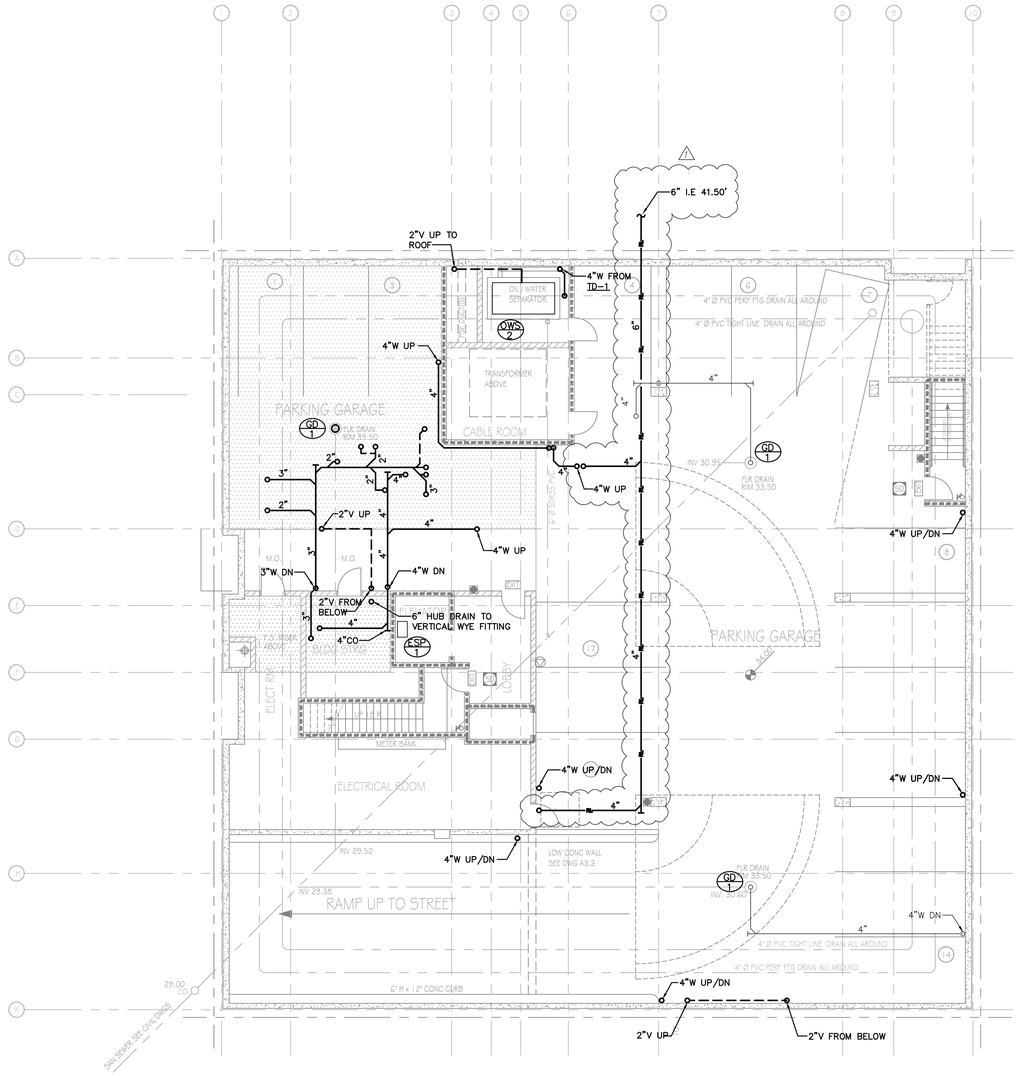
ENGINEERED BY:
DRAWN BY: J.G.

P-000

19 August 2020 8:12 AM r:\mechanical\commercial\current projects\harborside project - 820011\Drawings\acad revit\P-000 Plumbing Cover.dwg jones goertzen



PLUMBING UNDERGROUND PLAN – WASTE & STORM
SCALE: 1/8" = 1'-0"



PLUMBING BASEMENT PLAN – WASTE & STORM
SCALE: 1/8" = 1'-0"

NOTES:

1. CLEANOUTS FOR DRAINS THAT PASS THROUGH A BACKWATER VALVE SHALL BE CLEARLY IDENTIFIED WITH A PERMANENT LABEL STATING "BACKWATER VALVE DOWNSTREAM." UPC 710.1
2. BACKWATER VALVES TO EITHER BE CONTINOUSLY EXPOSED, OR IN A MASONRY PIT LIFTED WITH AN ADEQUATELY SIZED REMOVABLE COVER PER UPC 710.6

1

REVISIONS

NO.	DATE	DESCRIPTION
1	8-18-2020	BACKCHECK COMMENTS
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ANDGAR™ Mechanical, LLC

STATE CONTRACTORS LICENSE NUMBER.....ANDGAML825N3

JOB#: 820011

PERMIT SET

PLUMBING UNDERGROUND & BASEMENT PLANS - WASTE & STORM

HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

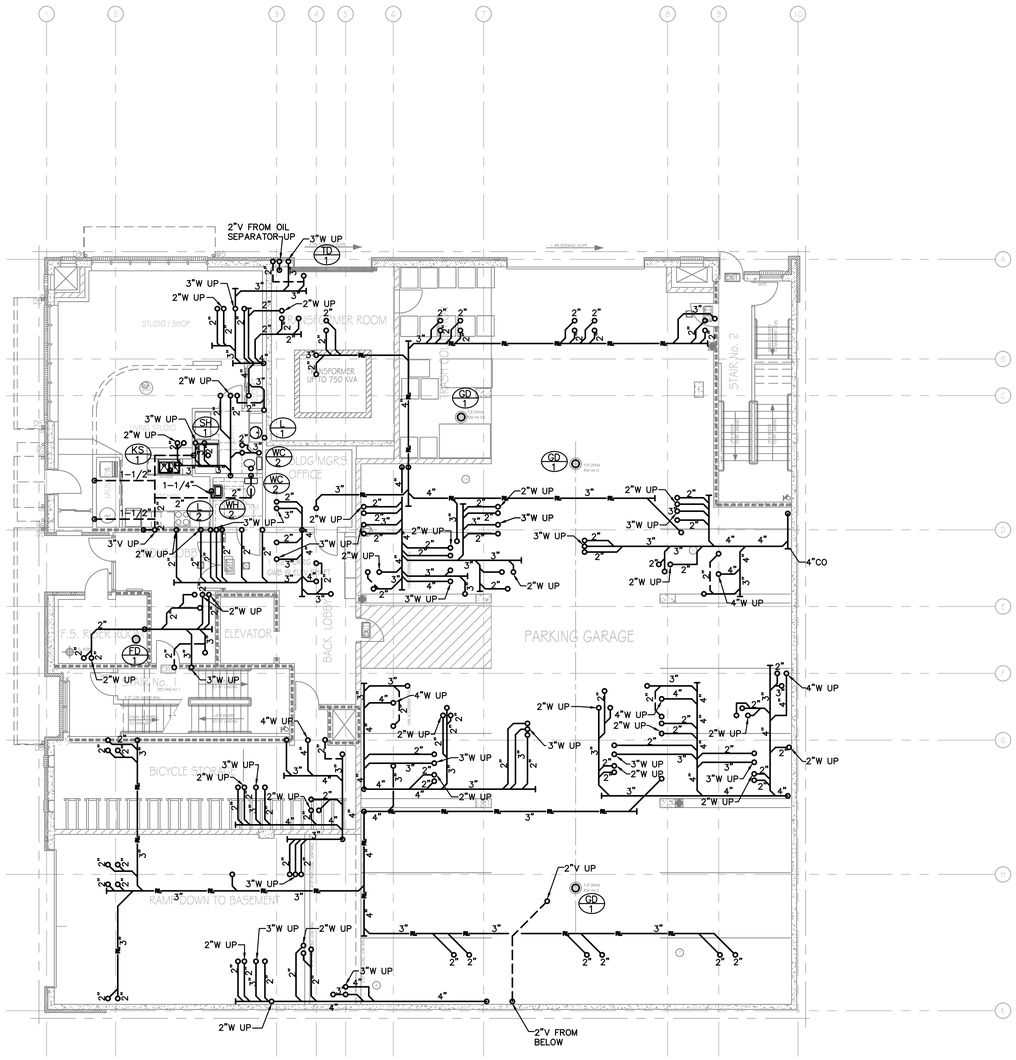
Last Revision Date:
08-19-2020

ENGINEERED BY:

DRAWN BY: J.G.

P-101

19 August 2020 8:12 AM r:\mechanical\commercial\current projects\harborside project - 820011\Drawings\acad revit\P-101 Underground Basement.dwg james goertzen



PLUMBING GROUND PLAN – WASTE & STORM
SCALE: 1/8" = 1'-0"

NOTE:
PROVIDE ADEQUATE DISTANCES
FOR ALL SUDS RELIEF LINES
PER 2015 UPC

REVISIONS

NO.	DATE	DESCRIPTION
1	8-18-2020	BACKCHECK COMMENTS
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ANDGAR Mechanical, LLC

STATE CONTRACTORS LICENSE NUMBER.....ANDGAML825N3

JOB#: 820011

PERMIT SET

PLUMBING GROUND PLAN - WASTE & STORM

HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

Last Revision Date:
08-19-2020

ENGINEERED BY:

DRAWN BY:
J.G.

P-102

19 August 2020 8:12 AM r:\mechanical\commercial\current projects\harborside project – 820011\Drawing\acad next\P-101 Underground Basement.dwg james goertzen



PLUMBING SECOND FLOOR PLAN – WASTE & STORM

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



PLUMBING THIRD FLOOR PLAN – WASTE & STORM

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

P-103

ENGINEERED BY: J.G.

DRAWN BY:

Last Revision Date: 08-19-2020

PLUMBING SECOND & THIRD FLOOR PLANS - WASTE & STORM

HARBORSIDE APARTMENTS

1310 G STREET

BELLINGHAM, WA 98225

PERMIT SET

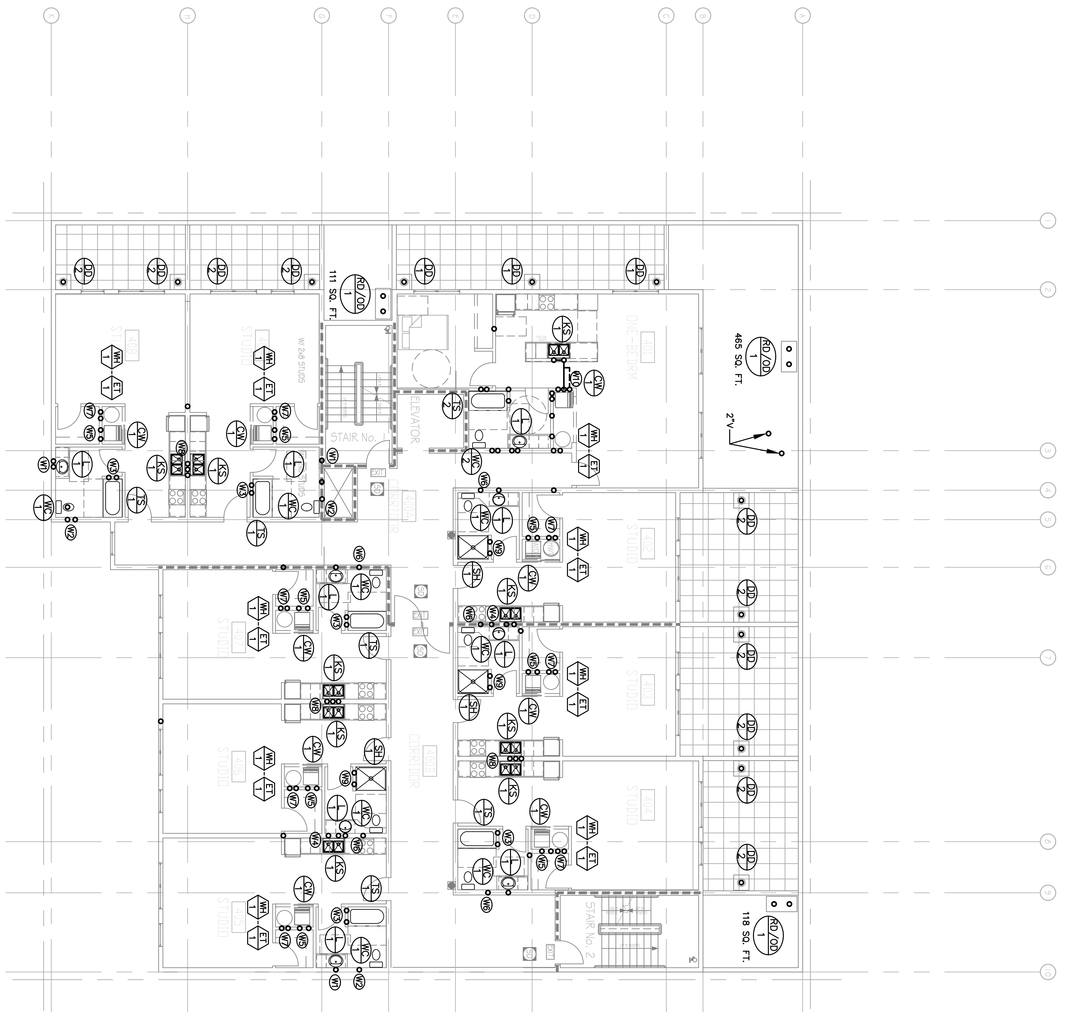
ANDGAR Mechanical, LLC

JOB#: 820011

STATE CONTRACTORS LICENSE NUMBER.....ANDGAML825N3

REVISIONS

NO.	DATE	DESCRIPTION
1	8-18-2020	BACKCHECK COMMENTS
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PLUMBING FOURTH FLOOR PLAN – WASTE & STORM

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



PLUMBING FIFTH FLOOR PLAN – WASTE & STORM

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

P-104

ENGINEERED BY: J.G.

DRAWN BY: J.G.

Last Revision Date: 08-19-2020

PLUMBING FOURTH & FIFTH FLOOR PLANS - WASTE & STORM

HARBORSIDE APARTMENTS

1310 G STREET

BELLINGHAM, WA 98225

PERMIT SET

ANDGAR Mechanical, LLC

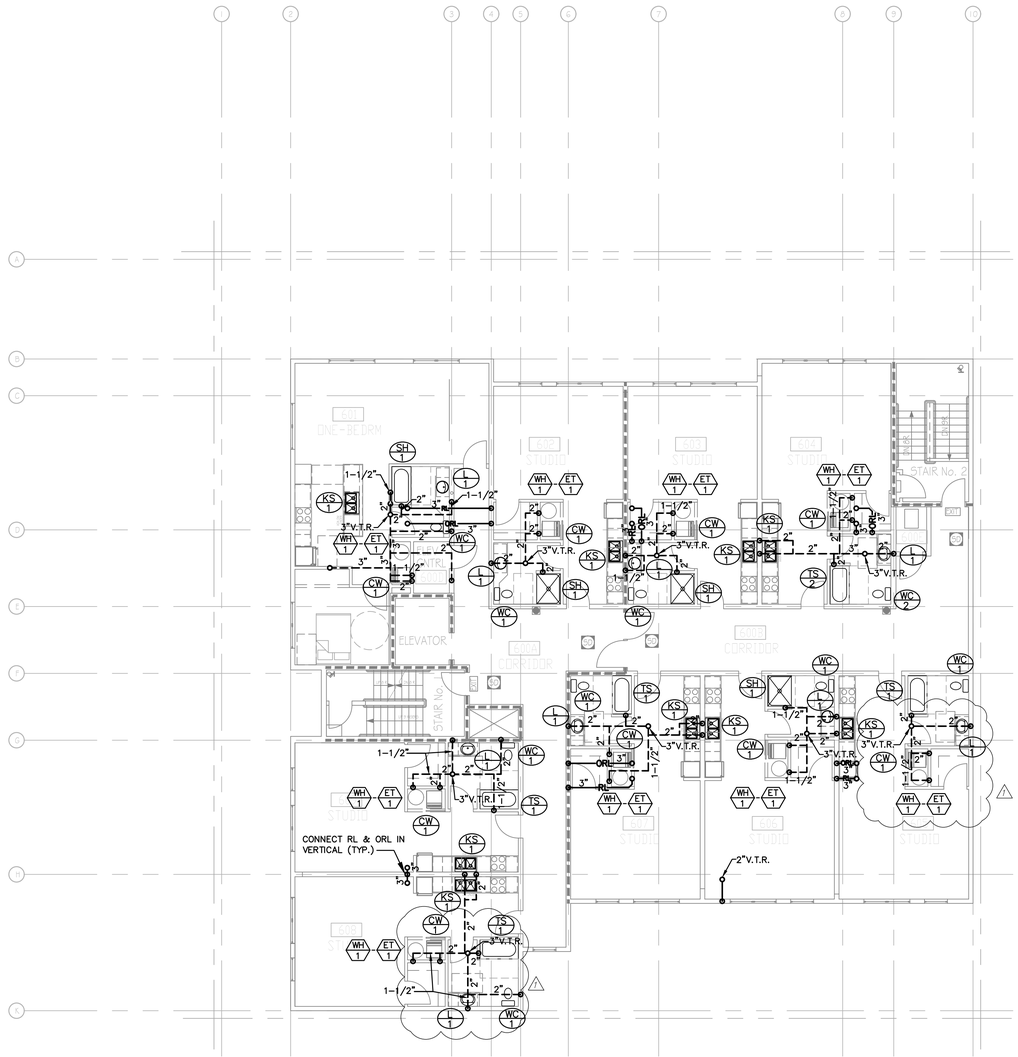
JOB#: 820011

STATE CONTRACTORS

LICENSE NUMBER.....ANDGAML825N3

REVISIONS

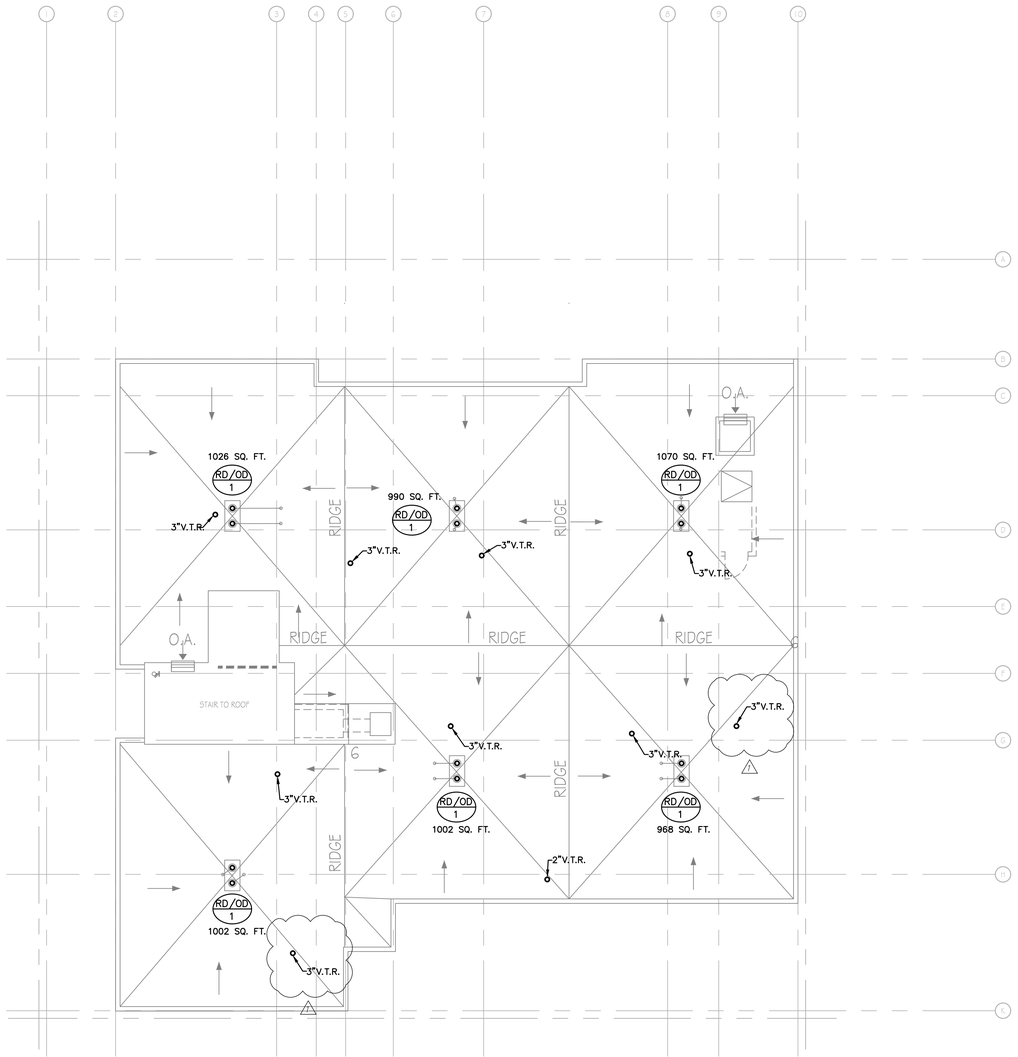
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PLUMBING SIXTH FLOOR PLAN – WASTE & STORM
SCALE: 1/8" = 1'-0"

NOTE:

1. ALL ROOF DRAINS AND SECONDARY ROOF DRAINS ARE DESIGNED TO MEET THE REQUIREMENTS OF UPC 1101.12.2.2.2



PLUMBING ROOF PLAN – WASTE & STORM
SCALE: 1/8" = 1'-0"

REVISIONS

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ANDGAR Mechanical, LLC

STATE CONTRACTORS LICENSE NUMBER.....ANDGAML825N3

JOB#: 820011

PERMIT SET

PLUMBING SIXTH FLOOR PLAN & ROOF PLAN - WASTE & STORM

HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

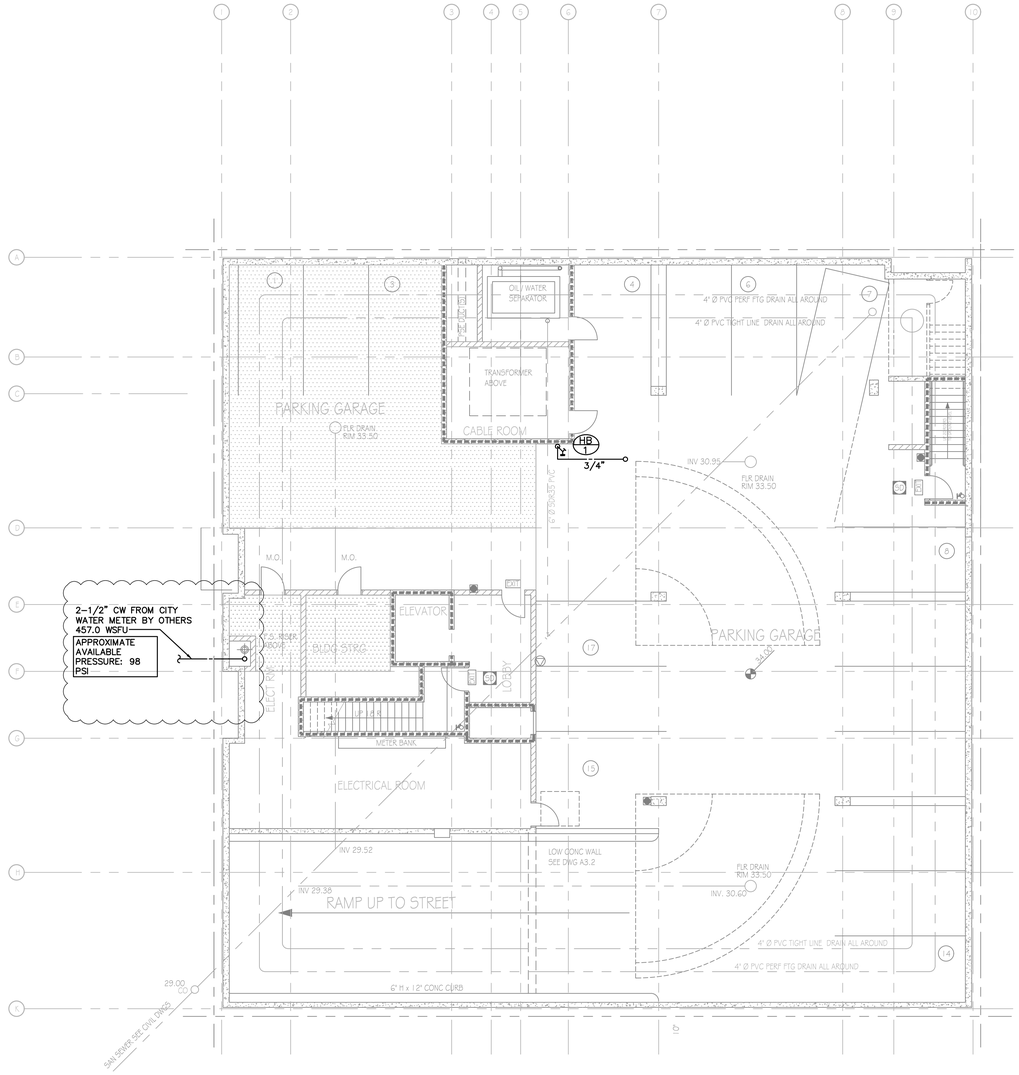
Last Revision Date: 08-19-2020

ENGINEERED BY:

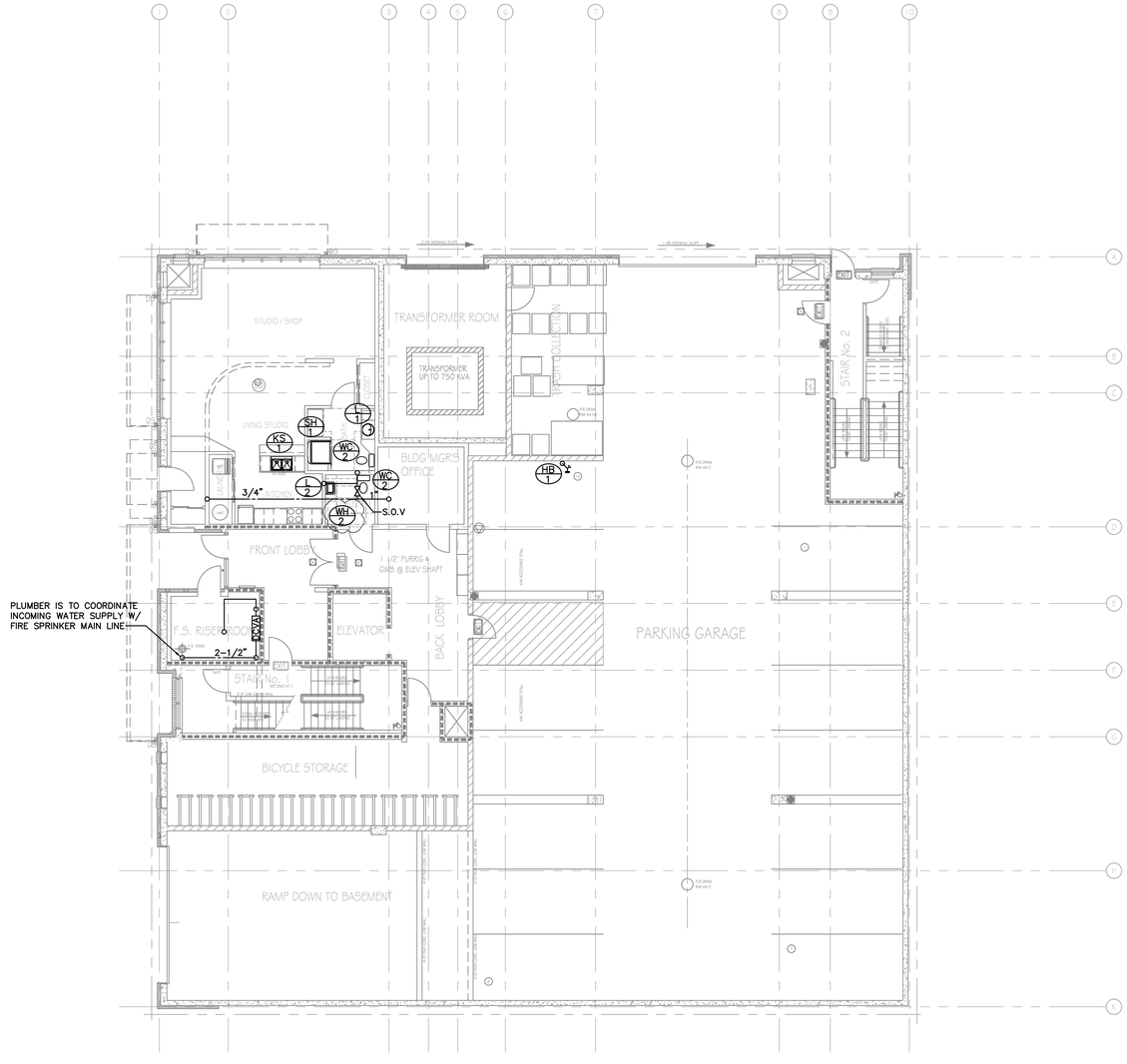
DRAWN BY: J.G.

P-105

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PLUMBING BASEMENT PLAN – WATER
SCALE: 1/8" = 1'-0"



PLUMBING GROUND PLAN – WATER
SCALE: 1/8" = 1'-0"

REVISIONS		
NO.	DATE	DESCRIPTION
1	8-18-2020	BACKCHECK COMMENTS
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ANDGAR Mechanical, LLC

JOB#: 820011

STATE CONTRACTORS LICENSE NUMBER.....ANDGAML825N3

PERMIT SET

PLUMBING BASEMENT & GROUND FLOOR PLANS - WATER

HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

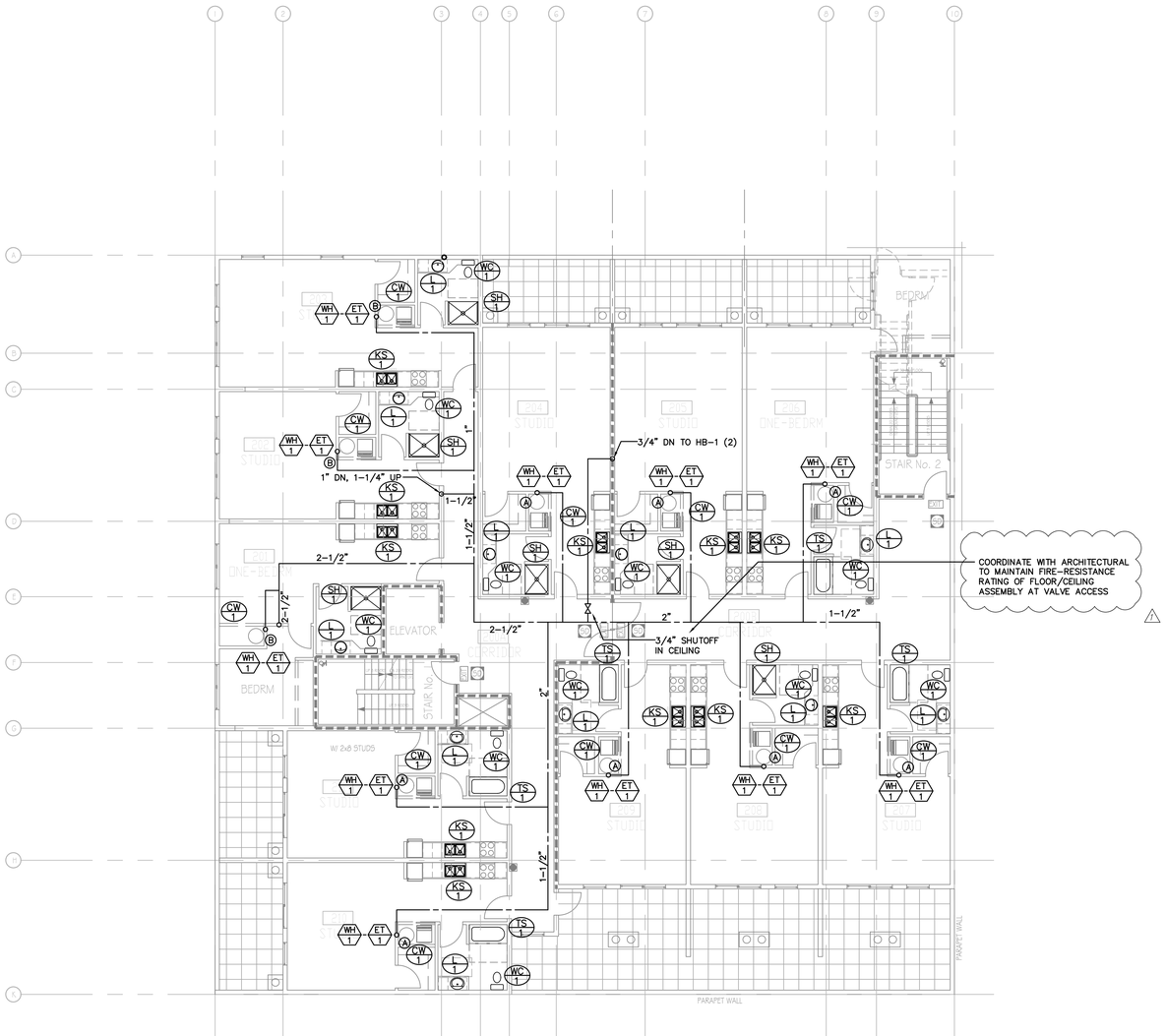
Last Revision Date: 08-19-2020

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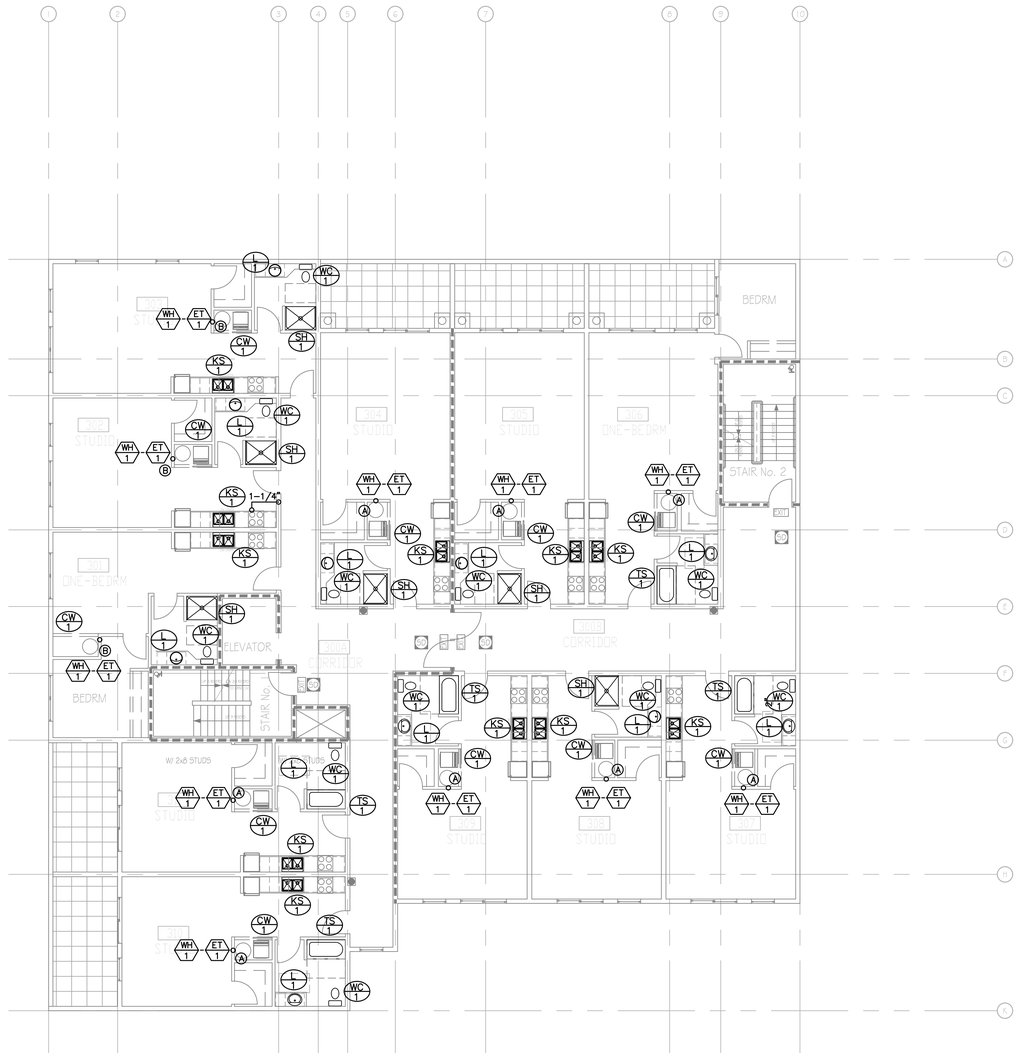
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P-201

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PLUMBING SECOND FLOOR PLAN – WATER
SCALE: 1/8" = 1'-0"



PLUMBING THIRD FLOOR PLAN – WATER
SCALE: 1/8" = 1'-0"

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ANDGAR Mechanical, LLC

STATE CONTRACTORS LICENSE NUMBER.....ANDGAML825N3

JOB#: 820011

PERMIT SET

PLUMBING SECOND & THIRD FLOOR PLANS - WATER

HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

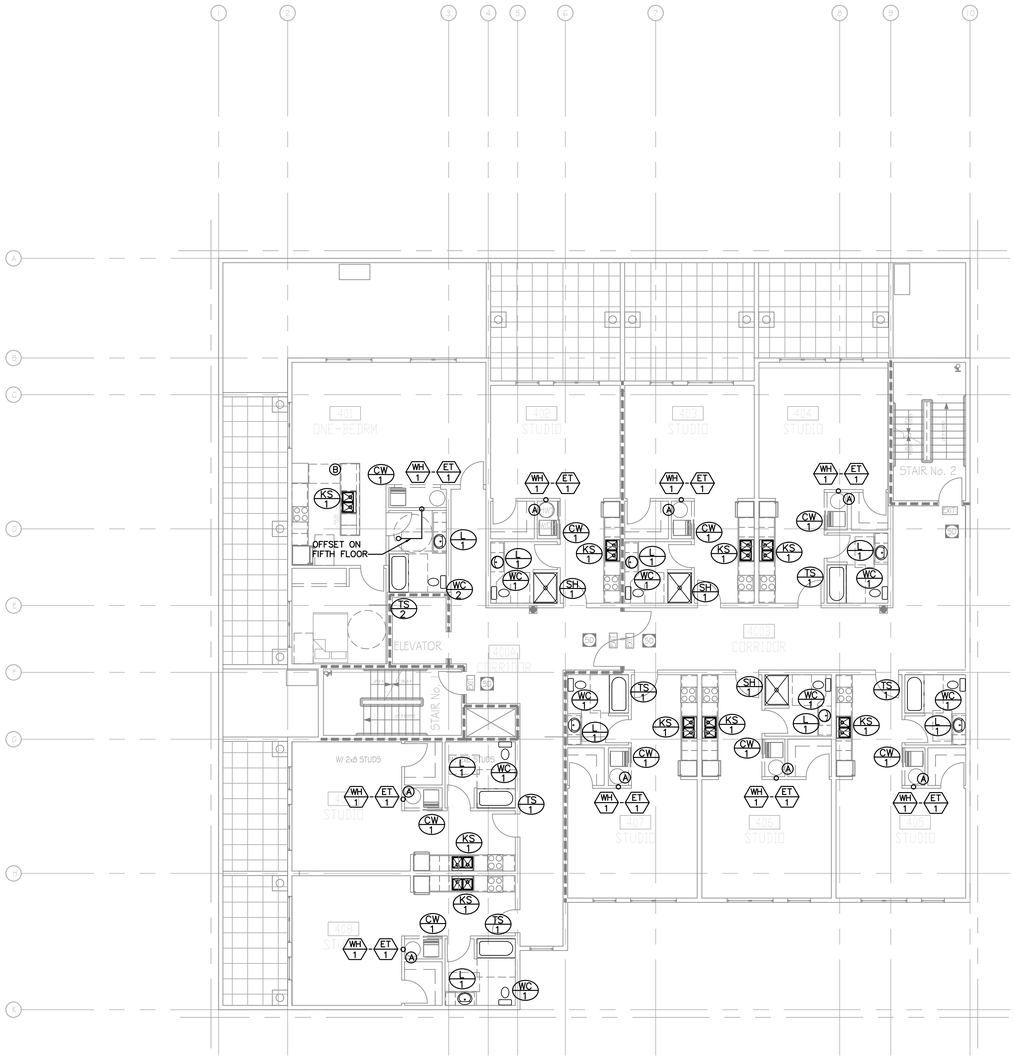
Last Revision Date: 08-19-2020

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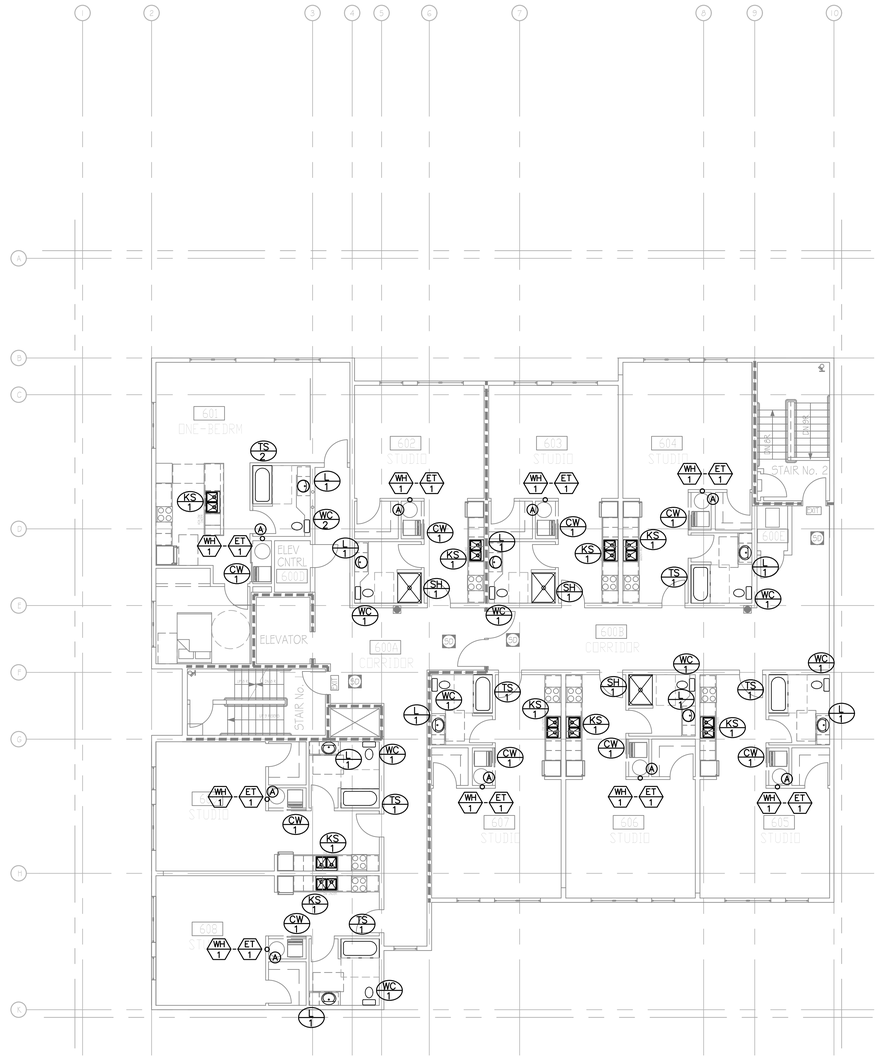
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P-202

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PLUMBING FOURTH & FIFTH FLOOR PLANS – WATER
SCALE: 1/8" = 1'-0"



PLUMBING SIXTH FLOOR PLAN – WATER
SCALE: 1/8" = 1'-0"

REVISIONS

NO.	DATE	DESCRIPTION
1	8-18-2020	BACKCHECK COMMENTS
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ANDGAR Mechanical, LLC

STATE CONTRACTORS LICENSE NUMBER.....ANDGAML825N3

JOB#: 820011

PERMIT SET

PLUMBING FOURTH, FIFTH & SIXTH FLOOR PLANS - WATER

HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

Last Revision Date:
08-19-2020

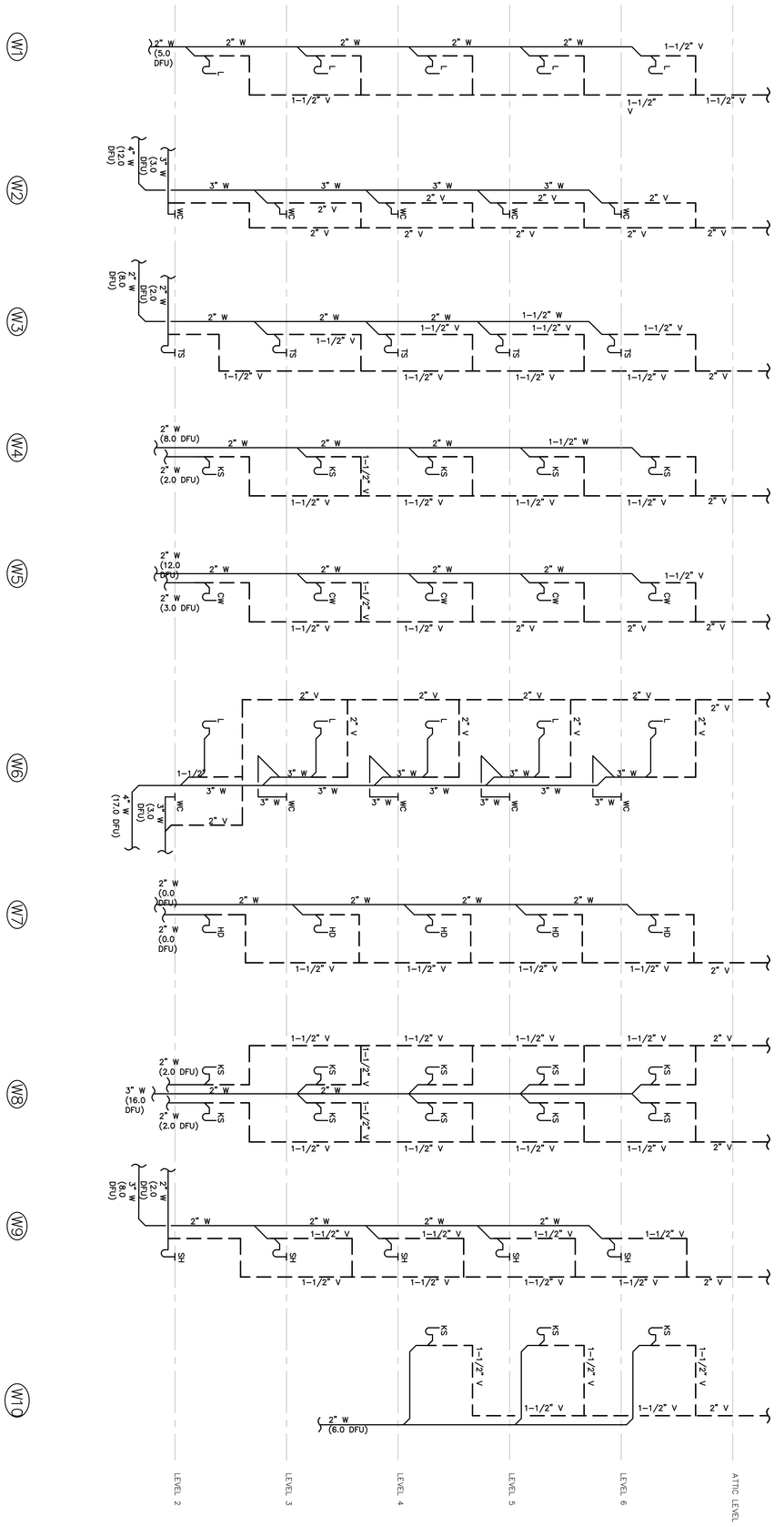
ENGINEERED BY:

DRAWN BY: J.G.

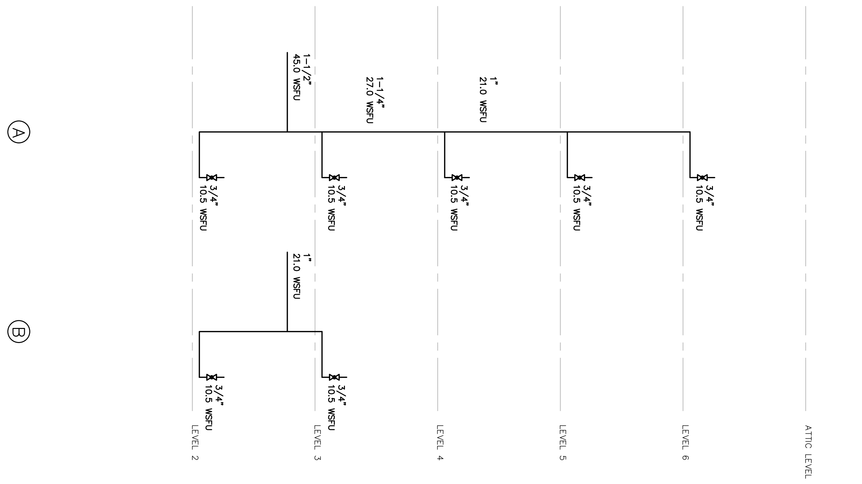
P-203

19 August 2020 8:13 AM r:\mechanical\commercial\current projects\harborside project - 820011\Drawings\cad revit\P-104 Fourth & Fifth Floor Plans.dwg james goertzen

WASTE RISER DIAGRAMS



WATER RISER DIAGRAMS



P-501

ENGINEERED BY:

DRAWN BY: J.G.

Last Revision Date: 08-19-2020

PLUMBING RISER DIAGRAMS

HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

PERMIT SET

ANDGAR Mechanical, LLC™

JOB#: 820011

STATE CONTRACTORS
LICENSE NUMBER.....ANDGAML825N3

REVISIONS

NO.	DATE	DESCRIPTION
1	8-18-2020	BACKCHECK COMMENTS
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ELECTRIC WATER HEATER SCHEDULE

TAG	MAKE	MODEL	TANK CAPACITY (GAL.)	ASME RATED (Y/N)	DESIGN COLD WATER INLET TEMP.	HOT WATER SETPOINT	ENERGY FACTOR	FIRST HOUR RATING	RECOVERY GPH	ELECTRICAL INFORMATION					APPROX. SHIP WT. (LBS)	REMARKS
										NUMBER OF ELEMENTS	KW PER ELEMENT	TOTAL KW	VOLTS/PH	DISCONNECT		
WH-1	BRADFORD WHITE	–	50	N	45°F	120°F	0.92	64.0	21	2	4.5	4.5	240/1	BY E.C.	130	1, 2, 3, 4, 5
WH-2	CHRONOMITE	CM-20L/240	–	–	–	–	–	–	–	–	–	–	–	–	–	–

1: P.C. TO SEISMIC ATTACHMENT TO STRUCTURE WITH SEISMIC STRAP
2: EXPANSION TANK PER SCHEDULE
3: INCLUDES WATER HEATER, 24" DIAMETER PAN WITH 1" PVC DRAIN CONNECTION
4: TERMINATE PRESSURE TEMPERATURE RELIEF VALVE AT HUB DRAIN
5: WATER HEATER ON LEVEL 1 SHALL BE SET IN DRAIN PAN ON STAND, ALL OTHER LEVELS WATER HEATER SHALL BE SET IN PAN ON R-10 RIGID FOAM PAD

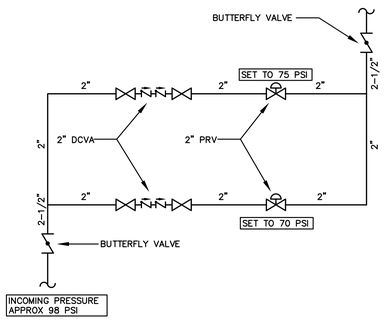
EXPANSION TANK SCHEDULE

TAG	MAKE	MODEL	SYSTEM VOL. (GALS.)	MIN TEMP	MAX TEMP	ACCEPTANCE VOLUME	RELIEF VALVE SETTING	TANK FILL PRESS. (PSIG)	WORKING PRESS. (PSIG)	CONN. SIZE/TYPE	WEIGHT (LBS.)	REMARKS
ET-1	AMTROL	ST-5	2.0	50	140	0.9	150	50	65	3/4" MPT	5	–
–	–	–	–	–	–	–	–	–	–	–	–	–

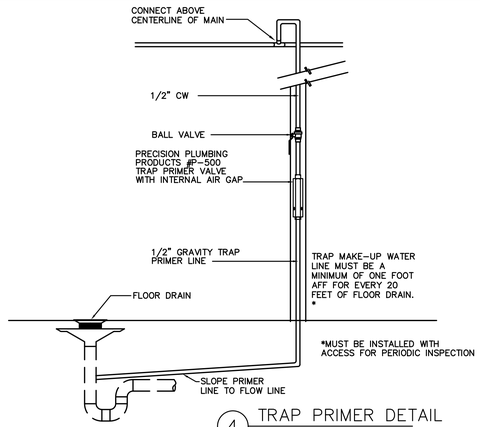
PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE	ITEMS	DESCRIPTION	W	V	CW	HW
WC-1	WATER CLOSET (1.6 GPF)	RECEPTACLE	AMERICAN STANDARD 221DA.004	3"	2"	1/2"	--
		SEAT	BEMIS 70-000				
		VALVE (NON-RATED WALL)	SIOUX CHIEF 696-G1001WF				
		VALVE (RATED WALL)	SIOUX CHIEF 696-RG1001WF				
WC-2 TYPE A ADA	WATER CLOSET (ADA) (1.6 GPF)	RECEPTACLE	AMERICAN STANDARD 221AA.004	3"	2"	1/2"	--
		SEAT	BEMIS 170-000				
		VALVE (NON-RATED WALL)	SIOUX CHIEF 696-G1001WF				
		VALVE (RATED WALL)	SIOUX CHIEF 696-RG1001WF				
L-1	LAVATORY (1.0 GPM)	RECEPTACLE	WESTERN POTTERY L1720-1 WHT	1-1/2"	1-1/2"	1/2"	1/2"
		FAUCET	PEERLESS P1519LF				
		P-TRAP	DEARBORN P9704AB				
		STOPS (NON-RATED WALL)	SIOUX CHIEF 696-G2001WF				
		STOPS (RATED WALL)	SIOUX CHIEF 696-RG2001WF				
		ASSESORIES	PLUMBEREX 350 - TYPE A UNITS ONLY				
L-2	LAVATORY (1.0 GPM)	RECEPTACLE	AMERICAN STANDARD 0321.026	1-1/2"	1-1/2"	1/2"	1/2"
		FAUCET	PEERLESS P1519LF				
		P-TRAP	DEARBORN P9704AB				
		STOPS (NON-RATED WALL)	SIOUX CHIEF 696-G2001WF				
		STOPS (RATED WALL)	SIOUX CHIEF 696-RG2001WF				
		ASSESORIES	PLUMBEREX 350				
KS-1	KITCHEN SINK (1.5 GPM)	RECEPTACLE	ELKAY GE2332LMR2	2"	1-1/2"	1/2"	1/2"
		FAUCET	PEERLESS P6919LF				
		STOPS (NON-RATED WALL)	SIOUX CHIEF 696-G3001WR				
		STOPS (RATED WALL)	SIOUX CHIEF 696-RG3001WR				
		DISHWASHER AIR GAP	PROFLO PFGAPCP CP AIR GAP				
		P - TRAP	DEARBORN P9704AB				
		ASSESORIES	PLUMBEREX 350 - TYPE A UNITS ONLY				
TS-1 TYPE B ADA	COMBINATION TUB SHOWER 1.5 GPM	RECEPTACLE	AQUATIC 2603SGM	1-1/2"	1-1/2"	1/2"	1/2"
		VALVE	DELTA R10000-MF				
		TRIM	PEERLESS PTT14419				
		DRAIN	DEARBORN A9975				
TS-2 TYPE A ADA	COMBINATION TUB SHOWER 1.5 GPM	RECEPTACLE	AQUATIC 2603CTH WITH GRAB BARS	1-1/2"	1-1/2"	1/2"	1/2"
		VALVE	DELTA R10000-MF				
		TRIM	PEERLESS PTT14119				
		SHOWERHEAD	DELTA RPW124HDF				
		DRAIN	DEARBORN A9975 (SEE NOTE 2) ⚠1				
SH-1	1.5 GPM	RECEPTACLE	AQUATIC 1483DS	2"	1-1/2"	1/2"	1/2"
		VALVE	DELTA R10000-MF				
		TRIM	PEERLESS PTT14219				
SH-2	1.5 GPM	RECEPTACLE	AQUATIC 1363BFSD	2"	1-1/2"	1/2"	1/2"
		VALVE	DELTA R10000-MF				
		TRIM	PEERLESS PTT14219				
		SHOWERHEAD	DELTA RPW124HDF				
CW-1	WASHER BOX	VALVE (NON-RATED WALL)	SIOUX CHIEF 696-G2313WF WITH ARRESTER,	2"	1-1/2"	1/2"	1/2"
		VALVE (RATED WALL)	SIOUX CHIEF 696-RG2313WF WITH ARRESTER,				
RD/OD-1	COMBINATION ROOF DRAIN AND OVERFLOW DRAIN	–	WADE 3043	3"	–	–	–
DD-1	DECK DRAIN	–	WADE 3240-2	2"	–	–	–
DD-2	DECK DRAIN	–	WADE 3230-2	2"	–	–	–
GD-1	GARAGE DRAIN	–	WADE 1310-12-4NH	4"	2"	–	–
TD-1	TRENCH DRAIN	–	JAY R SMITH 9930-GHD	4"	2"	–	–
OWS-1	OIL/WATER SEPARATOR	–	MILFAB SUPER-500-O	4"	2"	–	–
OWS-2	OIL/WATER SEPARATOR	–	OLD CASTLE 25-SA	4"	2"	–	–
FD-1	FLOOR DRAIN	–	SIOUX CHIEF 832 SERIES	3"	2"	–	–
ESP-1	ELEVATOR SUMP PUMP	–	ZOELLER N153, PUMP NUMBER: 153-0027 (SEE NOTE 1)	2"	–	–	–

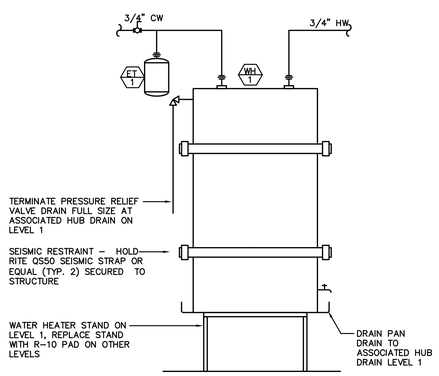
NOTE:
1. ALARM PANEL MODEL: 10-1526, OIL SMART PUMP SWITCH MODEL: 10-1528, DUPLEX ALTERNATIVE PANEL
2. FOR TYPE A UNITS, BATHTUB CONTROLS TO BE POSITIONED PER SECTION 607.5, AND HAND SHOWER PROVIDED PER SECTION 607.6. A117.1 ⚠1



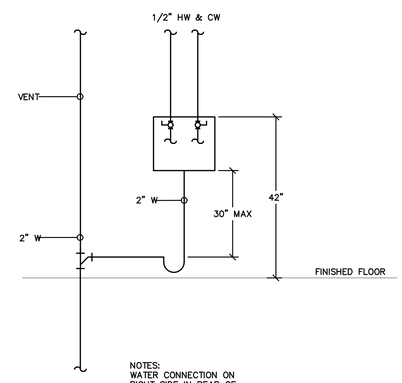
3 MAIN WATER RISER DCVA DETAIL
SCALE: NTS



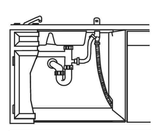
4 TRAP PRIMER DETAIL
SCALE: NTS

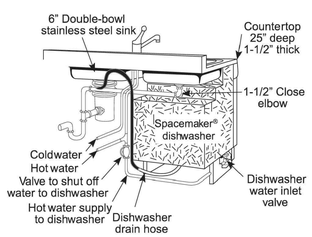


1 WATER HEATER INSTALLATION
SCALE: NTS



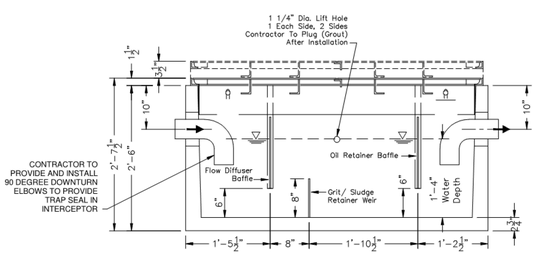
2 WASHING MACHINE BOX
SCALE: NTS


Waste Tee Installation



5 KITCHEN INSTALLATION DETAIL
SCALE: NTS

INTERCEPTOR IS SIZED PER UPC 1017.2 ⚠1



6 OIL WATER SEPARATOR DETAIL
SCALE: NTS

REVISIONS

NO.	DATE	DESCRIPTION
1	8-18-2020	BACKCHECK COMMENTS
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ANDGAR Mechanical, LLC

STATE CONTRACTORS LICENSE NUMBER....ANDGAML825N3

JOB#: 820011

PERMIT SET

PLUMBING SCHEDULES & DETAILS

HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

Last Revision Date: 08-19-2020

ENGINEERED BY:

DRAWN BY: J.G.

P-601

19 August 2020 8:13 AM r:\mechanical\commercial\current projects\harborside project - 820011\Drawing\acad revit\P-501 Riser Diagrams.dwg james goertzen

WASHINGTON STATE ENERGY CODE 2015

C103.6 BUILDING DOCUMENTATION AND CLOSE OUT SUBMITTAL REQUIREMENTS
THE CONSTRUCTION DOCUMENTS SHALL SPECIFY THAT THE DOCUMENTS DESCRIBED IN THIS SECTION BE PROVIDED TO THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT WITHIN 180 DAYS OF THE DATE OF RECEIPT OF THE CERTIFICATE OF OCCUPANCY. THIS IS TO INCLUDE RECORD DOCUMENTS, O&M MANUALS, AND APPLICABLE WSEC COMPLIANCE FORMS AND CALCULATIONS.

C403.2.4.1.2 DEADBAND
WHERE USED TO CONTROL BOTH HEATING AND COOLING, ZONE THERMOSTATIC CONTROLS SHALL BE CONFIGURED TO PROVIDE A TEMPERATURE RANGE OF DEADBAND OF AT LEAST 50°F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM.

C403.2.4.2 OFF-HOUR CONTROLS
FOR ALL OCCUPANCIES OTHER THAN GROUP R, EACH ZONE SHALL BE PROVIDED WITH THERMOSTATIC SETBACK CONTROLS THAT ARE CONTROLLED BY EITHER AN AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM.

C403.2.4.2.1 THERMOSTATIC SETBACK CAPABILITIES
THERMOSTATIC SETBACK CONTROLS SHALL BE CONFIGURED TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 55°F (13°C) OR UP TO 85°F (29°C).

C403.2.4.2.2 AUTOMATIC SETBACK AND SHUTDOWN CAPABILITIES
AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROLS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK AND RETAINING THEIR PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST 10 HOURS. ADDITIONALLY, THE CONTROLS SHALL HAVE A MANUAL OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2 HOURS; A MANUALLY OPERATED TIMER CONFIGURED TO OPERATE THE SYSTEM FOR UP TO 2 HOURS; OR AN OCCUPANCY SENSOR.

C403.2.4.2.3 AUTOMATIC START CAPABILITIES
AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM THE CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY ADJUSTING THE DAILY START TIME OF THE HVAC SYSTEM IN ORDER TO BRING EACH SPACE TO THE DESIRED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

C403.2.4.3 SHUTOFF DAMPERS
OUTDOOR AIR SUPPLY, EXHAUST OPENINGS AND RELIEF OUTLETS AND STAIRWAY AND SHAFT VENTS SHALL BE PROVIDED WITH CLASS I MOTORIZED DAMPERS. RETURN AIR OPENINGS USED FOR AIRSIDE ECONOMIZER OPERATION SHALL BE EQUIPPED WITH CLASS I MOTORIZED DAMPERS. CLASS I DAMPERS SHALL HAVE A MAXIMUM LEAKAGE RATE OF 4 CFM/FT² AT 1.0 INCH WATER GAUGE WHEN TESTED IN ACCORDANCE WITH AMCA 500D AND SHALL BE LABELED BY AN APPROVED AGENCY FOR SUCH PURPOSE.

C403.2.8 DUCT AND PLENUM INSULATION AND SEALING

C403.2.8.1
DUCTS, SHAFTS AND PLENUMS CONVEYING OUTSIDE AIR FROM THE EXTERIOR OF THE BUILDING TO THE MECHANICAL SYSTEM SHALL MEET ALL AIR LEAKAGE AND BUILDING ENVELOPE INSULATION REQUIREMENTS OF SECTION C402, PLUS BUILDING ENVELOPE VAPOR CONTROL REQUIREMENTS FROM THE INTERNATIONAL MECHANICAL CODE, EXTENDING CONTINUOUSLY FROM THE BUILDING EXTERIOR TO AN AUTOMATIC SHUTOFF DAMPER OR HEATING OR COOLING EQUIPMENT.

C403.2.8.2
ALL OTHER SUPPLY AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH A MINIMUM OF R-6 INSULATION WHERE LOCATED IN UNCONDITIONED SPACES AND WHERE LOCATED OUTSIDE THE BUILDING WITH A MINIMUM OF R-8 INSULATION IN CLIMATE ZONE 4 AND R-12 INSULATION IN CLIMATE ZONE 5. WHERE LOCATED WITHIN A BUILDING ENVELOPE ASSEMBLY, THE DUCT OR PLENUM SHALL BE SEPARATED FROM THE BUILDING EXTERIOR OR UNCONDITIONED OR EXEMPT SPACES BY MINIMUM INSULATION VALUE AS REQUIRED FOR EXTERIOR WALLS BY SECTION C402.1.3.

EXCEPTIONS: 1. WHERE LOCATED WITHIN EQUIPMENT.
2. WHERE THE DESIGN TEMPERATURE DIFFERENCE BETWEEN THE INTERIOR AND EXTERIOR OF THE DUCT OR PLENUM DOES NOT EXCEED 15°F (8°C).

WHERE LOCATED WITHIN CONDITIONED SPACE, SUPPLY DUCTS WHICH CONVEY SUPPLY AIR AT TEMPERATURES LESS THAN 55°F OR GREATER THAN 105°F SHALL BE INSULATED WITH A MINIMUM OF R-3.3 INSULATION.

EXCEPTION: DUCTWORK EXPOSED TO VIEW WITHIN A ZONE THAT SERVES THAT ZONE IS NOT REQUIRED TO BE INSULATED.

ALL DUCTS, AIR HANDLER, AND FILTER BOXES SHALL BE SEALED. JOINTS AND SEAMS SHALL COMPLY WITH SECTION 603.9 OF THE INTERNATIONAL MECHANICAL CODE.

C403.2.8.3 DUCT CONSTRUCTION
DUCTWORK SHALL BE CONSTRUCTED AND ERECTED IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE.

C403.2.10 MECHANICAL SYSTEMS COMMISSIONING AND COMPLETION REQUIREMENTS
MECHANICAL SYSTEMS SHALL BE COMMISSIONED AND COMPLETED IN ACCORDANCE WITH SECTION C408.

SHEET METAL NOTES

1. DUCT SIZES INDICATED ON THE DRAWINGS ARE INSIDE DIMENSIONS. DUCT SIZE SHALL BE INCREASED TO COMPENSATE FOR ACOUSTICAL DUCT LINER THICKNESS.
2. DUCT ELBOWS SHALL BE RADIUS TYPE WITH FULL WIDTH THROAT RADIUS ON ALL PRIMARY DUCT WORK, UNLESS SHOWN OTHERWISE. TURNING VANE ELBOWS SHALL HAVE DOUBLE THICKNESS TURNING VANES INSTALLED IN EVERY RAIL TAB.
3. EXHAUST DUCTWORK SHALL BE UNLINED GALVANIZED SHEET METAL (UNLESS OTHERWISE INDICATED). ELBOWS SHALL BE CONSTRUCTED WITH A MINIMUM CENTERLINE RADIUS TO DUCT DIAMETER OF 1.0. DUCT SHALL BE UNINSULATED UNLESS OTHERWISE INDICATED. DRYER EXHAUST DUCT SHALL NOT BE JOINED WITH SCREWS OR OTHER FASTENERS THAT PROTRUDE MORE THEN 1/8" INTO THE INSIDE OF THE DUCT. FABRICATE AND SEAL EXHAUST DUCTWORK PER SMACNA 1/2" PRESSURE CLASS
4. ALL DUCTWORK SHALL BE SEALED WITH WATER BASED LATEX SEALANT PER WSEC AND SMACNA PRESSURE AND SEAL CLASSIFICATION BELOW:

STATIC PRESSURE CONSTRUCTION CLASS	SEAL CLASS	SEALING REQUIREMENTS
1/2" – 2" wg	C	TRANSVERSE JOINTS ONLY
3" wg	B	TRANSVERSE JOINTS AND
LONGITUDINAL SEAMS		
4" – 10" wg	A	ALL JOINTS, SEAMS, AND WALL
PENETRATIONS		

5. THROUGH PENETRATION AND MEMBRANE PENETRATION FIRE STOP AS REQUIRED IN THE IBC SHALL BE PROVIDED AND INSTALLED BY THE MECHANICAL CONTRACTOR. FIRE STOP SYSTEM SHALL BE HILTI CP 601 S OR 3M BRAND FIRE BARRIER SEALANT IC 15WB+ OR APPROVED EQUIVALENT.
6. ACCESSORIES:

ACUSTICAL LINER INDOORS:
1" THICK, FIBERGLASS DUCTLINER WITH BLACK MAT FACING. JOHNS MANVILLE, LINACOUSTIC RC.
(MINIMUM INSTALLED R-VALUE TO BE PER WSEC)

ACOUSTICAL LINER OUTDOORS: 2" THICK, FIBERGLASS DUCTLINER WITH BLACK MAT FACING. JOHNS MANVILLE, LINACOUSTIC RC. (MINIMUM INSTALLED R-VALUE TO BE PER WSEC)

LOW PRESSURE INSULATED FLEX DUCT: HART & COOLEY F-114, JPL PR-25, OR EQUAL.

UNINSULATED VAPOR PROOF FLEX DUCT: THERMAFLEX S-LP.

DUCT INSULATION (INDOORS): REFLECTIX R-4.2 DUCT INSULATION

DUCT INSULATION (OUTDOORS): RELECTIX R-8.0 DUCT INSULATION

GENERAL NOTES

1. ALL TRADES TO LEAVE 30" OR 42" CLEARANCE IN FRONT OF MECHANICAL EQUIPMENT ACCESS PANELS FOR SERVICING, PER NEC REQUIREMENTS.
2. ALL CRANE LIFTING AND SETTING OF EQUIPMENT & DUCTWORK ETC. TO BE PERFORMED BY MECHANICAL CONTRACTOR. EQUIPMENT REQUIRES SPECIFIC RIGGING TO PREVENT DAMAGE. SEE EQUIPMENT SUBMITTALS FOR LIFTING INSTRUCTIONS.
3. GENERAL CONTRACTOR IS RESPONSIBLE FOR TEMPORARY HEAT DURING CONSTRUCTION. HEATING UNITS SHALL NOT BE USED FOR TEMPORARY HEAT WITHOUT PROTECTION FROM DUST ACCUMULATION, WRITTEN ACCEPTANCE OF DUST RELATED WARRANTY COSTS, AND PRIOR APPROVAL BY THE MECHANICAL ENGINEER.
4. GENERAL CONTRACTOR SHALL FURNISH ALL ACCESS PANELS. MOST ACCESS PANELS WILL BE COORDINATED WITH ARCHITECT. SOME OR ALL ACCESS PANELS MAY NOT APPEAR ON THE ARCHITECTURAL DRAWINGS. ARCHITECT SHALL DETERMINE WHICH ACCESS PANELS REQUIRE FIRE RATING.
5. UNIT WEIGHTS AND LOCATIONS HAVE BEEN COORDINATED WITH ARCHITECT AND STRUCTURAL ENGINEER TO DETERMINE BUILDING STRUCTURAL ADEQUACY. IF IT IS NECESSARY TO RELOCATE A UNIT, NOTIFY ANDGAR'S ENGINEERING DEPARTMENT FOR RE-COORDINATION.

REFRIGERANT PIPING NOTES

1. REFRIGERANT PIPING SHALL CONSISTION OF ACR TYPE L COPPER TUBING WITH LONG RADIUS WROUGHT COPPER FITTINGS
2. PURGE REFRIGERANT TUBING WITH NITROGEN GAS WHILE BRAZING WITH MINIMUM 6% SILVER BRZING ROD
3. PRIOR TO CHARGING SYSTEM WITH REFRIGERANT, PIPING SYSTEM SHALL BE PRESSURE TESTED AND AND EVACUATED TO A VACUUM OF 500 MICRONS FOR A MINIMUM OF 30 MINUTE PERIOD
4. INSULATE ALL REFRIGERANT LINES TO MEET THE WASHINGTON STATE ENERGY CODE REQUIREMENTS. ALL EXTERIOR INSULATION SHALL BE UV RATED OR COVERED WITH UV PROTECTANT BARRIER

FIRE ALARM NOTES

1. FIRE ALARM SYSTEM WILL BE DESIGNED AND SUBMITTED AS A DEFERRED SUBMITTAL BY THE FIRE ALARM SUBCONTRACTOR. SYSTEM SHALL INCLUDE THE FOLLOWING:
   a. CONTROL WIRING AND POWER WIRING SHALL COMPLY WITH IBC 909.20.6.1
   b. DETECTION AND CONTROLS SYSTEMS SERVING STAIRWAY PRESSURIZATION SYSTEMS ARE TO BE CLEARLY MARKED AT ALL JUNCTIONS, ACCESSES AND TERMINATIONS PER IBC 909.14
   c. THE DETECTION AND CONTROL SYSTEM FOR STAIRWAY PRESSURIZATION SHALL COMPLY WITH IBC 909.12, TO INLCUDE A PREPROGRAMMED WEEKLY TEST PER IBC 909.12.1, WIRING IN FULLY ENCLOSED RACEWAYS PER IBC 909.12.2, AND CONTROL SEQUENCES PER IBC 909.12.4
2. PROVIDE SPECIAL INSPECTION OF THE STAIRWELL PRESSURIZATION SYSTEM PER IBC 909.3 AND 909.18.

NOTE: Deferred submittal of portions of the **stairway pressurization system** required per IBC 504.4.1 for the five stories of Type VA construction is at the permit holder's risk. It is the permit holder's responsibility to coordinate all disciplines and provide any changes to construction drawings for each applicable permit as necessary.

HVAC LEGENDS

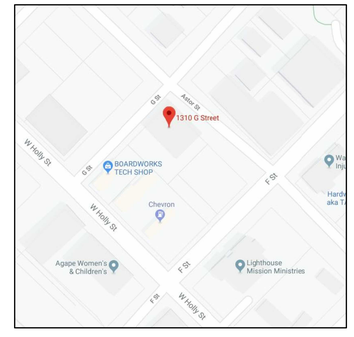
- DUCT DOWN POSITIVE PRESSURE
- DUCT UP POSITIVE PRESSURE
- DUCT DOWN NEGATIVE PRESSURE
- DUCT UP NEGATIVE PRESSURE
- DUCT UNDER POSITIVE PRESSURE
- DUCT UNDER NEGATIVE PRESSURE
- TURNING VANES
- XX / Y-Z — EQUIPMENT IDENTIFICATION
- T — THERMOSTAT
- TC — TIME CLOCK
- S — SENSOR
- SUPPLY AIR ARROW
- RETURN AIR ARROW
- MANUAL VOLUME DAMPER
- MOTORIZED DAMPER
- BDD — BACK DRAFT DAMPER
- SD — SMOKE DETECTOR
- FIRE DAMPER (1-1/2 HOUR) OUT OF AIRSTREAM RUSKIN MODEL DIB2 STYLE B, VERTICAL MOUNT
- FIRE DAMPER (1-1/2 HOUR) OUT OF AIRSTREAM RUSKIN MODEL DIB2 STYLE B, HORIZONTAL MOUNT
- 3 HR — FIRE DAMPER (3 HOUR) OUT OF AIRSTREAM RUSKIN MODEL DIB2 STYLE B, VERTICAL MOUNT
- 3 HR — FIRE DAMPER (3 HOUR) OUT OF AIRSTREAM RUSKIN MODEL DIB2 STYLE B, HORIZONTAL MOUNT
- BACK DRAFT DAMPER RUSKIN MODEL BD2/A1, LOCAL VELOCITY < 1500 FPM
- BACK DRAFT DAMPER RUSKIN MODEL BD2/A2, LOCAL VELOCITY < 2500 FPM
- SMOKE DAMPER
- COMBINATION SMOKE AND FIRE DAMPER
- 12"x12"/SL — INDICATES 14" x 14" O.D. SHEETMETAL WITH 1" SOUNDLINER (U.N.O.), 12" x 12" NET ID
- 12"x12"/2"SL — INDICATES 16" x 16" O.D. SHEETMETAL WITH 2" SOUNDLINER (U.N.O.), 12" x 12" NET ID
- 12"x12" — INDICATES UNLINED 12" x 12" SM DUCT
- 12"x12"/W — INDICATES UNLINED 12" x 12" SM DUCT WITH INSULATED WRAP
- FLEXIBLE DUCT
- 24"ø — INDICATES ROUND DUCT
- 10"ø — SPIN-IN TAKE-OFF & VOLUME DAMPER WITH RIGID ROUND SM DUCT
- R — D — RISE OR DROP IN DIRECTION OF FLOW

HVAC ABBREVIATIONS

% P.G.	PERCENT PROPYLENE GLYCOL	HP	HORSEPOWER
/CW	CERAMIC WRAP	HWR	HEATING WATER RETURN
/PERF	WITH INTERIOR PERFORATED METAL LINER	HWS	HEATING WATER SUPPLY
/SL	SOUND/ACUSTICAL LINED	ID	INSIDE DIMENSION
/W	WRAPPED (INSULATED) DUCT	INSUL.	INSULATION
AFF	ABOVE FINISHED FLOOR	KW	KILOWATT
APP	ACCESS PANEL	LAT	LEAVING AIR TEMPERAURE
BDD	BACKDRAFT DAMPER	LPG	LIQUIFIED PROPANE
BHP	BRAKE HORSE POWER	LWT	LEAVING AIR TEMPERATURE
BOD	BOTTOM OF DUCT	M	MEZZANINE
BOU	BOTTOM OF UNIT	MBH	THOUSANDS BTU PER HOUR
BTU	BRITISH THERMAL UNIT	MCA	MINIMUM CIRCUIT AMPANCITY
C.C.	CONTROL CONTRATOR	MHP	MOTOR HORSEPOWER
CBBDD	COUNTER BALANCE BACKDRAFT DAMPER	MOP	MAXIMUM OVER-CURRENT PROTECTION
CFM	CUBIC FEET PER MINUTE	NA, N/A	NOT APPLICABLE
CO	CARBON MONOXIDE	NC	NORMALLY CLOSED
HWR	CHILLED WATER RETURN	NIC	NOT IN CONTRACT
CHWS	CHILLED WATER SUPPLY	NO	NORMALLY OPEN
CKTS	CIRCUITS	NOM	NOMINAL
CLG	CEILING	NTS	NOT TO SCLAE
COP	COEFFICENT OF PERFORMACE	OA	OUTSIDE AIR
D	DOWN	OBD	OPPOSED BLADE DAMPER
DB	DRY BUILB	OSA	OUTSIDE AIR
DIA	DIAMETER	P.G.	PROPYLENE GLYCOL
DN	DOWN	PH	PHASE
DP	DIFFERENTIAL PRESSURE	POC	POINT OF CONNECITON
E.C.	ELECTRICAL CONTRACTOR	P/T	PRESSURE TEMPERATURE PORT
EA	EACH / EXHAUST AIR	PRESS	PRESSURE
EAT	ENTERING AIR TEMPERATURE	PRV	PRESSURE REDUCING VALVE
EER	ENERGY EFFICEINCY RATIO	PSI	POUNDS PER SQUARE INCH
ESP	EXTERNAL STATIC PRESSURE	PSIG	POUNDS PER SQUARE INCH GAUGE
EWT	ENTERING WATER TEMPERATURE	R	RISE
F.P.I.	FINS PER INCH	RA	RETURN AIR
FC	FLEX CONNECTOR	RM	ROOM
FD	FIRE DAMPER	RPM	REVOLUTIONS PER MINUTE
FFE	FINISHED FLOOR ELEVATION	SA	SUPPLY AIR
FLA	FULL LOAD AMPERAGE	SF	SQUARE FOOT
FOB	FLAT ON BOTTOM	SD	SMOKE DETECTOR
FOT	FLAT ON TOP	SEER	SEASONAL ENERGY EFFICIENCY RATIO
G.C.	GENERAL CONTRACTOR	TBD	TO BE DETERIMED
G	NATURAL GAS	SP	STATIC PRESSURE
GPM	GALLONS PER MINUTE	T-STAT	THERMOSTAT
GYP.	GYPSUM (SHEETROCK)	TSP	TOTAL STATIC PRESSURE
		TYP.	TYPICAL

SHEET INDEX

SHEET NUMBER	SHEET TITLE	REV: PERMIT DATE: 08-17-2020				
M-000	HVAC NOTES & ABBREVIATIONS	•				
M-101	HVAC BASEMENT & GROUND PLANS	•				
M-102	HVAC SECOND & THIRD FLOOR PLANS	•				
M-103	HVAC FOURTH & FIFTH FLOOR PLANS	•				
M-104	HVAC SIXTH FLOOR AND ROOF PLANS	•				
M-501	HVAC DETAILS	•				
M-601	HVAC SCHEDULES	•				
	TOTAL	7	0			



VICINITY PLAN
SCALE: NTS

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1	8-31-2020	CITY BACKCHECK COMMENTS
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ANDGAR Mechanical, LLC
STATE CONTRACTORS LICENSE NUMBER....ANDGAML825N3
JOB#: 320XXX

RODNEY R BOGARD — REGISTERED PROFESSIONAL ENGINEER — 10881 — STATE OF WASHINGTON
BOGARD ENGINEERS PS
Mechanical Engineering Consultants
22121 17th Avenue SE, Suite 111
Bothell, Washington 98021

PERMIT SET

HVAC NOTES, ABBRE., & SITE PLAN

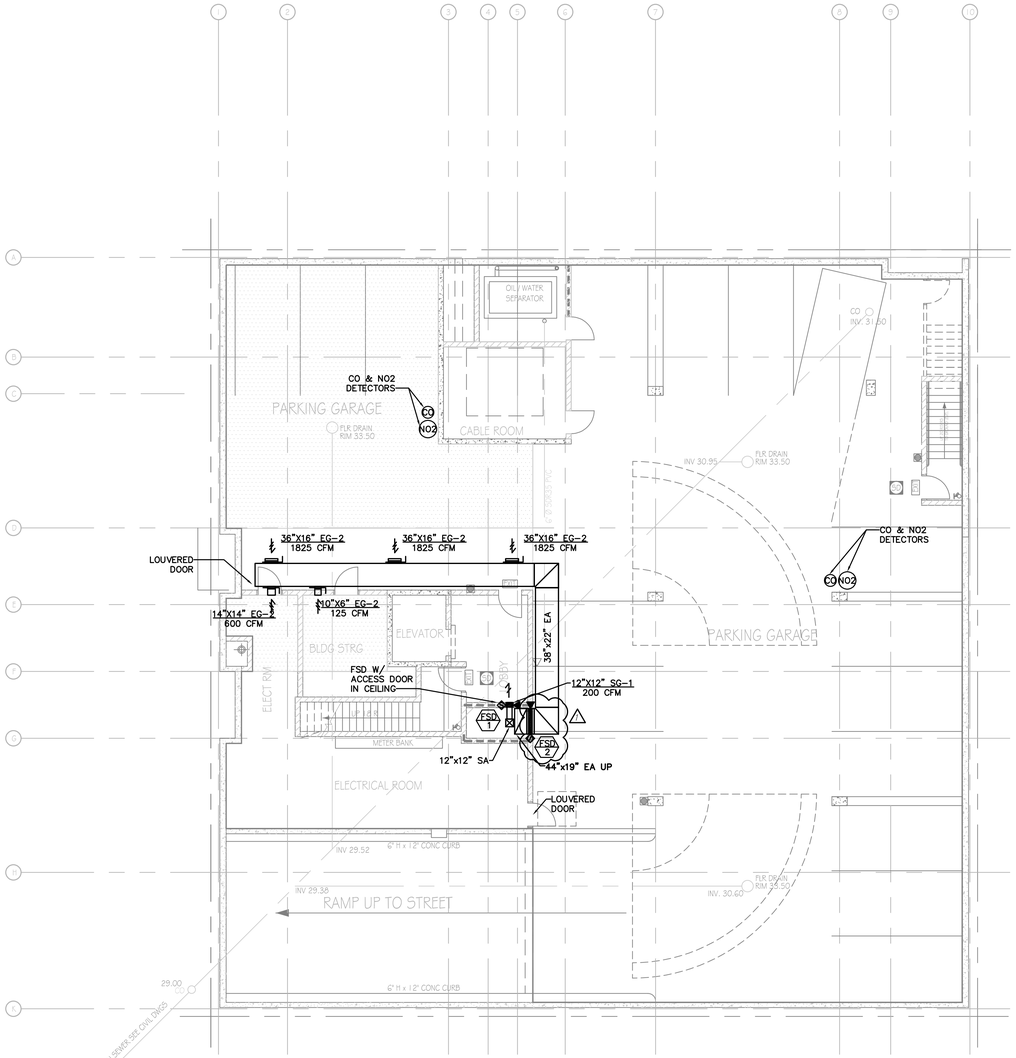
HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

Last Revision Date: 08-31-2020

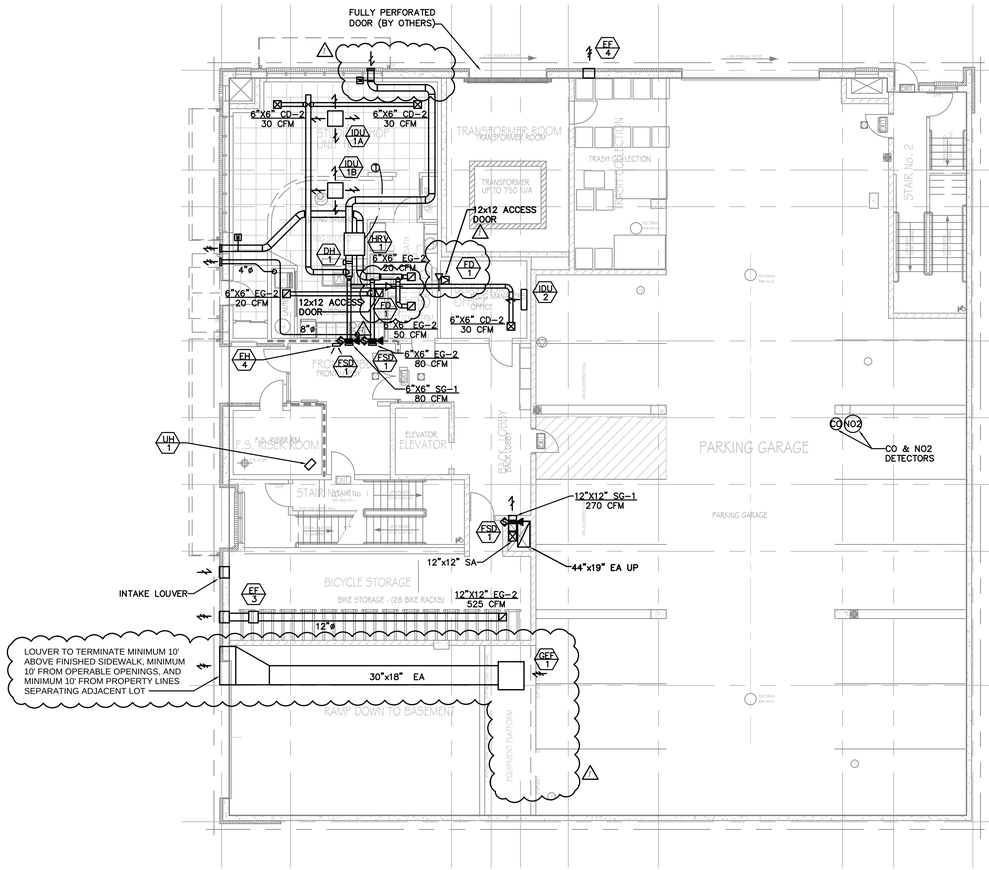
ENGINEERED BY:
DRAWN BY: J.G.

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jamesgoertzen



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



1ST FLOOR, GROUND FLOOR HVAC PLAN
SCALE: 1/8" = 1'-0"

REVISIONS

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ANDGAR™ Mechanical, LLC

STATE CONTRACTORS LICENSE NUMBER.....ANDGAML825N3

JOB#: 320XXX

REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 41061 — ROBERT J. BOGARD

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Mechanical Engineering Consultants
29121 - 17th Avenue SE, Suite 111
Bothell, Washington 98021

PERMIT SET

BASEMENT HVAC PLAN & 1ST FLOOR, GROUND FLOOR HVAC PLAN

HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

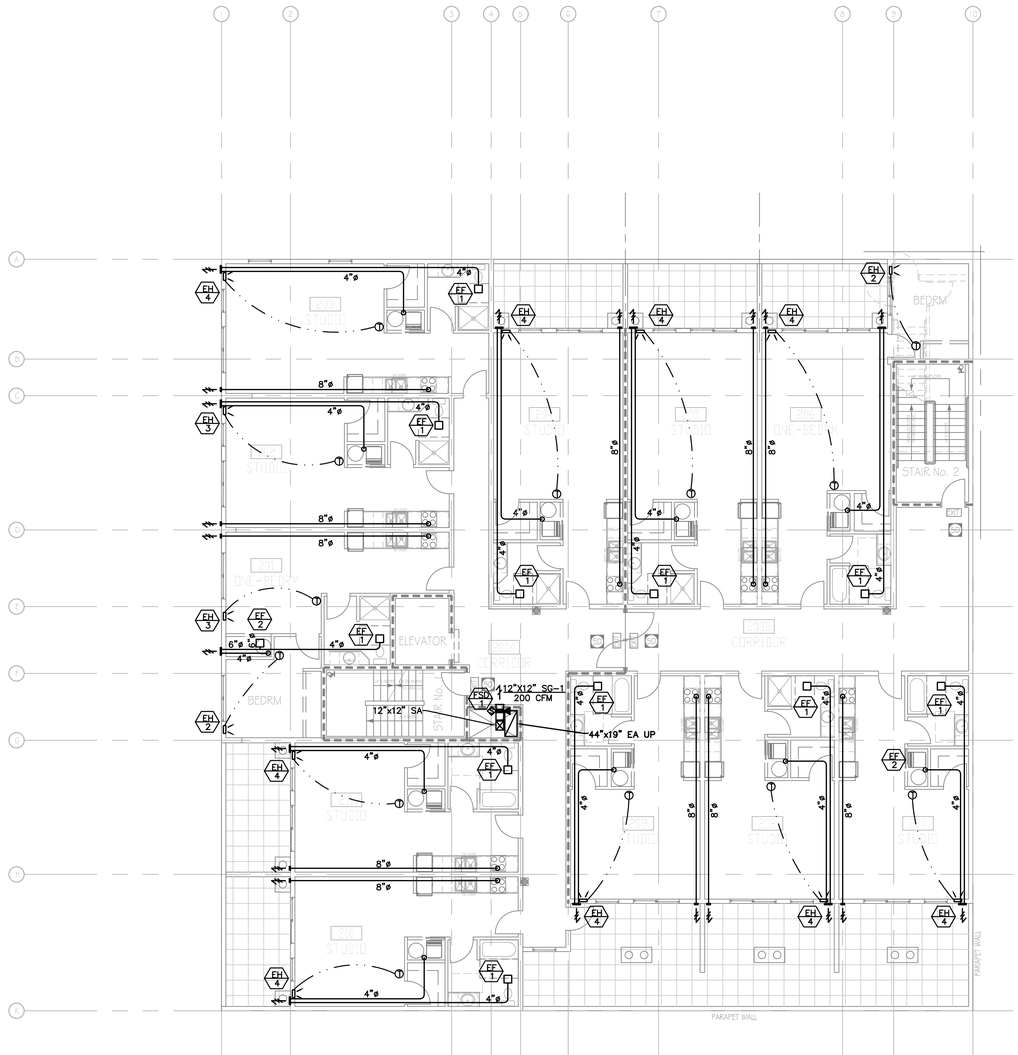
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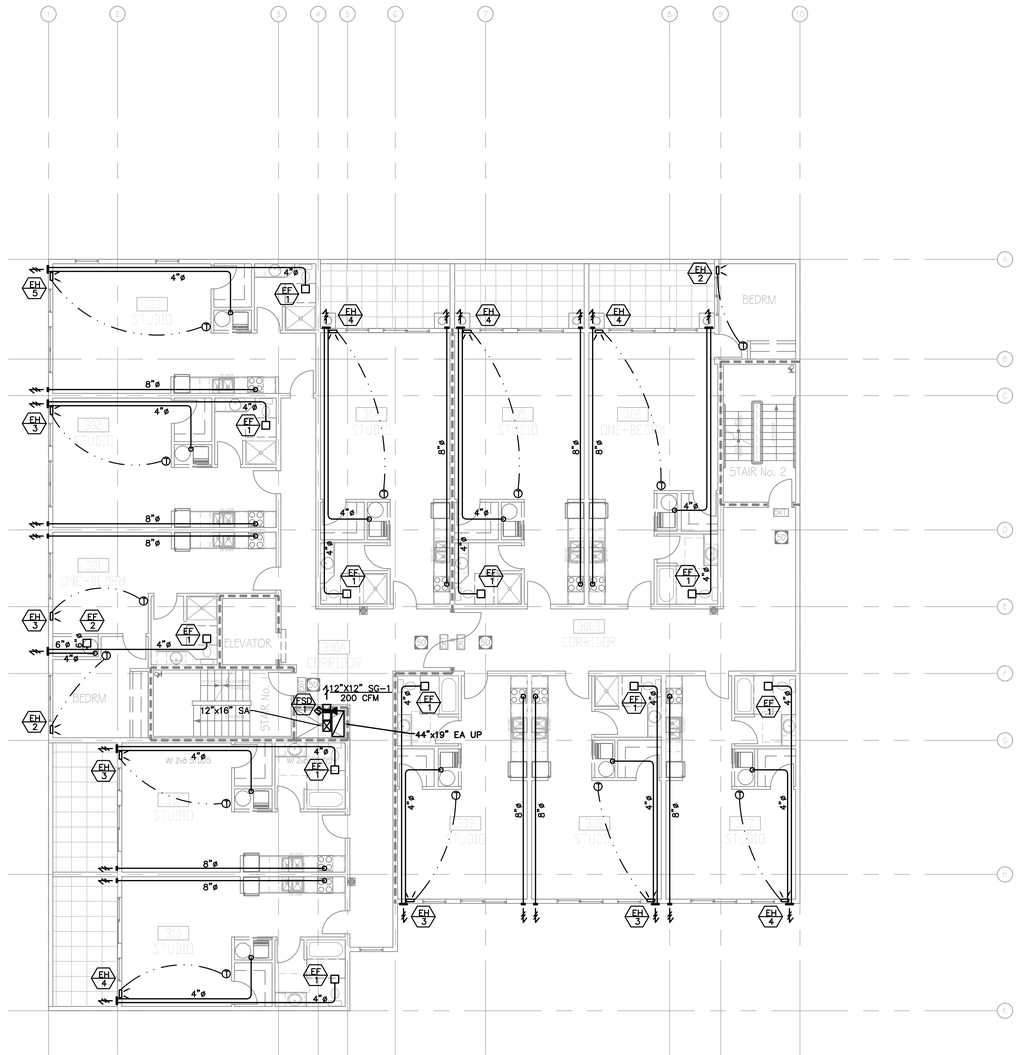
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2ND FLOOR HVAC PLAN
SCALE: 1/8" = 1'-0"



3RD FLOOR HVAC PLAN
SCALE: 1/8" = 1'-0"

NOTE:
VENTILATION DUCT ROUTING TO BE SOFFITED BELOW FIRE-RESISTANT RATED FLOOR/CEILING ASSEMBLIES, TYPICAL OF ALL

LAUNDRY AREAS NOT PROVIDED WITH LOCAL EXHAUST SHALL HAVE LOUVERED DOOR COMMUNICATING WITH KITCHEN FOR VENTILATION, TYPICAL OF ALL

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ANDGAR Mechanical, LLC

STATE CONTRACTORS LICENSE NUMBER.....ANDGAML825N3

JOB#: 320XXX

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Mechanical Engineering Consultants
22121 17th Avenue SE, Suite 111
Bothell, Washington 98021

PERMIT SET

2ND & 3RD FLOOR HVAC PLANS

HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

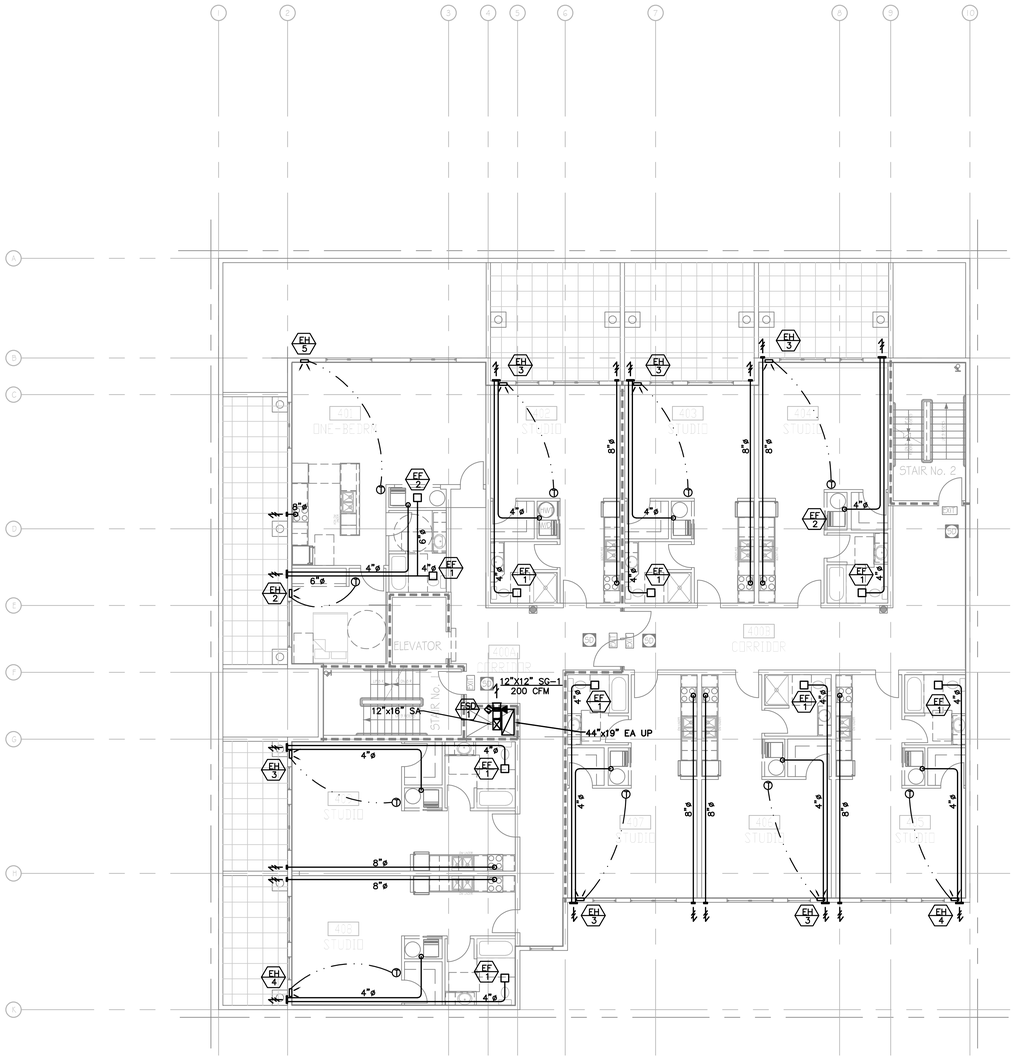
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08-31-2020

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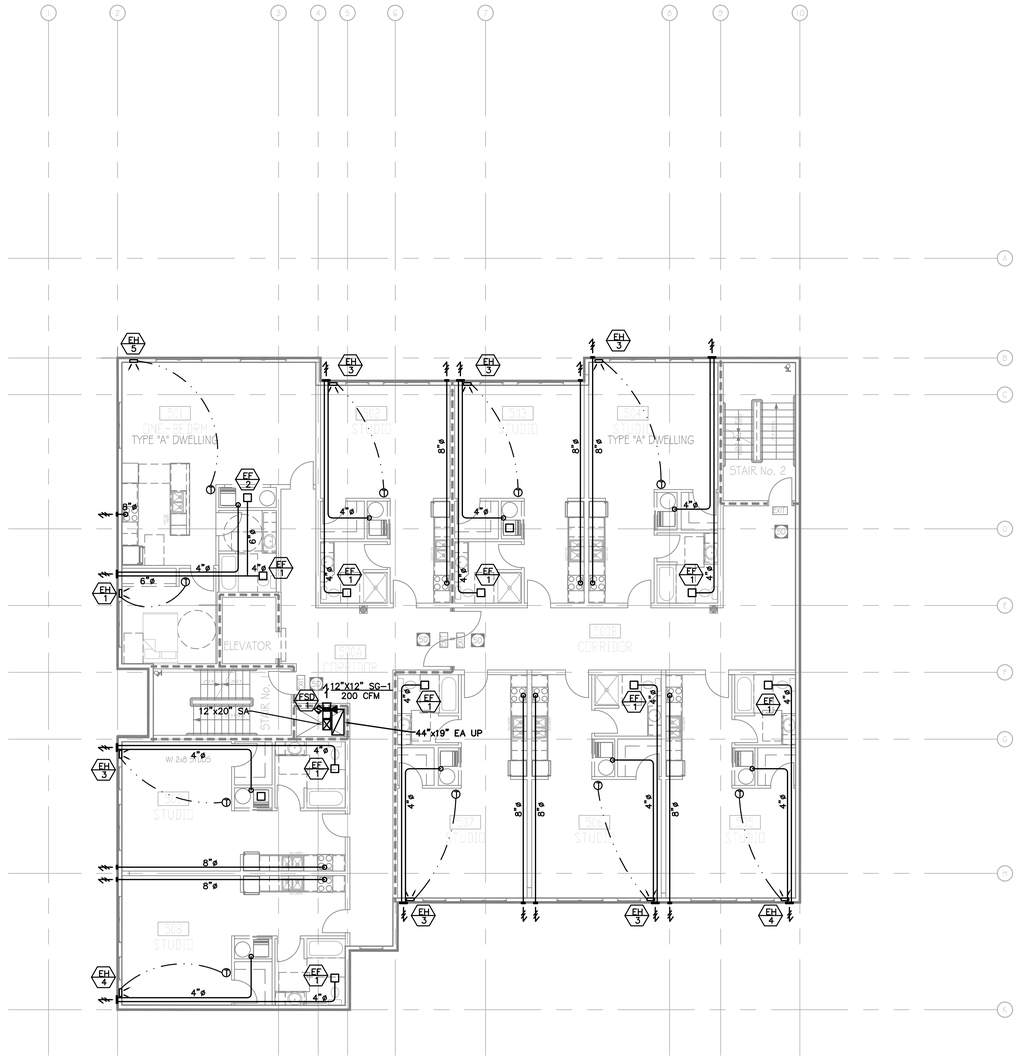
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M-102

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4TH FLOOR HVAC PLAN
SCALE: 1/8" = 1'-0"



5TH FLOOR HVAC PLAN
SCALE: 1/8" = 1'-0"

NOTE:
VENTILATION DUCT ROUTING TO BE SOFFITED BELOW FIRE-RESISTANT RATED FLOOR/CEILING ASSEMBLIES, TYPICAL OF ALL

LAUNDRY AREAS NOT PROVIDED WITH LOCAL EXHAUST SHALL HAVE LOUVERED DOOR COMMUNICATING WITH KITCHEN FOR VENTILATION, TYPICAL OF ALL

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22121 17th Avenue SE, Suite 111
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4TH & 5TH FLOOR HVAC PLANS

HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

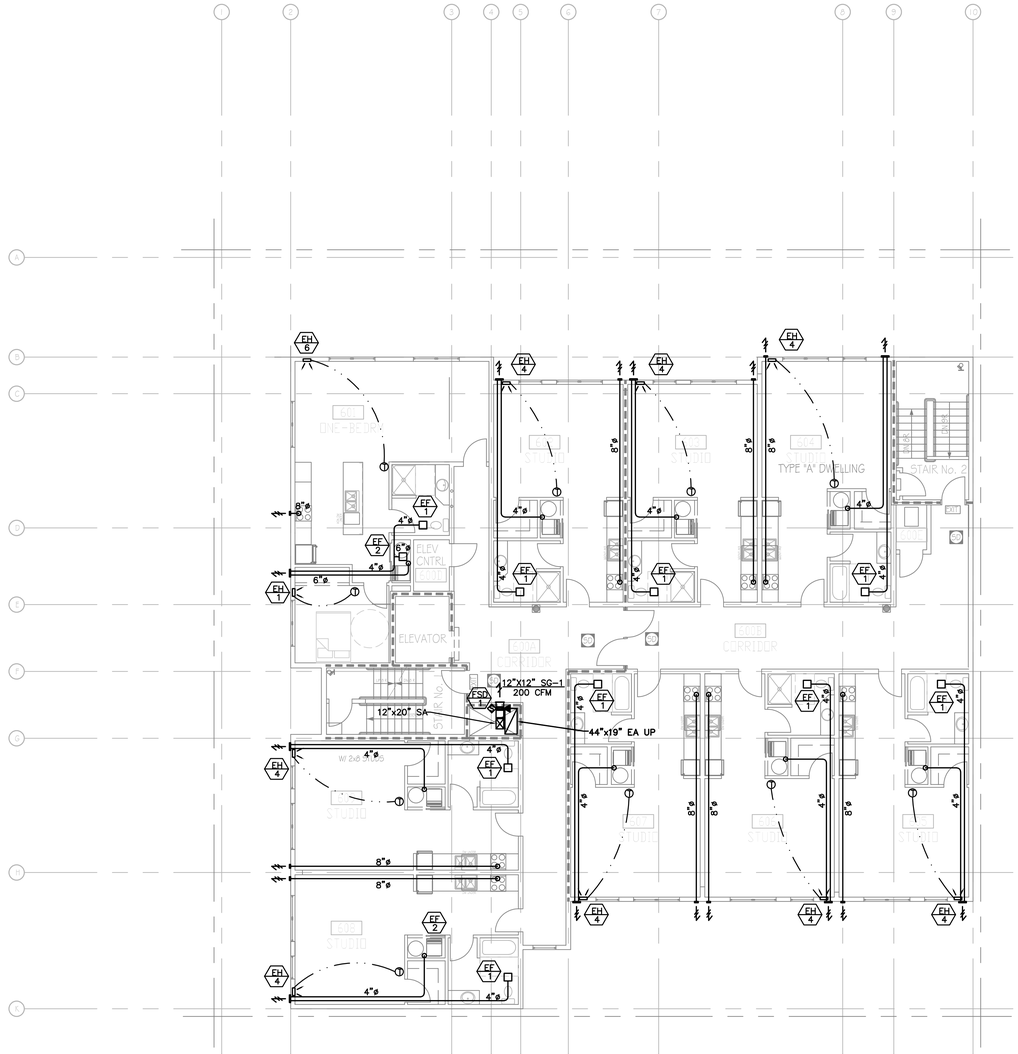
Last Revision Date:
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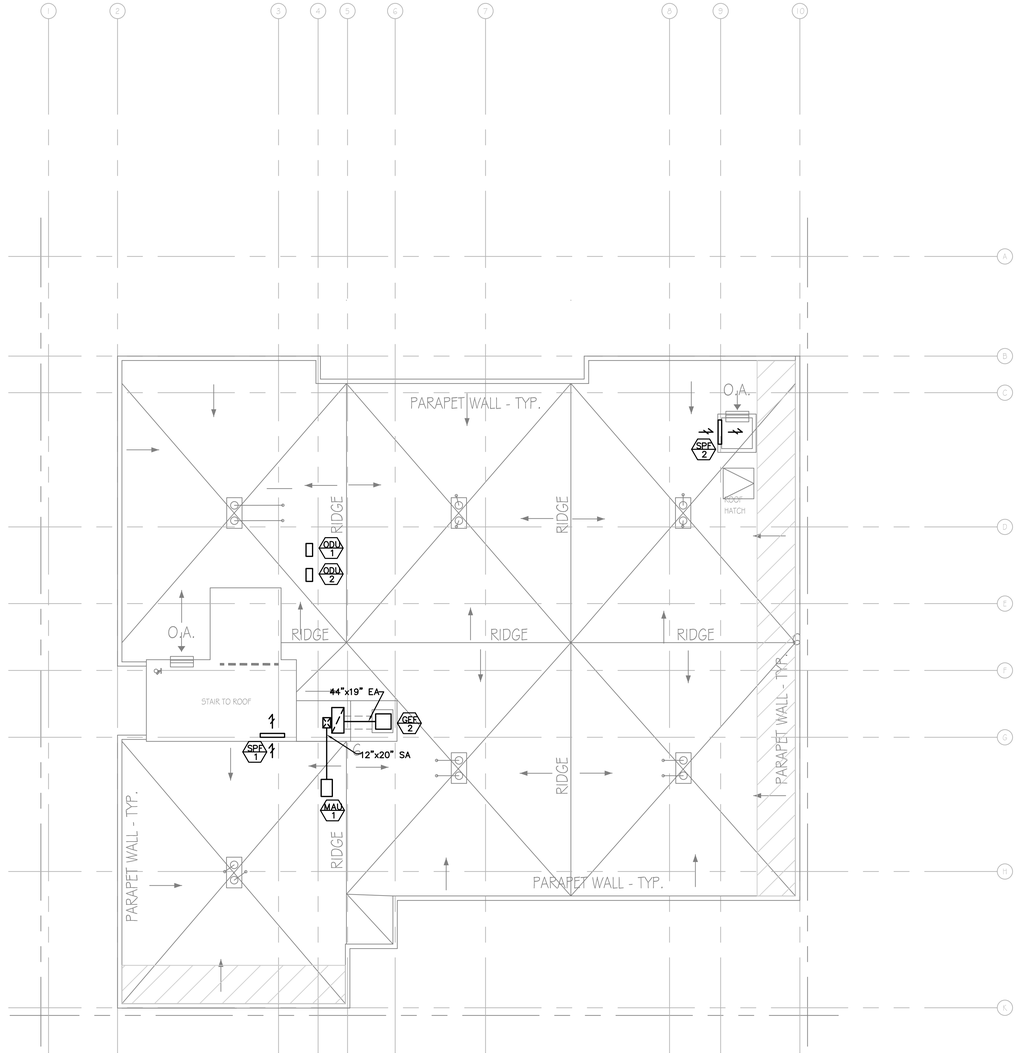
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M-103

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6TH FLOOR HVAC PLAN
SCALE: 1/8" = 1'-0"



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

NOTE:
VENTILATION DUCT ROUTING TO BE SOFFITED BELOW FIRE-RESISTANT RATED FLOOR/CEILING ASSEMBLIES, TYPICAL OF ALL

LAUNDRY AREAS NOT PROVIDED WITH LOCAL EXHAUST SHALL HAVE LOUVERED DOOR COMMUNICATING WITH KITCHEN FOR VENTILATION, TYPICAL OF ALL

REVISIONS

NO.	DATE	DESCRIPTION
1	8-31-2020	CITY BACKCHECK COMMENTS
2		
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ANDGAR Mechanical, LLC

STATE CONTRACTORS LICENSE NUMBER.....ANDGAML825N3

JOB#: 320XXX

REGISTERED PROFESSIONAL ENGINEER
STATE OF WASHINGTON
81061
JAMES R. GOERTZEN

BOGARD ENGINEERS PS
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22121 17th Avenue SE, Suite 111
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PERMIT SET

6TH FLOOR & ROOF HVAC PLANS

HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

Last Revision Date:
08-31-2020

ENGINEERED BY:

DRAWN BY:
J.G.

M-104

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RUSKIN®

3900 Dr. Greaves Rd. • Kansas City, MO 64030 • (816) 761-7476 • FAX (816) 765-8955

FSD36FA "FRONT ACCESS" COMBINATION FIRE AND SMOKE DAMPER

1½ HOUR UL555 RATED, UL555S LEAKAGE CLASS 2

APPLICATION

The FSD36FA is a combination fire/smoke damper that allows through the grille access to the damper, actuator and heat actuated device. It can be equipped with the industry's shortest sleeve and is ideally suited for shaft wall applications. The FSD36FA damper is rated for maximum velocity of 2,000 fpm, 4" (102) static pressure.

STANDARD CONSTRUCTION

FRAME/SLEEVE
20 gage (.9) galvanized steel, standard integral sleeve with front flange for grille application and integral actuator cabinet. Sleeve is supplied with factory installed insulation on four sides. See page 3 for minimum sleeve requirements.

BLADES
6" (152) wide, 16 (1.6) gage galvanized steel. Triple V-groove shaped approximately 6" (152) on center.

ACTUATOR CABINET
Cabinet is 6" (152) wide on damper 14" (356) wide and larger. Cabinet is 4" (102) wide on dampers less than 14" (356) wide.

LINKAGE
Concealed in frame.

BEARINGS
Stainless steel sleeve, pressed into frame.

JAMB SEALS
Stainless steel, flexible metal compression type.

BLADE SEALS
Silicone edge type for smoke seal to 450°F (232°C) and galvanized steel for flame seal to 1900°F (1038°C).

CONTROLLED CLOSURE DEVICE (HEAT-ACTUATED)
EFL 165°F (74°C) is standard. 212°F (100°C), 250°F (121°C), or 350°F (177°C) are options.
PFL 165°F (74°C) is standard. 212°F (100°C) or 285°F (141) are options.

DAMPER SIZES

MINIMUM SIZE
12"w x 8"h (305 x 203). 14"w x 8"h (356 x 203) with SP100 or TS150. Effective damper size is 8"w x 8"h (203 x 203).

MAXIMUM SIZE
36"w x 36"h (915 x 915). Effective damper size is 30"w x 36"h (762 x 915)

OPTIONS

- **FM Approvals** Specification Tested Product.
- **Longer sleeve** for duct connections
- **TS150 FireStat** for reopenable operation in dynamic smoke management systems.
- **SP100 Switch Package** to remotely indicate damper blade position.
- **MCP** control panels for test purposes or smoke management systems.
- **More Grille depth for OBD.**

NOTES

1. Dampers furnished actual size.
2. Dimensions shown in parentheses ( ) indicate millimeters.

Model FSD36FA meets the requirements for fire, smoke and combination fire/smoke dampers established by:

- **National Fire Protection Association** NFPA Standards 90A, 92A, 92B and 101
- **BOCA National Building Codes**
- **ICBO Uniform Building Codes**
- **SBCCI Standard Building Codes**
- **ICC International Building Codes**
- **New York City** (3SA Listing #176-82-SM)

UL CLASSIFIED
UL555 Listing R5531, UL555S Listing R5531

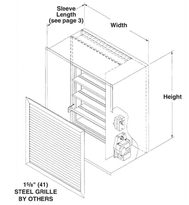
SEE COMPLETE MARKING ON PRODUCT

FM Approvals
Specification Tested Product (Option)

FEATURES

The FSD36FA offers:

- EFL (Electric Fuse Link) or PFL (Pneumatic Fuse Link) heat-actuated release devices permit controlled (rather than instantaneous) closure through the damper actuator. The EFL and PFL allow the damper to automatically reopen after a test, smoke detection or power failure conditions.
- EFL is stancard on dampers with slectric actuators.
- PFL is standard on dampers with pneumatic actuators.
- EFL's may be ordered on dampers with pneumatic actuators but require an additional EP switch to be ordered.



ALL STATED SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION. ©Ruskin 2007

1 FIRE/SMOKE DAMPER DETAIL (FSD-1)

RUSKIN®

3900 Dr. Greaves Rd. • Kansas City, MO 64030 • (816) 761-7476 • FAX (816) 765-8955

FSD36, FSD36LP COMBINATION FIRE AND SMOKE DAMPER

1½ HOUR UL555 RATED, UL555S LEAKAGE CLASS 2

APPLICATION

Ruskin FSD36 Series low leakage combination fire and smoke dampers provide point-of-origin fire and smoke containment. The FSD36 includes high strength single skin blades to ensure the lowest resistance to airflow and leakage up to 2000 fpm (10.2 m/s) and 4 in. wg (1 kPa).

The FSD36LP low leakage, low profile, and low pressure drop combination fire and smoke damper is provided with an integral sleeve/frame design. The FSD36LP has the lowest pressure drop of less than .03 at 1000 FPM (5.1 m/s) of any fire smoke damper.

All FSD36 series dampers may be installed vertically in walls or horizontally in masonry floors and are rated for airflow and leakage in either direction.

STANDARD CONSTRUCTION		
Description	**FSD36**	**FSD36LP**
Frame	5" x 16 gauge (127 x 1.6) galvanized, single piece, hat-shaped channel, structurally superior to 13 (2.4) gauge channel frame.	Integral sleeve and frame 20 (1.0) gauge galvanized single piece.
Blades	6" (152) wide and 16 (1.6) gauge galvanized steel. Blades are approximately 6" (152) on center.	Low profile aerodynamic shaped, double skin of 16 (1.6) and 20 (1.0) gauge galvanized steel.
Bearings	Stainless steel sleeve type, pressed into frame.	Stainless steel sleeve type, pressed into frame.
Jamb Seal	Stainless steel, flexible metal compression type.	Stainless steel, flexible metal compression type.
Blade Seal	Silicone edge type for smoke seal to 450°F (232°C) and galvanized steel for flame seal to 1900°F (1038°C) mechanically fastened to the blade edge.	Stainless steel, flexible metal compression type.
Linkage	Concealed in frame.	Not Required

DAMPER SIZES

Sizes indicated below are for ratings of 2000 FPM (10.2 m/s) and 4 in. w.g. (1 kPa).

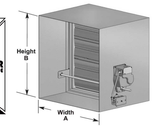
MINIMUM SIZE
FSD36LP - 6"w x 6"h (152 x 152) (actual size)
FSD36 - 8"w x 6"h (203 x 152)

MAXIMUM SIZE
FSD36LP
Single Section Vertical or Horizontal – 36"w x 14"h (914 x 356)
FSD36
Single Section Vertical or Horizontal – 36"w x 48"h (914 x1219)

FSD36
Multiple Section Vertical
126"w x 96"h (3200 x 2438) or 72"w x 122"h (1829 x 3099)
Multiple Section Horizontal
Electric Actuator – 120"w x 96"h (3048 x 2438)
Pneumatic Actuators – 144"w x 96"h (3658 x 2438)

CONTROLLED CLOSURE DEVICE (HEAT-ACTUATED)
EFL (Electric Fuse Link) - 165°F (74°C) standard. 212°F (100°C), 250°F (121°C), 350°F (177°C) available.
PFL (Pneumatic Fuse Link) - 165°F (74°C) standard. 212°F (100°C), 285°F (141°C) available.

amca INTERNATIONAL CERTIFIED RATINGS — AIR PERFORMANCE — AMCA INTERNATIONAL, INC.



MAXIMUM OPERATIONAL RATINGS	
Description	**FSD36 AND FSD36LP**
UL555S Leakage Rating	Class 2
UL555 Hourly Rating	1½ Hour
Maximum Velocity	2000 FPM (10.2 m/s)
Maximum Pressure	4 in. wg (1 kPa)
Temperature	350°F (177°C)

OPTIONS

- **FM Approvals** as Specification Tested Product.
- **DTS** (Damper Test Switch) test switch for cycle testing.
- **TS150** for reopenable operation in dynamic smoke management systems.
- **DSDF/DSDN Duct Smoke Detector** (Flow rated or No-Flow).
- **SP100 Switch Package** to allow remote indication of damper blade position.
- **MCP** control panels for testing or monitoring purposes or smoke management systems.
- **Factory Sleeves** of various lengths and gauges to ensure field compliance with UL installation requirements. FSD36 only.
- **FAST Angle** factory supplied for labor saving angle one-side installation. Other angles of various sizes and gauges also available for one-side or two-side installation.
- **Stainless Steel Linkage** – 304 stainless steel.

UL CLASSIFIED
UL555S Listing R5531, UL555S Listing R5531

Models FSD36 or FSD36LP series meets the requirements for combination fire and smoke dampers established by:

- **National Fire Protection Association** NFPA Standards 80, 90A, 92A, 92B, 101 and 105
- **ICC International Building Codes**
- **CSFM California State Fire Marshal**
Listing (#3235-0245:0126) • Listing (#3235-0245:0129)
- **New York City** (MEA Listing 252-05-E)

NOTES

1. Dampers are furnished approximately ¼" (6) smaller than given opening dimensions.
2. Dimensions shown in parentheses ( ) indicate millimeters.

ALL STATED SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION. ©Ruskin March 2016

2 FIRE/SMOKE DAMPER DETAIL (FSD-2)

RUSKIN®

3900 Dr. Greaves Rd. • Kansas City, MO 64030 • (816) 761-7476 • FAX (816) 765-8955

DIBD2 CURTAIN TYPE DYNAMIC FIRE DAMPERS

1½ HOUR UL555 RATED FOR USE IN DYNAMIC AND STATIC SYSTEMS

APPLICATION

Ruskin Model DIBD2 is a 1½ hour UL classified dynamic (fans on) or static (fans off) curtain style fire damper for use in HVAC systems that remain in operation during a fire. Fire dampers are used for the protection of openings in walls, partitions, or masonry floors with fire resistance ratings of less than 3 hours and shall have a 1½ hour fire protection rating. The DIBD2 can be installed vertically in walls or horizontally in masonry floors and is rated for airflow in either direction.

DYNAMIC CLOSURE RATINGS

4000 fpm (20.3 m/s) vertical mount only, up to 24" x 24" (610 x 610).
3000 fpm (15.2 m/s) vertical and horizontal mount, up to 24" x 24" (610 x 610).
2000 fpm (10.2 m/s) vertical or horizontal mount on all sizes.
4 in. w.g. (1 kPa) maximum pressure on all sizes.

STANDARD CONSTRUCTION

Frame and Blades Material
Galvanized steel or stainless steel (in gauges required by UL listing R-5531).

Closure Springs
301 stainless steel constant force or spring clip type.
Note: Vertical units 24" x 24" (610 x 610) and smaller utilize spring clips only and do not have constant force springs.

Fusible Link
165°F (74°C) is standard. 212°F (100°C) and 285°F (141°C) are available as options.

DAMPER SIZES

See pages 2 - 5 for minimum and maximum UL sizes.
See pages 6 - 9 for construction details on multiple section assemblies.

OPTIONS

- **True Round Fire Damper -** See model FDR25
- **Stainless Steel Construction –** See model (D)/BD2SS
- **FM Approvals** as Specification Tested Product
- **SP200** Switch Package to allow remote indication of damper blade position
- **FAST Angles** factory supplied one-side installation. Other angles of various sizes and gauges also available for one-side or two-side installation
- **Factory Sleeves** of various lengths and gauges to ensure field comoliance with UL installation requirements
- **MCP** Control panels for monitoring purpose
- **Grille Mounting** See (D)/BD2G or (D)/BD20G models
- **'GA' Grille Access** See (D)/BD2GA models
- **'OW' Out of Wall** See (D)/BD2/OW moels



Models DIBD2 series meet the requirements for fire dampers established by:

- **National Fire Protection Association** NFPA Standards 80, 90A, 92A, 92B, and 101
- **ICC International Building Codes**
- **CSFM California State Fire Marshal**
DIBD2 #3225-0245:0005
- **New York City** MEA 450-06-M

UL CLASSIFIED
UL555 Listing R5531

SEE COMPLETE MARKING ON PRODUCT

FM Approvals
Specification Tested Product (Option)

NOTES:

1. Dimensions shown in parentheses ( ) indicate millimeters.
2. Single section dampers ordered with either 12" (305), 14" (356), or 16" (406) long sleeve; the DIBD20, 40, 60, 230, 430, and 630 models may be substituted.

ALL STATED SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION. ©Ruskin December 2015

3 FIRE DAMPER DETAIL (FD-1)

REVISIONS

NO.	DATE	DESCRIPTION
1	8-31-2020	CITY BACKCHECK COMMENTS
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ANDGAR™ Mechanical, LLC

STATE CONTRACTORS LICENSE NUMBER.....ANDGAML825N3

JOB#: 320XXX

BOGARD ENGINEERS PS
Mechanical Engineering Consultants
23121 - 17th Avenue SE, Suite 111
Bothell, Washington 98021

PERMIT SET

HVAC DETAILS

HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

Last Revision Date:
08-31-2020

ENGINEERED BY:

DRAWN BY:
J.G.

M-501

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DIFFUSER AND GRILLE SCHEDULE

TAG	TYPE MAKE	MODEL	DESCRIPTION	MOUNTING TYPE	NECK CONNECTION	NOMINAL FACE SIZE (INCHES)	NC	REMARKS
CD–1	SHOEMAKER	700MA	4–CORE ADJUSTABLE	LAY–IN	SQUARE	24"x24"	25	1
CD–2	SHOEMAKER	MA	4–CORE ADJUSTABLE	SURFACE MOUNT	SQUARE	NECK SIZE + 2–3/8"	25	1
–	–	–	–	–	–	–	–	–
SG–1	SHOEMAKER	904	DOUBLE DEFLECTION	SURFACE MOUNT	SQUARE / RECT	NECK SIZE + 1–3/4"	25	–
SG–2	SHOEMAKER	SD34–FS	DOUBLE DEFLECTION SPIRAL DUCT GRILLE	SURFACE MOUNT	SQUARE / RECT	NECK SIZE + 1–7/8"	25	–
–	–	–	–	–	–	–	–	–
RG–1	SHOEMAKER	600T	1/2"x1/2"x1/2" EGGCRATE CORE	LAY–IN	SQUARE / RECT	24"x12" / 24"x24"	25	–
RG–2	SHOEMAKER	915TFG	45° FIXED DEFLECTION FILTER GRILLE	LAY–IN	SQUARE / RECT	24"x12" / 24"x24"	25	4
RG–3	SHOEMAKER	935FG	45° FIXED DEFLECTION FILTER GRILLE	SURFACE MOUNT	SQUARE / RECT	NECK SIZE + 2–3/4"	25	4
–	–	–	–	–	–	–	–	–
TG–1	SHOEMAKER	600TFG	1/2"x1/2"x1/2" EGGCRATE CORE	LAY–IN	SQUARE / RECT	24"x12" / 24"x24"	25	–
TG–2	SHOEMAKER	350RL	35° FIXED DEFLECTION	SURFACE MOUNT	SQUARE / RECT	NECK SIZE + 1–3/4"	25	–
–	–	–	–	–	–	–	–	–
EG–1	SHOEMAKER	600T	1/2"x1/2"x1/2" EGGCRATE CORE	LAY–IN	SQUARE / RECT	24"x12" / 24"x24"	25	–
EG–2	SHOEMAKER	350RL	35° FIXED DEFLECTION	SURFACE MOUNT	SQUARE / RECT	NECK SIZE + 1–3/4"	25	–
–	–	–	–	–	–	–	–	–

1: CEILING SUPPLY GRILLES SHALL INCLUDE GENSCO REGISTER BOX OR EQUIVALENT
2: INCLUDES TITUS MODEL TRM, 24"x24" RAPID FRAME MOUNT FOR LAY–IN (BORDER TYPE 3) CEILING DIFFUSER
3: INCLUDES EXTRACTOR
4: RETURN AIR FILTER GRILLE

ELECTRIC WALL HEATER SCHEDULE

TAG	TYPE	MAKE	MODEL	PROVIDED BY	INSTALLED BY	ELECTRICAL VOLTS/PHASE	ELECTRICAL KW	CONTROL TYPE	WEIGHT (LBS)	REMARKS
EH–1	WALL	KING OR EQUAL	–	E.C.	E.C.	120/1	0.5	WALL T–STAT	–	1, 2
EH–2	WALL	KING OR EQUAL	–	E.C.	E.C.	208/1	1.0	WALL T–STAT	–	1, 2
EH–3	WALL	KING OR EQUAL	–	E.C.	E.C.	208/1	1.5	WALL T–STAT	–	1, 2
EH–4	WALL	KING OR EQUAL	–	E.C.	E.C.	208/1	2.0	WALL T–STAT	–	1, 2
EH–5	WALL	KING OR EQUAL	–	E.C.	E.C.	208/1	2.5	WALL T–STAT	–	1, 2
EH–6	WALL	KING OR EQUAL	–	E.C.	E.C.	208/1	3.0	WALL T–STAT	–	1, 2
EH–7	WALL	KING OR EQUAL	–	E.C.	E.C.	208/1	3.5	WALL T–STAT	–	1, 2

1: THERMOSTATS TO COMPLY WITH WSEC.
2: SWITCH AND WIRING PROVIDED AND INSTALLED BY E.C.

ELECTRIC UNIT HEATER SCHEDULE

TAG	TYPE	MAKE	MODEL	PROVIDED BY	INSTALLED BY	ELECTRICAL VOLTS/PHASE	ELECTRICAL KW	CONTROL TYPE	WEIGHT (LBS)	REMARKS
UH–1	UNIT	KING OR EQUAL	KBP2006	E.C.	E.C.	208/1	2.850	T–STAT	26	1, 2

1: WITH INTEGRAL THERMOSTAT.
2: SWITCH AND WIRING PROVIDED AND INSTALLED BY E.C.

FIRE & FIRE/SMOKE DAMPER SCHEDULE

TAG	AREA SERVED	MAKE	MODEL	VELOCITY (2) (HI/LOW)	STYLE (3) (EFL/SCO)	DAMPER SIZE (4)	DUCT SIZE	SLEEVE LENGTH	END SWITCH	ACTUATOR LOCATION IN/OUT	ACTUATOR LOCATION LH/RH	REMARKS
~~FSD–1~~	~~CORRIDOR VENTILATION~~	~~RUSKIN~~	~~FSD36FA~~	~~LOW~~	~~EFL~~	~~12"x8"~~	~~12"x12"~~	~~16"~~	~~N~~	~~IN~~		~~1, 2, 3, 4, 5, 6, 7~~
FSD–2	CORRIDOR VENTILATION	RUSKIN	FSD36LP	LOW	EFL	38"x22"	38"x22"	16"	N	IN		1, 2, 3, 4, 5, 6, 7
FD–1	CORRIDOR VENTILATION	RUSKIN	DIBD2	LOW	EFL	–	–	–	N	IN		–

1: ~~ALL SMOKE DETECTORS PROVIDED BY E.C. INSTALLATION OF DUCT DETECTORS BY M.C. ALL WIRING AND FIRE LIFE SAFETY INTERLOCKS~~ ARE BY E.C. SMOKE DETECTORS SHALL BE INSTALLED PER ALL APPLICABLE CODE REQUIREMENTS INCLUDING BUT NOT LIMITED TO THE REQUIREMENTS OF THE FOLLOWING IBC AND IMC CODE SECTIONS : IBC 716.3.3.1 & 716.3.2, IMC 606.1
2: EFL – ELECTRONIC FUSIBLE LINK WITH NO SMOKE CONTROL OVERRIDE.
3: REFER TO MFGR'S LISTED INSTALLATION INSTRUCTIONS FOR MAXIMUM SINGLE AND MULTIPLE SECTION DIMENSIONS TO MAINTAIN CLASS II LEAKAGE RATING. FOR ROUND AND FLAT OVAL DUCT, DAMPER TO BE 2" LARGER THAN CONNECTING DUCT SIZE OVERALL.
4: SLEEVE TO BE GALVANIZED SHEET METAL, 16 GAGE. BREAKAWAY CONNECTION NOT REQUIRED UP TO 36" WIDE x 24" HIGH.
5: QUALIFICATIONS:
UL555 CLASSIFICATION AND LABELING AS A 1–1/2 HR FIRE DAMPER
UL555 LEAKAGE RATED (SMOKE) DAMPER CLASSIFICATION AND LABEL LEAKAGE CLASS II
6: DUCT ACCESS PANELS SHALL BE PROVIDED AT EACH FSD AND LOCATED SUCH THAT UL LABEL IS VISIBLE FOR INSPECTION, PER IBC 717.4 & UL555.
7: SUBMITTAL TO INCLUDE ACTUATOR MODELS AND AMPS, WIRING DIAGRAMS, SIZE RANGE, AND ALL AVAILABLE UL LISTED INSTALLATIONS.

FAN SCHEDULE

TAG	MAKE	MODEL	AREA SERVED	LOCATION	PERFORMANCE DATA CFM	S.P.	FAN HP (WATTS)	ELECTRICAL DATA VOLTS/PH	DISCONNECT	SONES	WEIGHT (LBS.)	REMARKS
EF–1	PANASONIC	FV–05–11VKSL1	RESTROOM/WHOLE HOUSE VENTILATION	CEILING	50	0.1	(5.8)	120 / 1	BY E.C.	< 0.30	10.6	1
EF–2	PANASONIC	FV–05–11VK2	LAUNDRY	CEILING	50	0.1	(25)	120 / 1	BY E.C.	< 0.30	11.9	2
EF–3	CONTINENTAL	AXC300B–ES	BICYCLE STORAGE	WALL	525	0.5	(312)	120 / 1	BY E.C.		20	
EF–4	CONTINENTAL	AXC300B–ES	TRASH COLLECTION	WALL	300	0.5	(312)	120 / 1	BY E.C.		20	
MAU–1	GREENHECK	SQ–120–VG	CORRIDOR VENTILATION	ROOF	1470	0.425	1.5	120 / 1	BY E.C.	5.9	100	3, 4, 5
GEF–1	CANARM	215INS	GARAGE	GARAGE	3820	0.75	1.5	280 / 3	BY E.C.	14.3	158	6, 8
GEF–2	CANARM	218INS	BASEMENT GARAGE	ROOF	6200	0.75	2.0	280 / 3	BY E.C.	12.1	210	6
SPF–1	COOLAIR	CBC30ME1231	WEST STAIRWELL	ROOF	7000	0.50	1.5	280 / 3	BY E.C.	21.0	160	7, 9, 10
SPF–2	COOLAIR	CBC30ME1231	NORTH STAIRWELL	ROOF	7000	0.50	1.5	280 / 3	BY E.C.	21.0	160	7, 9, 10

1: WHOLE HOUSE FANS TO OPERATE CONTINUOUS PROGRAMMED SPEED
2: FAN ON/OFF PROVIDED BY WALL SWITCH IN SPACE, SWITCH AND WIRING PROVIDED AND INSTALLED BY E.C
3: OPTIONS INCLUDE: LOW LEAK INTAKE DAMPER WITH 120/1 ACTUATOR, FILTER HOUSING WITH MERV 8 FILTER, AND VARI–GREEN DIAL ON EXTERIOR OH FAN HOUSING
4: E.C. TO INTERLOCK FAN–1 INTAKE AIR DAMPER ACTUATOR (120/1) WITH FAN MOTOR
5: FAN WIRED FOR CONTINOUS OPERATION
6: GEF–1 & 2 INTERLOCKED TO RESPECTIVE CO & NO2 SENSORS AND CONTROL PANEL ON EACH FLOOR FOR START/STOP OPERATION, EACH GEF TO HAVE LOCAL VFD PROVIDED BY M.C. – LINE VOLTAGE WIRING BY E.C.
7: SPF–1 & 2 START/STOP INTERLOCKED TO FIRE ALARM PANEL FOR OPERATION DURING FIRE ALARM, POWER SUPPLY FROM EMERGENCY GENERATOR PANEL, MOTOR STARTER AND LINE VOLTAGE WIRING BY E.C.
8: WITH SPRING ISOLATION HANGERS
9: FANS TO COMPLY WITH IBC 909.10.5, MINIMUM BELTS (2)
10: FANS DESIGNED TO COMPLY WITH IBC 909.6 INCLUDING MAXIMUM PRESSURE DIFFERENCE ALLOWED PER 909.17, INCLUDING SYSTEM TIME AND PER 909.20.5 △

INDOOR UNIT SCHEDULE

TAG	MAKE	MODEL	SUPPLY AIRFLOW CFM	COOLING CAPACITY BTU / H	HEATING CAPACITY BTU / H	ELECTRICAL VOLTS/PH	ELECTRICAL AMPS	ELECTRICAL WATTS	OPERATING WEIGHT (LBS.)	REMARKS
IDU–1A	DAIKIN	FFQ09Q2VJU	350	9,000	9,000	208–230/1	.23	23	40	1, 2, 4
IDU–1B	DAIKIN	FFQ09Q2VJU	350	9,000	9,000	208–230/1	.23	23	40	1, 2, 4
IDU–2	DAIKIN	FTX09NMJU	140	9,000	10,000	208–230/1	.09	21	20	1, 2, 3, 4

1. WIRING AND DISCONNECT PROVIDED BY E.C.
2. PROVIDE WITH WIRELESS REMOTE CONTROLLER.
3. INSTALL UNIT 72" AFF. VERIFY MOUNTING HEIGHT, CLEARANCES, AND LOCATION BEFORE INSTALLATION.
4. PROVIDE UNDERMOUNT CONDENSATE PUMP. PUMP TO NEAREST SINK TAILPIECE OR APPROVED RECEPTOR.

OUTDOOR UNIT SCHEDULE

TAG	MAKE	MODEL	AREA SERVED	FAN PERFORMANCE DATA SEER	EER	HSPF	COP	COOLING (BTU / H)	HEATING (BTU / H)	ELECTRICAL VOLTS/PH	MCA	MFA	REFRIGERANT PIPING GAS PIPE (INCHES)	LIQUID PIPE (INCHES)	WEIGHT (LBS)	REMARKS
ODU–1	DAIKIN	2MXS18NMVJU	STUDIO	18.9	12.5	10.7	4.33	18,000	18,900	208–230/1	15.8	20	3/8 X 1 , 1/2 X 1	1 / 4 X 2	125	1
ODU–2	DAIKIN	RX09NMVJU	OFFICE	19.0	12.5	9.0	4.06	9,000	10,000	208–230/1	12.1	15	3/8 X 1	1 / 4 X 1	55	1

1. WIRING AND DISCONNECT PROVIDED BY E.C.

ENERGY RECOVERY VENTILATION UNIT SCHEDULE

TAG	LOCATION/ SERVICE	MAKE	MODEL	SUPPLY FLOW (CFM)	EXHAUST FLOW (CFM)	ENTHALPY RECOVERY EFFICIENCY COOLING	ENTHALPY RECOVERY EFFICIENCY HEATING	ESP (IN. W.G.) SUPPLY/EXHAUST	ELECTRICAL VOLT/PHASE	ELECTRICAL WATTS	ELECTRICAL MCA	ELECTRICAL dBA	MAX WEIGHT (LBS)	REMARKS
HRV–1	OFFICE / STUDIO	DAIKIN	VAM300GVJU	170	170	48%	63%	0.33	208 – 230 / 1	180	1.6	25.5	71	1, 2, 3, 4, 5

1. WIRING AND DISCONNECT BY E.C.
2. MOUNT UNIT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND CLEARANCES.
3. ~~SCR AUTOMATIC SHUT OFF DAMPER ON OSA EA DUCT TO WALL LOUVERS.~~
4. OUTSIDE AIR AND EXHAUST AIR TO BE FILTERED WITH FACTORY FILTERS MINIMUM MERV 6
5. CONTINUOUS WHOLE HOUSE VENTILATION SYSTEM SHALL OPERATE CONTINUOUSLY AND BE EQUIPPED WITH AN OVERRIDE CONTROL. A 'FAN ON' SWITCH SHALL BE PROVIDED AS AN OVERRIDE TO OPERATE THE ERV WITHOUT ENERGIZING OTHER ENERGY–CONSUMING APPLIANCES. LABEL SHALL BE AFFIXED TO THE CONTROLS THAT READS 'WHOLE HOUSE VENTILATION (SEE OPERATING INSTRUCTIONS)' △

DUCT HEATER SCHEDULE

TAG	UNIT SERVED	MAKE	MODEL	ELECTRICAL KW	ELECTRICAL VOLTS/PH	ELECTRICAL DISCONNECT	# OF STGS	Min. CFM	DUCT SIZE	FLOW DIRECTION	REMARKS
DH–1	ERV–1	THERMOLEC	RFC	–	208 / 1	BY E.C.	1	170	8" DIA.	HORIZONTAL	1, 2, 3

1: WIRING AND DISCONNECT BY E.C.
2: OPTIONS INCLUDE: CONTROL TRANSFORMER, AIR FLOW PROVING SWITCH, SCR CONTROLLER, AND DT–037 MODULATING DUCT THERMOSTAT
3: CONSTANT VOLUME AIRFLOW APPLICATION

MOTORIZED DAMPER SCHEDULE

TAG	EQUIPMENT / AREA SERVED	FUNCTION	MAKE	MODEL	ACTUATOR INFORMATION QTY	SPRING	END SWITCH	SIGNAL	VOLTS	DAMPER SIZE WIDTH	HEIGHT	ACTUATOR PROVIDED BY	REMARKS
MD–1	CORRIDOR SUPPLY	LOW LEAK	RUSKIN	CD60	1	–	–	–	–	–	–	M.C.	1, 2
MD–2	CORRIDOR RETURN	LOW LEAK	RUSKIN	CD60	1	–	–	–	–	–	–	M.C.	1, 2

1: MOTORIZED DAMPER CONTROLLED BY NON–PROGRAMMABLE T–STAT WITH FLOATING CONTROL
2: M.C. TO PROVIDE BALANCE DAMPER IN DUCT UP OR DOWNSTREAM OF 2–POSITION DAMPERS
3: THE OUTDOOR AIR TO HRV–1 TO BE FILTERED. THE FILTER TO BE LOCATED ON THE UPSTREAM SIDE OF THE HEAT EXCHANGER IN BOTH THE INTAKE AND EXHAUST AIRSTREAMS WITH A MINIMUM EFFICIENCY RATING VALUE (MERV) OF AT LEAST 6. IMC 403.8.9.2

VENTILATION SCHEDULE

SPACE	FLOOR AREA (ft^2)	OCCUPANCY DENSITY (PEOPLE/1000 ft^2)	OCCUPANCY QUANTITY (PEOPLE)	OCCUPANCY OUTSIDE AIR RATE (CFM/PERSON)	OCCUPANCY MIN OSA REQUIRED (CFM)	AREA OSA RATE (CFM/ft^2)	AREA MIN OSA REQUIRED (CFM)	TOTAL MIN OSA REQUIRED (CFM)	OSA PROVIDED (CFM)	EXHAUST AIR RATE (CFM/ft^2)	EXHAUST AIR RREQUIRED (CFM/ft^2)	EXHAUST AIR PROVIDED (CFM)	REMARKS
BASEMENT GARAGE	6552	–	–	–	–	–	–	–	–	0.75	4914	5475	1
BASEMENT LOBBY	130	–	–	–	–	1	130	130	200	–	–	–	2
GROUND FLOOR GARAGE	4811	–	–	–	–	–	–	–	–	0.75	3608	3820	1
GROUND FLOOR FRONT LOBBY	183	30	6	7.5	45	0.06	11	56	80	–	–	–	3
GROUND FLOOR BACK LOBBY	267	–	–	–	–	1	267	267	270	–	–	–	2
GROUND FLOOR OFFICE	114	5	1	5	5	0.06	7	12	30	–	–	–	3
GROUND FLOOR TOILET ROOM	55	–	–	–	–	–	–	–	–	50 PER WC	50	50	4, 5
GROUND FLOOR BICYCLE STORAGE	460	–	–	–	–	–	–	–	–	1	460	525	
GROUND FLOOR TRASH COLLECTION	299	–	–	–	–	–	–	–	–	1	299	300	
SECOND FLOOR CORRIDOR	1027	–	–	–	–	0.12	123	123	200	–	–	–	2
THIRD FLOOR CORRIDOR	1027	–	–	–	–	0.12	123	123	200	–	–	–	2
FOURTH FLOOR CORRIDOR	973	–	–	–	–	0.12	117	117	200	–	–	–	2
FIFTH FLOOR CORRIDOR	973	–	–	–	–	0.12	117	117	200	–	–	–	2
SIXTH FLOOR CORRIDOR	956	–	–	–	–	0.12	115	115	200	–	–	–	2

1. INTERLOCKED WITH CO AND NO2 SENSORS LOCATED ON FLOOR LEVEL BEING SERVED.
2. OUTSIDE AIR PROVIDED BY MAU–1.
3. OUTSIDE AIR PROVIDED BY ERV–1.
4. EXHAUST AIR PROVIDED BY ERV–1.
5. 50 CFM EXHAUST PER WC PROVIDED PER IMC REQUIREMENTS WITH CONTINUOUS OPERATION.

REVISIONS

NO.	DATE	DESCRIPTION
1	8-31-2020	CITY BACKCHECK COMMENTS
2		
3		
4		
5		
6		
7		
8		
9		
10		

ANDGAR Mechanical, LLC
STATE CONTRACTORS LICENSE NUMBER.....ANDGAML825N3
JOB#: 320XXX

BOGARD ENGINEERS PS
Mechanical Engineering Consultants
23121 17th Avenue SE, Suite 111
Bothell, Washington 98021

PERMIT SET

HVAC SCHEDULES

HARBORSIDE APARTMENTS
1310 G STREET
BELLINGHAM, WA 98225

Last Revision Date: 08-31-2020

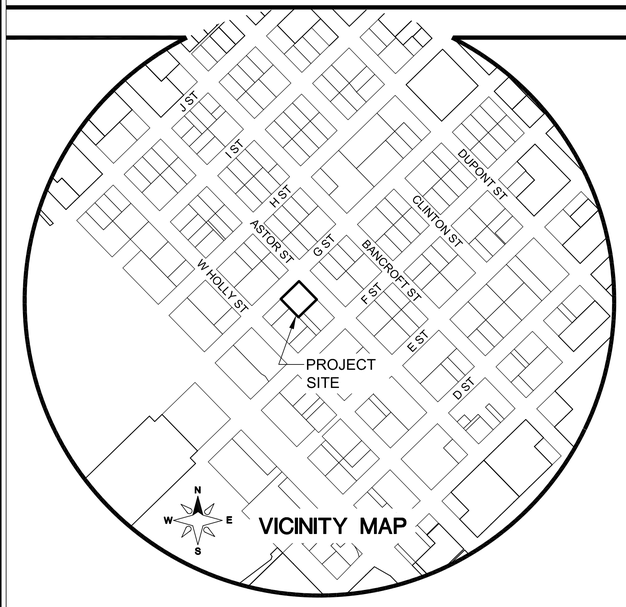
ENGINEERED BY:
DRAWN BY: J.G.

M-601

31 August 2020 5:37 PM R:\Mechanical\Commercial\Current Projects\Harborside Project – 820011\Drawings\ACAD REVIT\Harborside Apartments – Mech.CAD 2020–08–27\acad revit\M–601 Schedules.dwg james goertzen

A PORTION OF THE SE 1/4 OF THE NE 1/4 OF
SECTION 25, TOWNSHIP 38 N., RANGE 2 E. OF THE W.M.
CITY OF BELLINGHAM, WHATCOM COUNTY, WASHINGTON

HARBORSIDE APARTMENTS
1310 G STREET, BELLINGHAM, WA
ON-SITE CIVIL CONSTRUCTION PLANS



VICINITY MAP

SHEET INDEX

1. COVER SHEET
2. EXISTING CONDITIONS PLAN
3. GENERAL NOTES, TESC NOTES & SWPPP ELEMENTS
4. TEMPORARY EROSION CONTROL - PLAN & DETAILS
5. SITE PLAN
6. GRADING PLAN
7. UTILITY PLAN - GROUND FLOOR LEVEL
8. UTILITY PLAN - BASEMENT FLOOR LEVEL
9. DETAILS
10. DETAILS
11. DETAILS

OWNER

BAD REINERTZ, LLC
1642 EMERALD LAKE WAY
BELLINGHAM, WA 98226
CONTACT: MATS HAREZLAK
(360) 715-3058

CIVIL ENGINEER

LDES, INC.
5160 INDUSTRIAL PL., SUITE 108
FERNDALE, WA 98248
CONTACT: RAMON LLANOS, PE.
(360) 383-0620

SURVEYOR

LDES, INC.
5160 INDUSTRIAL PL., SUITE 108
FERNDALE, WA 98248
CONTACT: KYLE HAGGITH, PLS.
(360) 383-0620

ARCHITECT

ARA ARCHITECTS
1310 BROADWAY, SUITE 20
BELLINGHAM, WA 98225
CONTACT: ROGER AXELSON
(360) 671-0933

EXISTING LEGEND

FOUND REBAR WITH YELLOW CAP	TELEPHONE/COMM (BURIED)
REBAR SET THIS SURVEY	POWER (AERIAL)
SPIKE AND WASHER SET THIS SURVEY	POWER (BURIED)
PAINTED MARK ON RETAINING WALL	GAS LINE
FOUND MONUMENT AS NOTED	SANITARY SEWER
WATER METER	STORM DRAINAGE
WATER VALVE	WATER MAIN
FIRE HYDRANT	RETAINING WALL
ELECTRIC METER PANEL	
PAD MOUNTED TRANSFORMER	EXISTING ASPHALT
UTILITY POLE	
GUY POLE	EXISTING CONCRETE
UTILITY POLE ANCHOR	
TELEPHONE PANEL	
TELEPHONE HAND HOLE	
GAS METER	
SAN. SEWER MANHOLE	
SAN. SEWER CLEAN-OUT	
CATCH BASIN, TYPE 1, SOLID LID	
STORM DRAIN MANHOLE	
CLEAN-OUT	

PROPOSED LEGEND

- = PROPOSED STORM CATCHBASIN - TYPE 1
- = PROPOSED STORM CLEANOUT
- = PROPOSED STORM FLOOR DRAIN
- = PROPOSED SANITARY SEWER CLEANOUT
- = PROPOSED WATER METER
- = PROPOSED VALVE
- = PROPOSED HYDRANT
- = PROPOSED STORM WATER LINE
- = PROPOSED SEWER LINE
- = PROPOSED WATER LINE
- = PROPOSED POWER LINE
- = PROPOSED CONTOUR (INDEX)
- = PROPOSED CONTOUR (NORMAL)
- = PROPOSED WALL
- = PROPOSED FILL
- = PROPOSED CUT
- = PROPOSED EASEMENT
- = PROPOSED CONCRETE
- = PROPOSED ASPHALT
- = PROPOSED STREET TREE

CALL BEFORE YOU DIG
FOR BURIED UTILITY LOCATIONS
1-800-424-5555

BURIED UTILITIES NOTE:

ALL UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE LOCATIONS ONLY AND THERE IS NO GUARANTEE THAT ALL UTILITIES ON THIS SITE ARE SHOWN. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTACT THE WASHINGTON STATE UTILITY LOCATED CENTER AT LEAST 48 HOURS BEFORE CONSTRUCTION

CONTROL NOTES:

CITY OF BELLINGHAM CONTROL NETWORK

HORIZONTAL DATUM: NAD83/98
VERTICAL DATUM: NAVD88

C.O.B. MONUMENT #514
FOUND A BRASS DISK AT CENTERLINE INTERSECTION OF "I" STREET AND ASTOR STREET
NORTHING: 645,304.72'
EASTING: 1,241,025.35'

C.O.B. MONUMENT #512:
FOUND A BROKEN BRASS DISK AT CENTERLINE INTERSECTION OF "G" STREET AND ASTOR STREET
NORTHING: 644,931.86'
EASTING: 1,241,387.87'

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FOUND A BRASS DISK AT CENTERLINE INTERSECTION OF "I" STREET AND W. HOLLY STREET
REFERENCE BENCHMARK
NORTHING: 645,123.76'
EASTING: 1,240,838.75'
ELEVATION: 58.35'

BASIS OF BEARING: GRID BEARING BETWEEN MON #512 AND #514: NORTH 44°11'40" WEST

LEGAL DESCRIPTION

LOT 13-16, BLOCK 13, PLAT OF SUPPLEMENTAL MAP OF THE TOWN OF WHATCOM, WHATCOM COUNTY, W.T. 1884, NOW A PART OF THE CONSOLIDATED CITY OF BELLINGHAM, WHATCOM COUNTY, WASHINGTON, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 1 OF PLATS, PAGE 42, RECORDS OF WHATCOM COUNTY, WASHINGTON.

SITUATE IN WHATCOM COUNTY, WASHINGTON.

SURVEYOR'S NOTES:

1) DATA FOR THIS SURVEY WAS GATHERED BY FIELD TRAVERSE UTILIZING ELECTRONIC DATA COLLECTION ON SEPTEMBER OF 2018.
2) EQUIPMENT USED: LEICA TCRP1200: 00'1" ± 1 PPM, ±1.5 MM
   PRECISION EXCEEDS LINEAR CLOSURES OF 1:10,000 PER WAC 332-130-090
3) HORIZONTAL DATUM: CITY OF BELLIGNHAM MONUMENT NETWORK WASHINGTON STATE NORTH ZONE NAD 83/98
   VERTICAL DATUM: NAVD88 (COB MON #805, ELEV=58.35')
4) PURPOSE OF SURVEY: BOUNDARY AND TOPOGRAPHIC SURVEY.
5) IN ACCORDANCE WITH THE REVISED CODE OF WASHINGTON: 58.09 AND WAC CHAPTER 332-130, THIS RECORD OF SURVEY DEPICTS OCCUPATIONAL INDICATORS, SUCH AS FENCES. THESE INDICATORS REPRESENT A POTENTIAL FOR CLAIMS OF UNWRITTEN TITLE. THIS SURVEY DOES NOT RESOLVE ANY OF THE LEGAL OWNERSHIP ISSUES THAT MAY ARISE FROM THESE UNWRITTEN TITLE CLAIMS.
6) CONTOUR INTERVALS ARE 1 FOOT AND ARE COMPUTER GENERATED FROM GROUND FIELD TOPOGRAPHY GATHERED FOR THIS SURVEY UTILIZING ELECTRONIC DATA COLLECTION.
7) ELEVATION ACCURACY OF SURVEYED POINTS AND DIGITAL TERRAIN MODELS EXCEEDS THE STANDARDS PUT FORTH BY THE US ARMY CORPS OF ENGINEERS FOR CONSTRUCTION LAYOUT: 0.10 FEET IN ELEVATION MULTIPLIED BY THE DISTANCE FROM BENCHMARK TRAVERSED IN MILES, SQUARE-ROOTED, AND FOR WELL-DEFINED POINTS IN THE DIGITAL TERRAIN MODEL, PLUS OR MINUS HALF THE CONTOUR INTERVAL (0.5 FEET).
8) LIMITATIONS ON USE: THIS SURVEY IS ONLY INTENDED FOR BOUNDARY RESOLUTION AND CIVIL DESIGN AND CONSTRUCTION OF THE SUBJECT PROPERTY, AND SHOULD NOT BE USED FOR OTHER PURPOSES.
9) UTILITY LOCATIONS SHOWN HEREON ARE BASED UPON FIELD LOCATION OF THE SURFACE EVIDENCE OF EXISTING STRUCTURES. UNDERGROUND UTILITY LOCATION SERVICES WERE NOT PROVIDED FOR THIS TOPOGRAPHIC SURVEY AND THE UNDERGROUND ROUTING OF REPORTED BURIED UTILITIES HAS NOT BEEN VERIFIED OR CONFIRMED WITH THE UTILITY PURVEYOR. ADDITIONAL UTILITY LOCATIONS AND UNDERGROUND UTILITY LOCATION PAINT MAPPING WILL BE REQUIRED PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, ELEVATION AND SIZE OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDALE, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

RAMON LLANOS — 38600 — REGISTERED PROFESSIONAL ENGINEER
7/15/20

JOB NO.: 1856
DWG. NAME: 1856-CIVIL-C3D - redo3.dwg
DESIGNED BY: RS/RL
DRAWN BY: RS/EH
CHECKED BY: RL
OWNER:
MATS HAREZLAK
1642 EMERALD LAKE WAY
BELLINGHAM, WA 98226

1310 G STREET, CITY OF BELLINGHAM, WHATCOM COUNTY, WASHINGTON
HARBORSIDE APARTMENTS 1310 G ST
ON-SITE CIVIL PLANS
COVER SHEET

NO.	REVISION	BY	DATE
1	CIVIL SUBMITTAL 1	RS	07/22/20
2	CIVIL SUBMITTAL 2	RS	07/15/20

SHEET 01
OF 11

R:\Common\Land Projects 2018\1856 - 1310 G Street\dwg\1856-CIVIL-C3D - redo3.dwg PLOT DATE:7/15/2020 3:47 PM

SURVEYOR'S NOTES:

1) DATA FOR THIS SURVEY WAS GATHERED BY FIELD TRAVERSE UTILIZING ELECTRONIC DATA COLLECTION ON SEPTEMBER OF 2018.

2) EQUIPMENT USED: LEICA TCRP1200: 00"1" ± 1 PPM, ±1.5 MM

PRECISION EXCEEDS LINEAR CLOSURES OF 1:10,000 PER WAC 332-130-090

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- REBAR SET THIS SURVEY
- SPIKE AND WASHER SET THIS SURVEY
- PAINTED MARK ON RETAINING WALL
- FOUND MONUMENT AS NOTED
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- ELECTRIC METER PANEL
- PAD MOUNTED TRANSFORMER
- UTILITY POLE
- GUY POLE
- UTILITY POLE ANCHOR
- TELEPHONE PANEL
- TELEPHONE HAND HOLE
- GAS METER
- SAN. SEWER MANHOLE
- SAN. SEWER CLEAN-OUT
- CATCH BASIN, TYPE 1, SOLID LID
- STORM DRAIN MANHOLE
- CLEAN-OUT
- TELEPHONE/COMM (BURIED)
- POWER (AERIAL)
- POWER (BURIED)
- GAS LINE
- SANITARY SEWER
- STORM DRAINAGE
- WATER MAIN
- RETAINING WALL
- EXISTING ASPHALT
- EXISTING CONCRETE

CONTROL NOTES:

CITY OF BELLINGHAM CONTROL NETWORK

HORIZONTAL DATUM: NAD83/98
VERTICAL DATUM: NAVD88

C.O.B. MONUMENT #514
FOUND A BRASS DISK AT CENTERLINE INTERSECTION OF "I" STREET AND ASTOR STREET
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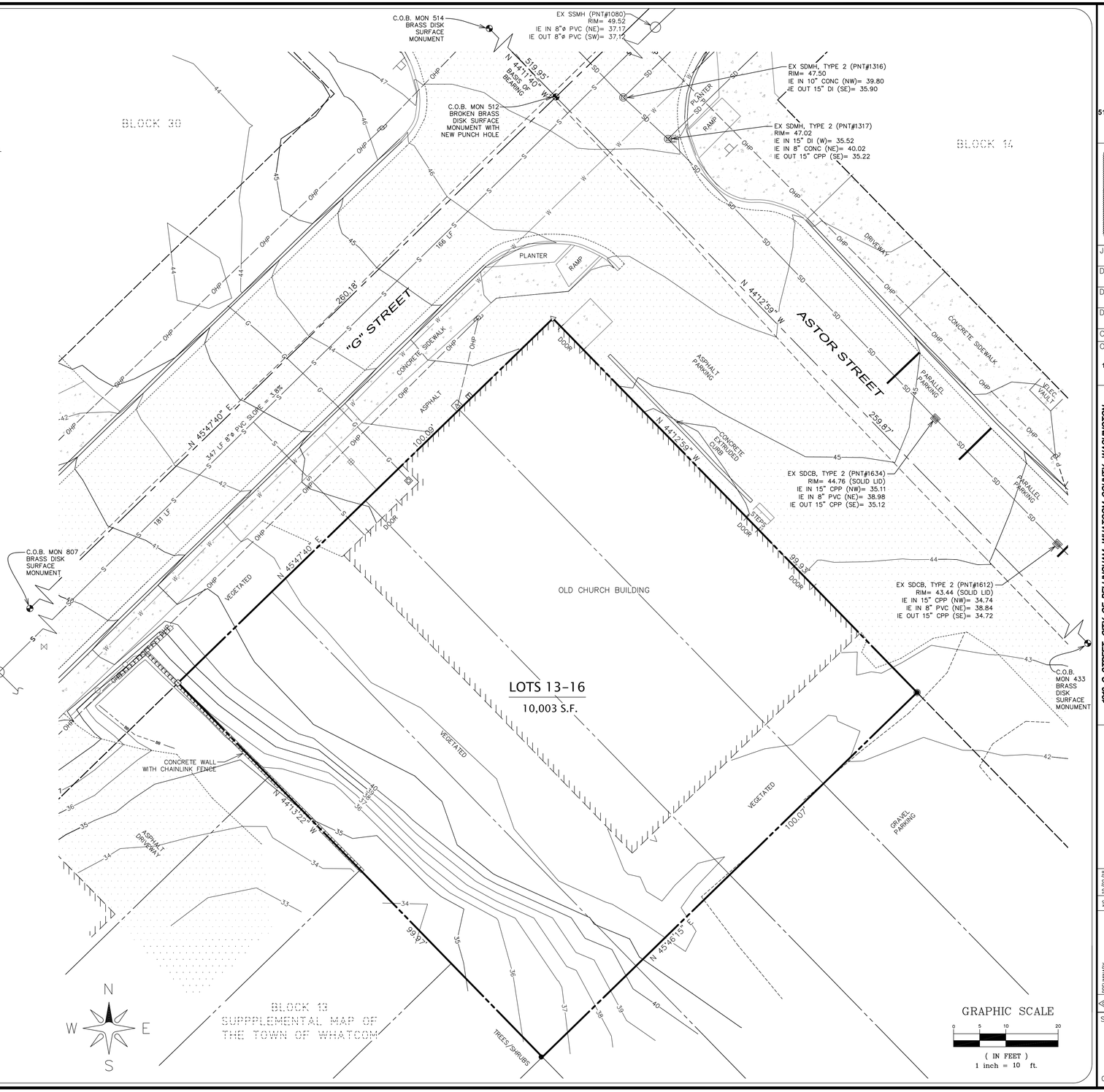
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SITUATE IN WHATCOM COUNTY, WASHINGTON.



GRAPHIC SCALE
0 5 10 20
(IN FEET)
1 inch = 10 ft.

LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDALE, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

KYLE T. HAGGITH
STATE OF WASHINGTON
20096
REGISTERED
PROFESSIONAL LAND SURVEYOR

JOB NO.:	1856
DWG. NAME:	1856-SV-BASE-2.dwg
DESIGNED BY:	–
DRAWN BY:	NC
CHECKED BY:	KH

OWNER:
MATS HAREZLAK
1642 EMERALD LAKE WAY
BELLINGHAM, WA 98226

1310 G STREET, CITY OF BELLINGHAM, WHATCOM COUNTY, WASHINGTON

HARBORSIDE APARTMENTS

EXISTING CONDITIONS

NO.	REVISION	BY	DATE
1	PRELIMINARY	NC	10/02/18
2	REFINED TOPO, SHOWED SHOP	NC	03/27/19
3			
4			
5			
6			

SHEET 02 OF 11

\\SERVER\Share\Common\Land Projects 2018\1856 - 1310 G Street\dwg\1856-SV-BASE-2.dwg PLOT DATE:7/15/2020 3:45 PM

\\SERVER\Share\Common\Land Projects 2018\1856 - 1310 G Street\dwg\1856-SV-BASE-2.dwg EXCEL 7/15/2020 3:45:59 PM

GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE STANDARD PLANS AND SPECIFICATIONS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) (LATEST EDITION) AND THE CITY OF BELLINGHAM STANDARDS UNLESS SPECIFICALLY INDICATED OTHERWISE BY THESE PLANS.
2. IN CASE OF A CONFLICT BETWEEN THE REGULATORY STANDARDS OR SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT WILL PREVAIL.
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL CONSTRUCTION EASEMENTS AND PERMITS NECESSARY TO PERFORM THE WORK.
4. FRANCHISED UTILITIES OR OTHER INSTALLATIONS THAT ARE NOT SHOWN ON THESE APPROVED PLANS SHALL NOT BE CONSTRUCTED UNLESS A PERMIT HAS BEEN ISSUED BY THE CITY OF BELLINGHAM OR ITS DESIGNATED REPRESENTATIVE AGENCY.
5. APPROVAL OF THESE PLANS DOES NOT CONSTITUTE AN APPROVAL OF ANY OTHER CONSTRUCTION NOT SPECIFICALLY SHOWN. THESE PLANS ARE APPROVED FOR STANDARD ROAD, DRAINAGE, AND UTILITY IMPROVEMENTS ONLY. PLANS FOR STRUCTURES SUCH AS BRIDGES, BUILDINGS, VAULTS, ROCKERIES, AND RETAINING WALLS MAY REQUIRE A SEPARATE REVIEW AND APPROVAL BY THE BUILDING DEPARTMENT PRIOR TO CONSTRUCTION.
6. BEFORE ANY CONSTRUCTION OR DEVELOPMENT ACTIVITY, A PRE-CONSTRUCTION MEETING MUST BE HELD BETWEEN THE CITY OF BELLINGHAM ENGINEERING DIVISION, THE OWNER, AND THE ENGINEER.
7. A COPY OF THESE APPROVED PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
8. CONSTRUCTION NOISE SHALL BE LIMITED IN ACCORDANCE WITH LOCAL CODE; OR 7 A.M. TO 7 P.M. ON WEEKDAYS AND 9 A.M. TO 6 P.M. ON WEEKENDS AND LEGAL HOLIDAYS, WHICHEVER IS MORE STRINGENT.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ADJACENT UTILITIES WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO, WATER, SEWER, STORM SEWER, POWER, TELEPHONE, CABLE TV, GAS, IRRIGATION, AND STREET LIGHTING. THE CONTRACTOR SHALL NOTIFY RESIDENTS AND BUSINESSES 48 HOURS IN ADVANCE OF ANY WORK AFFECTING ACCESS OR SERVICE AND SHALL MINIMIZE INTERRUPTIONS TO DRIVEWAYS FOR RESIDENTS AND BUSINESSES ADJACENT TO THE PROJECT.
10. ALL LAWN AND VEGETATED AREAS DISTURBED WILL BE RESTORED TO ORIGINAL CONDITION. ANY DISTURBANCE OR DAMAGE TO OTHER PROPERTY ON ADJACENT PARCELS OR IN THE PUBLIC RIGHT OF WAY SHALL ALSO BE REPAIRED OR RESTORED TO ORIGINAL CONDITION.
11. THE CONTRACTOR SHALL CLEAR, GRUB AND REMOVE ALL UNSUITABLE MATERIAL FROM THE SITE. UNSUITABLE MATERIAL EXCAVATED FROM THE SITE SHALL BE REMOVED BY THE CONTRACTOR, AT HIS EXPENSE, AND PROPERLY DISPOSED OF AT AN APPROVED DISPOSAL SITE.
12. PUBLIC RIGHTS-OF-WAY SHALL BE KEPT IN A CLEAN AND SERVICEABLE CONDITION AT ALL TIMES. IN THE EVENT MATERIALS ARE INADVERTENTLY DEPOSITED ON ROADWAYS, THE MATERIAL SHALL BE PROMPTLY REMOVED. MATERIALS ARE TO BE SWEPT AND REMOVED WITH A VACUUM SWEEPER.
13. PUBLIC AND PRIVATE DRAINAGE WAYS SHALL BE PROTECTED FROM POLLUTION. NO MATERIAL IS TO BE DISCHARGED TO OR DEPOSITED IN STORMWATER SYSTEMS THAT MAY RESULT IN VIOLATION OF STATE OR FEDERAL WATER QUALITY STANDARDS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR. ANY WORK WITHIN THE TRAVELED RIGHT-OF-WAY THAT MAY INTERRUPT NORMAL TRAFFIC FLOW SHALL REQUIRE AT LEAST ONE FLAGGER FOR EACH LANE OF TRAFFIC AFFECTED. SECTION 1-07.23, "TRAFFIC CONTROL," OF THE STANDARD SPECIFICATIONS SHALL APPLY IN ITS ENTIRETY. TRAFFIC CONTROL PLAN IS REQUIRED TO BE APPROVED BY THE CITY OF BELLINGHAM TRAFFIC DIVISION.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING AND MAINTAINING EROSION CONTROL MEASURES (SILT FENCE, STRAW BALE DAMS, SILT PONDS, CATCH BASIN FILTERS, ETC.) AS SHOWN IN THESE PLANS OR AS REQUIRED BY THE CITY OF BELLINGHAM THROUGHOUT THE DURATION OF THE PROJECT. CONTRACTOR SHALL REMOVE THESE BMP'S AT THE END OF THE PROJECT AS REQUIRED.
16. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION STAKING.
17. THE CONTRACTOR SHALL IMPLEMENT ALL REQUIRED TRAFFIC CONTROL DEVICES INCLUDING PAVEMENT MARKINGS AND SIGNS PER CITY OF BELLINGHAM STANDARDS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
18. ALL TRENCH EXCAVATIONS CROSSING EXISTING PAVEMENT SHALL BE CONDUCTED IN ACCORDANCE WITH BELLINGHAM STANDARD PLAN ST-180.
19. ALL TRENCH EXCAVATION SHALL BE ACCORDING TO SECTION 7-08 OF THE STANDARD SPECIFICATIONS. THE BEDDING SHALL BE ACCORDING TO SECTION 7-08 OF THE STANDARD SPECIFICATIONS. THE BEDDING FOR PLASTIC PIPE SHALL BE PEA GRAVEL, ACCORDING TO CITY OF BELLINGHAM STANDARD PLAN NO. SS-750. ALL TRENCH BACKFILL UNDER EXISTING OR FUTURE PAVING SHALL BE BANK RUN GRAVEL FOR TRENCH BACKFILL AND SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY.
20. TRENCH EXCAVATIONS SHALL NOT BE LEFT OPEN OVERNIGHT.
21. CONNECT NEW CONSTRUCTION TO EXISTING AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
22. PLUG ALL CULVERTS, SEWERS, AND CONDUITS PRIOR TO ABANDONMENT.
23. MAXIMUM DENSITY AND OPTIMUM MOISTURE FOR ALL GRANULAR MATERIALS SHALL BE DETERMINED BY ASTM D-1557 TEST METHOD.
24. WHEN PLACING NEW PAVEMENT ADJACENT TO EXISTING PAVEMENT, TACK COAT EDGE OF EXISTING PAVEMENT PRIOR TO PLACEMENT OF NEW PAVEMENT. SEAL FINISHED EDGES PER CITY OF BELLINGHAM STANDARD PLAN ST-180 AND TOP ALL ASPHALT SEALER WITH SAND.
25. PERMANENT WATER QUALITY BMP'S SHALL BE INSTALLED AND FUNCTIONING PRIOR TO PAVING.
26. ALL DIMENSIONS, PAVEMENT MATCH ELEVATIONS, PIPING INVERT ELEVATIONS, AND STRUCTURE RIM AND INVERT ELEVATIONS TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR AND WITH THE ENGINEER. UPON ANY DISCREPANCY FOUND IN THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.

SANITARY SEWER SYSTEM NOTES:

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, CURRENT EDITION, AND THE CITY OF BELLINGHAM DEVELOPMENT GUIDELINES AND IMPROVEMENT STANDARDS AND SHALL BE SUBJECT TO APPROVAL BY THE CITY OF BELLINGHAM.
2. 4 INCH THROUGH 12 INCH PIPE SHALL BE PVC PIPE OR EQUAL CONFORMING TO THE REQUIREMENTS OF SECTION 9-05.12 OF THE STANDARD SPECIFICATIONS.
3. TRENCH EXCAVATION AND PIPE LAYING SHALL BE ACCORDING TO SECTION 7.08 OF THE STANDARD SPECIFICATIONS. THE PIPE BEDDING SHALL BE ACCORDING TO CITY OF BELLINGHAM SPECIFICATION SS-750.
4. ALL SIDE SEWERS SHALL BE CONSTRUCTED AND AS-BUILT ACCORDING TO CITY OF BELLINGHAM SPECIFICATION SS-790, SS-730.
5. ALL TRENCH BACKFILL UNDER EXISTING OR FUTURE PAVEMENT SECTIONS SHALL BE BANK RUN GRAVEL ACCORDING TO STANDARD SPECIFICATION 9-03.19 AND SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY.
6. ALL SEWER PIPE WILL BE AIR PRESSURE TESTED AND SCANNED PRIOR TO PAVING.
7. A DEPOSIT FOR THE PROJECT INSPECTION\PLAN CHECKING AND T.V. SCAN IS REQUIRED.
8. ALL CLEANOUTS WILL BE ACCORDING TO CITY OF BELLINGHAM SPECIFICATION SS- 720.
9. ALL HARD SURFACED AREAS SHALL BE REPAIRED ACCORDING TO CITY OF BELLINGHAM SPECIFICATION ST-180 AT THE CLOSE OF THE WORKED DAY. THE REPAIRS CAN BE TEMPORARY WITH ASPHALT COLD-MIX OR PERMANENT REPAIRS. ALL TEMPORARY REPAIRS MUST BE PERMANENTLY REPAIRED WITHIN TWO WEEKS.
10. ALL WORK MUST BE INSPECTED AND APPROVED BY A REPRESENTATIVE OF THE CITY OF BELLINGHAM PUBLIC WORKS'\ENGINEERING DIVISION. 24 HOURS NOTICE MUST BE GIVEN PRIOR TO STARTING WORK AND\OR TO SCHEDULE INSPECTIONS.

WATER SYSTEM NOTES:

1. THE PETITIONER SHALL CONTRACT WITH A CONTRACTOR LICENSED TO PERFORM THE CONSTRUCTION IN THE STATE OF WASHINGTON TO INSTALL A MAIN EXTENSION AS APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
2. ALL GATE VALVES SHALL BE AWWA APPROVED. GATE VALVES SHALL BE SHORT-BODY VALVES SUITABLE FOR NONSHOCK SHUT-OFF PRESSURE OF 130 PSI, CONFORMING TO AWWA STANDARDS C-515 SUITABLE FOR DIRECT BURIAL WITH A BRONZE CENTER STEM AND STEM NUT.
3. CONTRACTOR SHALL SUBMIT AND FOLLOW D.O.E. FLUSHING PLANS FOR THE PRESSURE TEST AND BACTERIA TEST.
4. WATER SERVICE PIPE 2" DIAMETER OR SMALLER SHALL BE TYPE "K" COPPER TUBING PER WSDOT SPEC 9-30.6(3)A.
5. METER BOX SHALL BE A #2 CONCRETE BOX WITH STEEL LID. METER SHALL BE PURCHASED FROM THE CITY AND WILL BE INSTALLED BY THE CITY WATER DIVISION.

DRAINAGE SYSTEM NOTES:

1. ALL STORM DRAINAGE PIPING SHALL BE SMOOTH-LINED CORRUGATED POLYETHYLENE PIPE (CPEP) AND OF THE DIAMETER SHOWN ON THE PLANS, UNLESS OTHER MATERIAL IS SPECIFIED ON THE PLANS. MATERIALS SHALL MEET THE REQUIREMENTS FOR THE FOLLOWING SPECIFICATIONS AS SHOWN:
   STORM SEWER (4") AASHTO M252
   STORM SEWER (6" & 8") AASHTO M252 TYPE S
   STORM SEWER (12" AND ABOVE) AASHTO M294 TYPE S
2. BEDDING AND BACKFILL FOR CPEP STORM PIPE SHALL CONFORM TO STANDARD PLAN SS-750.
3. ALL PIPE AND APPURTENANCES SHALL BE LAID ON A PROPERLY PREPARED FOUNDATION IN ACCORDANCE WITH WSDOT 7-02.3(1). THIS SHALL INCLUDE LEVELING AND COMPACTING THE TRENCH BOTTOM, THE TOP OF THE FOUNDATION MATERIAL, AND ANY REQUIRED PIPE BEDDING TO A UNIFORM GRADE SO THAT THE ENTIRE PIPE IS SUPPORTED BY A UNIFORMLY DENSE UNYIELDING BASE.
4. CATCH BASINS SHALL MEET THE REQUIREMENTS OF WSDOT 7-05. AND CITY OF BELLINGHAM STANDARDS.
5. ALL CATCH BASINS SHALL HAVE GRATE LIDS UNLESS OTHERWISE NOTED.
6. PIPE LENGTHS SHOWN ON PLANS ARE TO THE CENTER OF THE STRUCTURE.
7. ANY MISCELLANEOUS STORMWATER SOURCES NOT SHOWN ON PLANS THAT ARE FOUND DURING CONSTRUCTION WILL BE REQUIRED TO BE REMOVED OR CONNECTED TO THE NEW DRAINAGE SYSTEM WITH THE DIRECTION OF THE ENGINEER.
8. ALL CATCH BASINS CAPABLE OF ACCEPTING STORMWATER SHALL BE STENCILED WITH THE CITY OF BELLINGHAM STANDARD STENCIL "DUMP NO WASTE – DRAINS TO STREAM", OR LATEST WORDING.
9. PERFORATED PIPE SHALL BE PERFORATED PVC UNDERDRAIN PIPE PER WSDOT SPEC 9-05.2(6). THE PERFORATIONS SHALL NOT BE LARGER THAN ½" IN DIAMETER.

EXISTING UTILITY NOTES:

1. THE CONTRACTOR IS CAUTIONED THAT UNDERGROUND UTILITIES MAY EXIST IN THE CONSTRUCTION AREA WHICH MAY INTERFERE WITH THE EXCAVATION AND GRADING OPERATIONS. THE CONTRACTOR SHALL CALL FOR A UTILITIES LOCATE AT 1-800-424-5555 TWO (2) BUSINESS DAYS BEFORE COMMENCING SITE CONSTRUCTION WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND PROTECTION OF UTILITIES DURING HIS WORK. EXISTING UTILITIES THAT ARE NOT IN USE AND WILL NOT BE USED FOR THIS PROJECT OR FUTURE PROJECTS SHALL BE PROPERLY SEALED AND ABANDONED. SUCH ABANDONMENT SHALL BE COORDINATED WITH THE OWNER OR APPROPRIATE UTILITY COMPANY.
2. THE LOCATION OF EXISTING UTILITIES SHOWN IS APPROXIMATE. EXISTING UTILITIES THAT WILL BE USED FOR THIS PROJECT SHALL BE LOCATED BY POT HOLING TO VERIFY THE LOCATION, DEPTH, SIZE AND TYPE OF MATERIAL AND GENERAL CONDITION PRIOR TO TYING IN OR CONSTRUCTING OTHER UTILITIES NEARBY.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

REQUIRED INSPECTIONS:

THE CONTRACTOR SHALL PROVIDE 24 HOURS NOTICE TO THE CITY OF BELLINGHAM PUBLIC WORKS INSPECTOR BEFORE STARTING WORK AND TO SCHEDULE INSPECTIONS.

THE CONTRACTOR SHALL CONTACT THE ENGINEER 48 HOURS PRIOR TO THE FOLLOWING REQUIRED INSPECTIONS:

1. PRE-CONSTRUCTION MEETING AFTER APPROVAL OF THESE PLANS AND BEFORE ANY WORK BEGINS.
2. AFTER THE INSTALLATION OF THE WATER AND SEWER LINES AND PRIOR TO BACKFILLING.
3. AFTER THE INSTALLATION OF THE STORM WATER LINES
4. FINAL INSPECTION AFTER COMPLETION OF THE SUBSTANTIAL PORTION OF THE WORK BUT IN TIME TO MAKE ANY NECESSARY CHANGES.
5. SUBGRADE CERTIFICATION LETTER SIGNED BY CONTRACTORS ENGINEER PRIOR TO PAVING.

CITY OF BELLINGHAM TESC NOTES:

1. STABILIZATION & SEDIMENT TRAPPING. ALL EXPOSED SOILS SHALL BE STABILIZED BY SUITABLE APPLICATION OF BMP'S. FROM OCTOBER 1 TO APRIL 30, NO SOILS SHALL REMAIN UNEXPOSED FOR MORE THAN 2 DAYS. FROM MAY 1 TO SEPTEMBER 30, NO SOILS SHALL REMAIN EXPOSED FOR MORE THAN 7 DAYS. PRIOR TO LEAVING THE SITE, STORMWATER RUNOFF SHALL PASS THROUGH A SEDIMENT POND, TRAP OR OTHER APPROPRIATE BMP.
2. DELINEATE CLEARING & EASEMENT LIMITS. IN THE FIELD, STAKE AND FLAG CLEARING LIMITS AND/OR ANY EASEMENTS, SETBACKS, SENSITIVE/CRITICAL AREAS AND THIER BUFFERS, TREES AND DRAINAGE COURSES.
3. PROTECTION OF ADJACENT PROPERTIES. PROPERTIES ADJACENT TO THE PROJECT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION.
4. TIMING & STABILIZATION OF SEDIMENT TRAPPING MEASURES. SEDIMENT PONDS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS, AND OTHER BMP'S INTENDED TO TRAP SEDIMENT ON-SITE SHALL BE CONSTRUCTED AS A FIRST STEP IN GRADING. THESE BMP'S SHALL BE FUNCTIONAL BEFORE LAND DISTURBING ACTIVITIES TAKE PLACE. EARTH STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS SHALL BE SEEDED AND MULCHED ACCORDING TO THE TIMING INDICATED IN NO. 1 ABOVE.
5. CUT & FILL SLOPES. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. IN ADDITION, SLOPES SHALL BE STABILIZED IN ACCORDANCE WITH NO. 1 ABOVE.
6. CONTROLLING OFF-SITE EROSION. PROPERTIES AND WATERWAYS DOWNSTREAM FROM THE DEVELOPMENT SITES SHALL BE PROTECTED FROM EROSION DUE TO INCREASES IN THE VOLUME, VELOCITY, AND PEAK FLOW RATE OF STORMWATER RUNOFF FROM THE PROJECT SITE.
7. STABILIZATION OF TEMPORARY CONVEYANCE CHANNELS & OUTLETS. ALL TEMPORARY ON-SITE CONVEYANCE CHANNELS SHALL BE DESIGNED, CONSTRUCTED AND STABILIZED TO PREVENT EROSION FROM THE EXPECTED VELOCITY OF FLOW FROM A 2-YEAR, 24-HOUR FREQUENCY STORM FOR THE DEVELOPED CONDITION. STABILIZATION ADEQUATE TO PREVENT EROSION OF OUTLETS, ADJACENT STREAMBANKS, SLOPES AND DOWNSTREAM REACHES SHALL BE PROVIDED AT THE OUTLETS OF ALL CONVEYANCE SYSTEMS.
8. STORM DRAIN INLET PROTECTION. ALL STORM DRAIN INLETS MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT STORMWATER RUNOFF SHALL NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
9. UNDERGROUND UTILITY CONSTRUCTION. THE CONSTRUCTION OF UNDERGROUND UTILITY LINES SHALL BE SUBJECT TO THE FOLLOWING CRITERIA; WHERE FEASIBLE, NO MORE THAN 500 FEET OF TRENCH SHALL BE OPENED AT ONE TIME; WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES; AND TRENCH DEWATERING DEVICES SHALL DISCHARGE INTO A SEDIMENT TRAP OR SEDIMENT POND.
10. CONSTRUCTION ACCESS ROUTES. WHEREVER CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED ROADS, PROVISIONS MUST BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT (MUD) ONTO THE PAVED ROAD. IF SEDIMENT IS TRANSPORTED ONTO A ROAD SURFACE, THE ROADS SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
11. REMOVAL OF TEMPORARY BMP'S. ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER TEMPORARY BMP'S ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.
12. DEWATERING CONSTRUCTION SITES. DEWATERING DEVICES SHALL DISCHARGE INTO A SEDIMENT TRAP OR SEDIMENT POND.
13. CONTROL OF POLLUTANTS OTHER THAN SEDIMENT ON CONSTRUCTION SITES. ALL POLLUTANTS OTHER THAN SEDIMENT THAT OCCUR ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORMWATER.
14. MAINTENANCE. ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMP'S SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.
15. FINANCIAL LIABILITY. PERFORMANCE BONDING, OR OTHER APPROPRIATE FINANCIAL INSTRUMENTS, SHALL BE REQUIRED FOR ALL PROJECTS TO ENSURE COMPLIANCE WITH THE APPROVED TESC PLAN.

EROSION AND SEDIMENT CONTROL GENERAL NOTES:

1. EROSION CONTROL METHODS AND MATERIALS SHALL MEET THE REQUIREMENTS OF SECTION 8-01 OF THE 2012 WSDOT/APWA STANDARD SPECIFICATIONS. THE REQUIREMENTS SET FORTH IN VOLUME II OF THE "STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON BY THE WASHINGTON STATE DEPARTMENT OF ECOLOGY, CURRENT EDITION, THE CITY OF BELLINGHAM DEVELOPMENT STANDARDS, THE PROJECT SWPPP AND THIS PLAN, WITH THE MOST EFFECTIVE REQUIREMENTS TAKING PRECEDENCE. THE CONTRACTOR SHALL FOLLOW RECOMMENDATIONS MADE BY SUPPLIERS AND MANUFACTURERS FOR ALL MATERIALS AND EQUIPMENT USED.
2. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO PREVENT SILTY STORMWATER FROM EXITING THE SITE. IF SILT LADEN STORMWATER EXITS THE SITE, CONTACT THE ENGINEER OF RECORD TO IDENTIFY APPROPRIATE MEASURES TO REDUCE SILT-LADEN RUNOFF. IT IS THE CONTRACTOR'S RESPONSIBILITY TO WORK WITH THE PROJECT ENGINEER OR LOCAL JURISDICTION TO COORDINATE FURTHER EROSION CONTROL MEASURES, NOT SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN, THAT MAY BE NECESSARY TO CONTROL SITE RUNOFF.
3. THE EXISTING AND PROPOSED STORM SYSTEMS SHALL BE CLEANED AND MAINTAINED THROUGHOUT CONSTRUCTION AND UNTIL ALL ON-SITE SOILS HAVE BEEN STABILIZED.
4. AT THE END OF ALL SITE CONSTRUCTION, THE CONTRACTOR SHALL FLUSH OUT ALL DEBRIS FROM THE STORM SYSTEM INSTALLED ON-SITE. MATERIAL FLUSHED FROM THE STORM SYSTEM SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN APPROVED DISPOSAL SITE. FLUSHING OPERATION SHALL BE PERFORMED USING A VACTOR TRUCK.

CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN:

ELEMENT 1: PRESERVE VEGETATION / MARK CLEARING LIMITS

THE EXISTING SITE CONSISTS OF ASPHALT PAVEMENT, EXISTING WAREHOUSE AND EXISTING STORM STRUCTURES. NO SENSITIVE AREAS OR BUFFERS EXIST WITHIN THE PROJECT SITE. ANY AREAS PROPOSED TO REMAIN IN THEIR CURRENT CONDITION WILL BE CLEARLY MARKED PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES, WHICH INCLUDES CLEARING AND GRADING. THESE AREAS WILL BE CLEARLY MARKED, BOTH IN THE FIELD AND ON-SITE PLANS, TO PREVENT DAMAGE AND OFFSITE IMPACTS. CONSTRUCTION FENCING WILL BE PROVIDED AROUND THE PROJECT SITE UNTIL PROJECT COMPLETION.

ELEMENT 2: ESTABLISH CONSTRUCTION ACCESS

(A) CONSTRUCTION VEHICLE ACCESS WILL BE LIMITED TO ASTOR STREET.

(B) IT IS ANTICIPATED THAT THE CONTRACTOR WILL USE RUMBLE PANS (SHAKER PANS) AS NEEDED FOR SEDIMENT REMOVAL.

(C) A TIRE BATH OR WHEEL WASH DOES NOT APPEAR TO BE NEEDED AS ITS LIKELY THE CONTRACTOR WILL UTILIZE A STABILIZED ASPHALT AREA OR THE ADJACENT STABILIZED GRAVEL PARKING ADJACENT TO THIS PROJECT FOR MOST OF CONSTRUCTION TRAFFIC. IF FOUND NECESSARY DURING CONSTRUCTION, TIRE BATHS OR WHEEL WASHES WILL BE LOCATED ON-SITE. IF ON-SITE IS INFEASIBLE, THE CONTRACTOR WILL NEED TO OBTAIN PRIOR APPROVAL FROM COB TO PLACE THEM WITHIN THE ROW.

(D) IF SEDIMENT IS TRACKED OFFSITE, PUBLIC ROADS SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY, OR MORE FREQUENTLY DURING WET WEATHER, TO PREVENT SEDIMENT FROM ENTERING TRIBUTARY WATERS. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND SHALL BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA ON-SITE OR AN APPROVED OFFSITE LOCATION. STREET WASHING WILL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.

(E) STREET WASHING WILL ONLY BE ALLOWED AFTER SEDIMENT IS REMOVED AS DESCRIBED IN (D) ABOVE. THE RESULTING WASTEWATER WILL BE DISPOSED OF AT AN APPROVED SITE.

(F) STREET WASH WASTEWATER WILL BE COLLECTED AND DISPOSED OF AT AN APPROVED LOCATION.

ELEMENT 3: CONTROL FLOW RATES

(A) FLOW CONTROL IS NOT REQUIRED FOR THIS PROJECT AS IT DISCHARGES TO A SALTWATER BODY. TEMPORARY STORAGE DEPRESSIONS, SEDIMENT TRAPS OR BAKER TANKS MAY BE USED IF STORMWATER RUNOFF IS FOUND TO BE LEAVING THE SITE. IF THE CONTRACTOR, OR IF APPLICABLE, THE CERTIFIED EROSION SEDIMENTATION CONTROL LEAD (CESCL), FINDS THAT TEMPORARY WATER STORAGE IS REQUIRED, THEY SHALL CONTACT THE ENGINEER OF RECORD (EOR) TO IDENTIFY AND LOCATE A STORAGE SOLUTION.

(B) NO FLOW CONTROL IS PROPOSED AT THIS TIME. TESC BMP'S SHALL BE IMPLEMENTED AS EARLY AS POSSIBLE TO PROTECT DOWNSTREAM SYSTEMS.

(C) STORMWATER RETENTION/DETENTION FACILITIES ARE NOT PROPOSED FOR THIS PROJECT.

(D) INFILTRATION FACILITIES ARE NOT PROPOSED FOR THIS PROJECT.

ELEMENT 4: INSTALL SEDIMENT CONTROLS

(A) SEDIMENT CONTROL BMPS OUTLINED IN THE SWPP WILL BE USED TO MAINTAIN TO CONTROL SEDIMENTS.

(B) IT IS ANTICIPATED THAT BAKER TANKS WILL BE USED AS THE PRIMARY SEDIMENT CONTROL FOR THE PROJECT. ANY SILT FENCING PROPOSED WILL BE INSTALLED PRIOR TO LAND DISTURBANCES OR PROJECT GRADING. INLET PROTECTION IN EXISTING AND PROPOSED CATCH BASINS WITHIN THE VICINITY WILL BE UTILIZED TO HELP PREVENT SEDIMENT FROM ENTERING THE TRIBUTARY WATERS. IF THE CONTRACTOR WOULD LIKE TO USE ANOTHER SEDIMENT CONTROL BMP, THEY SHALL SUBMIT TO THE EOR AND CITY OF BELLINGHAM THE SEDIMENT CONTROL BMP FOR APPROVAL.

(C) THE CONTRACTOR SHALL MINIMIZE SEDIMENT DISCHARGE FROM THE SITE THROUGHOUT THE DURATION OF THE PROJECT. THIS INCLUDES PROPER MAINTENANCE OF THE CONSTRUCTION SITE, PARKING/STAGING AREA, AND ROAD WORK THROUGH BMP C107.

(D) IT IS ANTICIPATED THAT BAKER TANKS WILL BE USED FOR SEDIMENT CONTROL DURING CONSTRUCTION.

(E) NOT APPLICABLE TO THIS PROJECT

(F) WHERE FEASIBLE, DESIGN OUTLET STRUCTURES THAT WITHDRAW ANY PONDED STORMWATER FROM THE SURFACE TO AVOID DISCHARGING SEDIMENT THAT IS STILL SUSPENDED LOWER IN THE WATER COLUMN.

ELEMENT 5: STABILIZE SOILS

(A) ALL EXCAVATED SOILS WILL BE HAULED OFFSITE DURING CONSTRUCTION. NO STOCKPILING IS ANTICIPATED. EXPOSED SOILS WITHIN THE EXCAVATED FOUNDATION WILL BE COVERED WITH PLASTIC COVERING. GRAVEL BASE WILL BE INSTALLED AS EARLY AS POSSIBLE ON PAVED AREAS FOR DUST CONTROL.

(B) PLASTIC SHEETING ON EXPOSED SOILS WILL BE USED TO MINIMIZE EROSION.

(C) STORMWATER DISCHARGE WILL BE CONTROLLED BY THE BAKER TANKS.

(D) FROM OCTOBER 1 THROUGH APRIL 30, NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN 2 DAYS. FROM MAY 1 TO SEPTEMBER 30, NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN 7 DAYS. THIS CONDITION APPLIES TO ALL SOILS ON SITE, WHETHER AT FINAL GRADE OR NOT. SOILS SHALL BE STABILIZED AT THE END OF THE SHIFT BEFORE A HOLIDAY OR WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST.

(E) ANY EXPOSED SOILS SHALL BE STABILIZED AT THE END OF SHIFT BEFORE A HOLIDAY OR WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST.

(F) THE CONTRACTOR SHALL MINIMIZE THE AMOUNT OF SOIL EXPOSED DURING CONSTRUCTION TO THE MAXIMUM EXTENT FEASIBLE.

(G) NO STEEP SLOPES ARE ANTICIPATED TO BE DISTURBED WITH THIS PROJECT

(H) MOST OF THIS PROJECT WILL BE A NEW BUILDING OR NEW HARD SURFACES. IT WILL BE INFEASIBLE TO MINIMIZE SOIL COMPACTION OR PRESERVE TOPSOIL.

(I) APPLICABLE PRACTICES INCLUDE, BUT ARE NOT LIMITED TO, TEMPORARY AND PERMANENT SEEDING, SODDING, MULCHING, PLASTIC COVERING, SOIL APPLICATION OF POLYACRYLAMIDE (PAM), EARLY ALLOCATION OF GRAVEL BASE ON AREAS TO BE PAVED, AND DUST CONTROL.

(J) SOIL STABILIZATION MEASURES, OUTSIDE OF PLASTIC COVERING, SHOULD BE APPROPRIATE FOR THE TIME OF YEAR, SITE CONDITIONS, ESTIMATED DURATION OF USE, AND POTENTIAL WATER QUALITY IMPACTS THAT STABILIZATION AGENTS MAY HAVE ON DOWNSTREAM WATER OR GROUNDWATER.

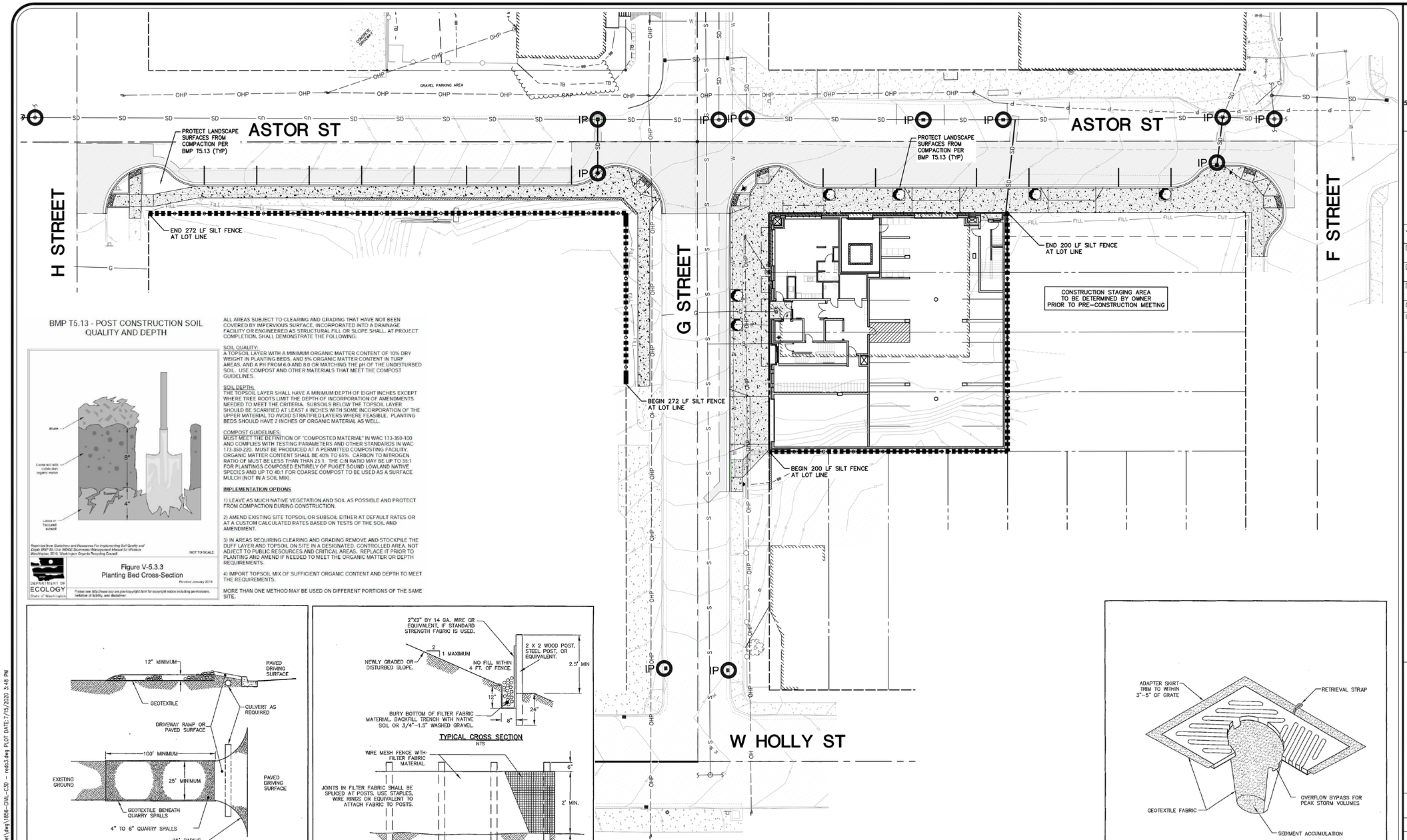
(K) SOIL STOCKPILING IS NOT ANTICIPATED FOR THIS PROJECT. IF SOIL NEEDS TO BE STOCKPILED, SOIL STOCKPILES MUST BE STABILIZED AND PROTECTED WITH SEDIMENT TRAPPING MEASURES AND, WHERE POSSIBLE, LOCATED AWAY FROM STORM DRAIN INLETS, WATERWAYS AND DRAINAGE CHANNELS.

(L) WORK ON CONSTRUCTION SITES AND ACTIVITIES, INCLUDING RIGHT-OF-WAY AND EASEMENT CLEARING, ROADWAY DEVELOPMENT, PIPELINES, AND TRENCHING FOR UTILITIES, SHALL NOT EXCEED THE CAPABILITY OF THE INDIVIDUAL CONTRACTOR FOR HIS PORTION OF THE PROJECT TO INSTALL THE BEDDING MATERIALS, ROADBEDS, STRUCTURES, PIPELINES, AND CUT UTILITIES, AND TO RESTABILIZE THE DISTURBED SOILS, MEETING THE TIMING CONDITIONS LISTED ABOVE.

(M) IN ADDITION, AT THE DISCRETION OF THE PUBLIC WORKS DIRECTOR, THOSE SITES UNABLE TO MAINTAIN THE QUALITY OF THEIR STORMWATER DISCHARGE MAY BE REQUIRED TO PROVIDE SOIL STABILIZATION TO ALL EXPOSED SOIL AREAS REGARDLESS OF THE WORKING STATUS OF THE AREA, UPON WRITTEN NOTIFICATION, THE PROPERTY OWNER SHALL PROVIDE FULL STABILIZATION OF ALL EXPOSED SOIL AREAS WITHIN 24 HOURS.

ELEMENT 6: PROTECT SLOPES

(A) CUT AND FILL SLOPES SHALL BE DESIGNED TO MINIMIZE ERO



BMP T5.13 - POST CONSTRUCTION SOIL QUALITY AND DEPTH

Reprinted from Guidelines and Resources For Implementing Soil Quality and Depth BMP T5.13 in WDOE Stormwater Management Manual for Western Washington, 2015. Washington Organic Recycling Council

NOT TO SCALE

Figure V-5.3.3
Planting Bed Cross-Section

Revised January 2016

DEPARTMENT OF ECOLOGY
State of Washington

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ALL AREAS SUBJECT TO CLEARING AND GRADING THAT HAVE NOT BEEN COVERED BY IMPERVIOUS SURFACE, INCORPORATED INTO A DRAINAGE FACILITY OR ENGINEERED AS STRUCTURAL FILL OR SLOPE SHALL AT PROJECT COMPLETION, SHALL DEMONSTRATE THE FOLLOWING:

SOIL QUALITY:
A TOPSOIL LAYER WITH A MINIMUM ORGANIC MATTER CONTENT OF 10% DRY WEIGHT IN PLANTING BEDS, AND 8% ORGANIC MATTER CONTENT IN TURF AREAS, AND A PH FROM 6.0 AND 8.0 OR MATCHING THE pH OF THE UNDISTURBED SOIL. USE COMPOST AND OTHER MATERIALS THAT MEET THE COMPOST GUIDELINES.

SOIL DEPTH:
THE TOPSOIL LAYER SHALL HAVE A MINIMUM DEPTH OF EIGHT INCHES EXCEPT WHERE TREE ROOTS LIMIT THE DEPTH OF INCORPORATION OF AMENDMENTS NEEDED TO MEET THE CRITERIA. SUBSOILS BELOW THE TOPSOIL LAYER SHOULD BE SCARIFIED AT LEAST 4 INCHES WITH SOME INCORPORATION OF THE UPPER MATERIAL TO AVOID STRATIFIED LAYERS WHERE FEASIBLE. PLANTING BEDS SHOULD HAVE 2 INCHES OF ORGANIC MATERIAL AS WELL.

COMPOST GUIDELINES:
MUST MEET THE DEFINITION OF "COMPOSTED MATERIAL" IN WAC 173-350-100 AND COMPLIES WITH TESTING PARAMETERS AND OTHER STANDARDS IN WAC 173-350-220. MUST BE PRODUCED AT A PERMITTED COMPOSTING FACILITY. ORGANIC MATTER CONTENT SHALL BE 40% TO 65%. CARBON TO NITROGEN RATIO OF MUST BE LESS THAN THAN 25:1. THE C:N RATIO MAY BE UP TO 35:1 FOR PLANTINGS COMPOSED ENTIRELY OF PUGET SOUND LOWLAND NATIVE SPECIES AND UP TO 40:1 FOR COARSE COMPOST TO BE USED AS A SURFACE MULCH (NOT IN A SOIL MIX).

IMPLEMENTATION OPTIONS

1) LEAVE AS MUCH NATIVE VEGETATION AND SOIL AS POSSIBLE AND PROTECT FROM COMPACTION DURING CONSTRUCTION.

2) AMEND EXISTING SITE TOPSOIL OR SUBSOIL EITHER AT DEFAULT RATES OR AT A CUSTOM CALCULATED RATES BASED ON TESTS OF THE SOIL AND AMENDMENT.

3) IN AREAS REQUIRING CLEARING AND GRADING REMOVE AND STOCKPILE THE DUFF LAYER AND TOPSOIL ON SITE IN A DESIGNATED, CONTROLLED AREA. NOT ADJECT TO PUBLIC RESOURCES AND CRITICAL AREAS. REPLACE IT PRIOR TO PLANTING AND AMEND IF NEEDED TO MEET THE ORGANIC MATTER OR DEPTH REQUIREMENTS.

4) IMPORT TOPSOIL MIX OF SUFFICIENT ORGANIC CONTENT AND DEPTH TO MEET THE REQUIREMENTS.

MORE THAN ONE METHOD MAY BE USED ON DIFFERENT PORTIONS OF THE SAME SITE.

PLAN
NTS

NOTES:

1. PAD SHALL BE REMOVED AND REPLACED WHEN SOIL IS EVIDENT ON THE SURFACE OF THE PAD OR AS DIRECTED BY THE CITY.
2. PAD SHALL BE INSTALLED IN PLANTING STRIP AS APPROPRIATE.
3. PAD THICKNESS SHALL BE INCREASED IF SOIL CONDITIONS DICTATE OR PER THE DIRECTION OF THE CITY.
4. MINIMUM DIMENSIONS MAY BE MODIFIED AS REQUIRED BY SITE CONDITIONS UPON APPROVAL OF THE CITY.

APPROVED		CITY OF BELLINGHAM	DRAWING
City Engineer	Date	TEMPORARY CONSTRUCTION EXIT-PLAT/COMMERCIAL	EC-600

TYPICAL CROSS SECTION
NTS

ELEVATION
NTS

NOTES:

1. FENCE SHALL NOT BE INSTALLED ON SLOPES STEEPER THAN 2:1.
2. JOINTS IN FILTER FABRIC SHALL BE OVERLAPPED 6 INCHES AT POST.
3. USE STAPLES, WIRE RINGS, OR EQUIVALENT, TO ATTACH FABRIC TO WIRE FENCE.
4. REMOVE SEDIMENT WHEN IT REACHES 1/3 FENCE HEIGHT.

APPROVED		CITY OF BELLINGHAM	DRAWING
City Engineer	Date	REINFORCED SILT FENCE	EC-615

GRAPHIC SCALE
0 10 20 40
(IN FEET)
1 inch = 20 ft.

NOTE:
1. SEE SHEET 3 FOR TESC NOTES AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP).

TESC LEGEND:

IP = INLET PROTECTION PROTECT NEW STRUCTURES AS THEY ARE INSTALLED

= SEDIMENT FENCE

NOTES:

1. INSERT SHALL BE INSTALLED PRIOR TO CLEARING AND GRADING ACTIVITY, OR UPON PLACEMENT OF A NEW CATCH BASIN.
2. SEDIMENT SHALL BE REMOVED FROM THE UNIT WHEN IT BECOMES HALF FULL.
3. SEDIMENT REMOVAL SHALL BE ACCOMPLISHED BY REMOVING THE INSERT, EMPTYING, AND RE-INSERTING IT INTO THE CATCH BASIN.

APPROVED		CITY OF BELLINGHAM	DRAWING
City Engineer	Date	CATCH BASIN INSERT	EC-620

LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDALE, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

RAMON LLANOS — STATE OF WASHINGTON — 20020 — REGISTERED PROFESSIONAL ENGINEER

7/15/20

JOB NO.: 1856
DWG. NAME: 1856-CIVIL-C3D - redo3.dwg
DESIGNED BY: RS/RL
DRAWN BY: RS/EH
CHECKED BY: RL
OWNER:
MATS HAREZLAK
1642 EMERALD LAKE WAY
BELLINGHAM, WA 98226

1310 G STREET, CITY OF BELLINGHAM, WHATCOM COUNTY, WASHINGTON
HARBORSIDE APARTMENTS 1310 G ST
ON-SITE CIVIL PLANS
TEMPORARY EROSION CONTROL PLAN & DETAILS

NO.	REVISION	BY	DATE
1	CIVIL SUBMITTAL 1	RS	07/15/20
2	CIVIL SUBMITTAL 2	RS	10/22/20

SHEET 04
OF 11

R:\Common\Land Projects 2018\1856 - 1310 G Street\Civil\1856-CIVIL-C3D - redo3.dwg PLOT DATE:7/15/2020 3:48 PM

ASTOR STREET

ASTOR STREET

H STREET

G STREET

F STREET

WEST HOLLY STREET

ADA RAMP
R=20'
R=15'
10'
11'
7'
8'
22' STALL
30' ROW
NOTE: NO MARKINGS FOR STALLS SHALL BE INSTALLED, THEY ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.
LANDSCAPE ISLAND
20' DRIVEWAY
CRITICAL DESIGN POINT. EX CURB PROJECTS THE FARTHEST HERE. PROPOSED CURB 36' FROM THIS POINT.
COB MON. 512 EXISTING MONUMENT DO NOT DISTURB SEE NOTE THIS SHEET
GRAVEL PARKING AREA
CONCRETE PAD
CONCRETE DRIVEWAY
GRASS/LAWN
GARDEN
METERS
BRUSH/TREES
RELOCATE EX STOP SIGN NEAR NEW CURB BULB
EXISTING POWER POLE TO REMAIN
REPLACE EX CURB & GUTTER
STREET TREES PER COB 20.12.030 LANDSCAPING REQUIREMENTS 5'X5' TREE WELLS, TYP.
OIL/WATER SEPARATOR FOR TRANSFORMER. (BASEMENT FLOOR)
TRANSFORMER ROOM
GARBAGE LOCATION
GARAGE DOOR TO GROUND FLOOR
FRONT LOBBY
SPRINKLER ROOM
SEE ARCHITECTURAL PLANS FOR CURRENT BUILDING INFORMATION. BUILDING INTERIOR SHOWN HERE IS FOR REFERENCE ONLY.
GROUND LEVEL PARKING
GARAGE DOOR TO BASEMENT FLOOR
RAMP DOWN TO BASEMENT FLOOR ->
OIL/WATER SEPARATOR FOR FLOOR DRAINS (BASEMENT FLOOR)
EXISTING RETAINING WALL TO BE REPLACED WITH PROPOSED BUILDING FOUNDATION WALL, SEE STRUCTURAL PLANS
PROPOSED RETAINING WALL W/ FENCE. REMOVE EXISTING WALL WITHIN RIGHT-OF-WAY. OWNER CONSENT TO BE PROVIDED.
FILL AREA & LANDSCAPE
NOTE: Separate permit required.
INSTALL "NO PARKING" SIGN(S) WHERE DIRECTED BY CITY, ALONG SOUTH EAST SIDE OF G STREET.
RELOCATE EX STOP SIGN NEAR NEW CURB BULB
EX LIGHT POLE TO REMAIN
EX J-BOX TO BE RELOCATED OR RAISED TO GRADE FOR COB.
PROPOSED TEMPORARY CONSTRUCTION EASEMENT
2:1 DAYLIGHT
PARCEL 380225-538381-0000
EX ASPHALT TO NORTH
EX CONCRETE TO SOUTH
EX DRIVEWAY
26.05' EX DRIVEWAY
16.85' EX DRIVEWAY
PARCEL 380225-519384-0000 1012 W HOLLY ST
PARCEL 380225-525375-0000 1008 W HOLLY ST

GRAPHIC SCALE
0 10 20 40
(IN FEET)
1 inch = 20 ft.

NOTE:
NO MARKINGS FOR STALLS SHALL BE INSTALLED, THEY ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.

MONUMENT NOTE:
- DO NOT DISTURB EXISTING MONUMENT, COB MON. 512
- IF MONUMENT IS DISTURBED AND NEEDS REPLACING, FOLLOW STANDARD LAND SURVEYING PRACTICE TO PRESERVE AND POSSIBLY RE-ESTABLISH THE MONUMENT, TIE OUT MONUMENT AND FILE WITH THE DNR REMOVAL PERMIT AND COMPLETION REPORT.

R:\Common\Land Projects 2018\1856 - 1310 G Street\dwg\1856-CIVIL-C3D - redo3.dwg PLOT DATE:7/15/2020 3:49 PM

LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDALE, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

RAMON LLANOS — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 22820
7/15/20

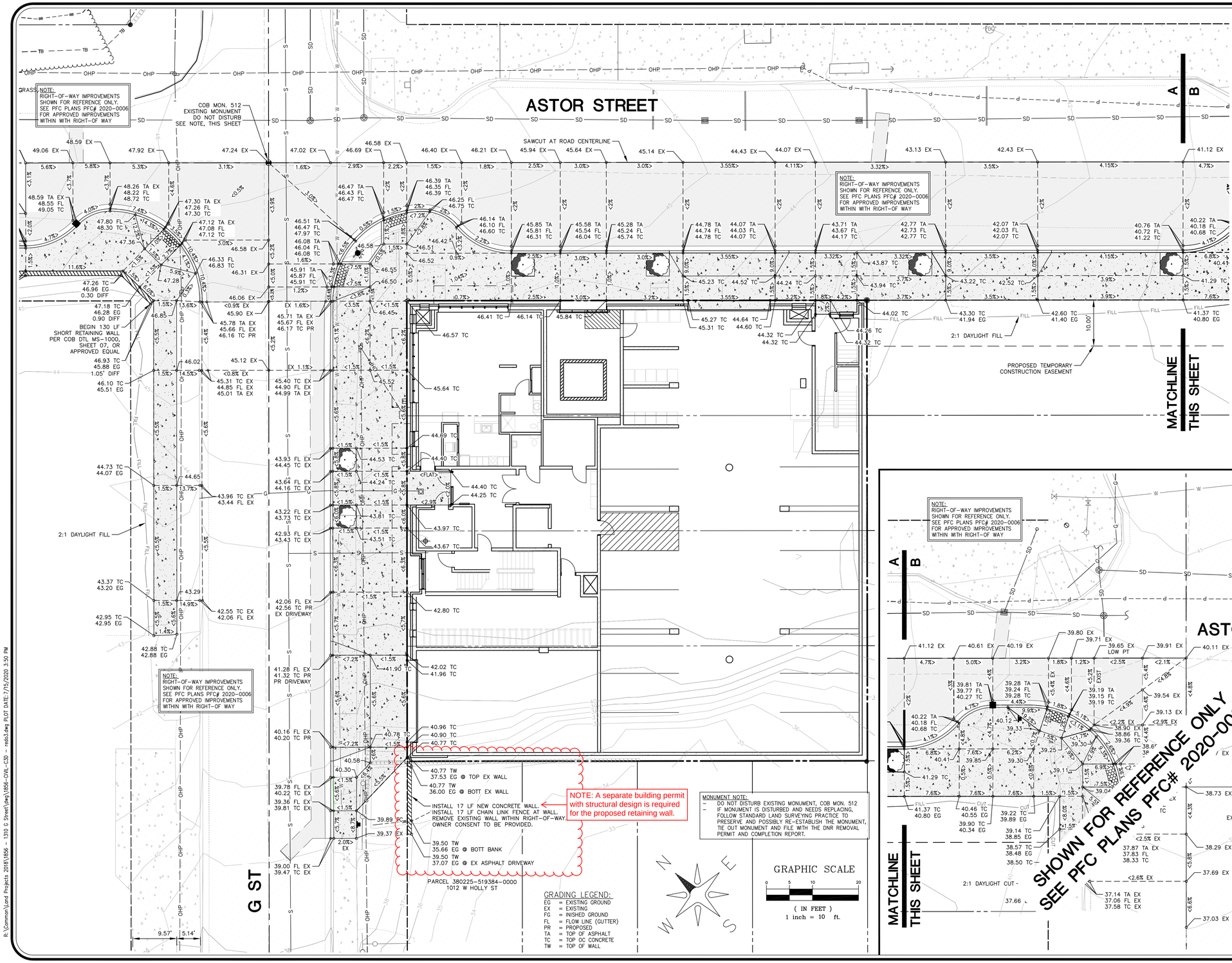
JOB NO.: 1856
DWG. NAME: 1856-CIVIL-C3D - redo3.dwg
DESIGNED BY: RS/RL
DRAWN BY: RS/EH
CHECKED BY: RL
OWNER:
MATS HAREZLAK
1642 EMERALD LAKE WAY
BELLINGHAM, WA 98226

1310 G STREET, CITY OF BELLINGHAM, WHATCOM COUNTY, WASHINGTON

HARBORSIDE APARTMENTS 1310 G ST
ON-SITE CIVIL PLANS
SITE PLAN

NO.	REVISION	BY	DATE
1	CIVIL SUBMITTAL 1	RS	07/22/20
2	CIVIL SUBMITTAL 2	RS	07/15/20

SHEET 05
OF 11



LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDALE, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

RAMON LLANOS — 20020 — REGISTERED PROFESSIONAL ENGINEER
7/15/20

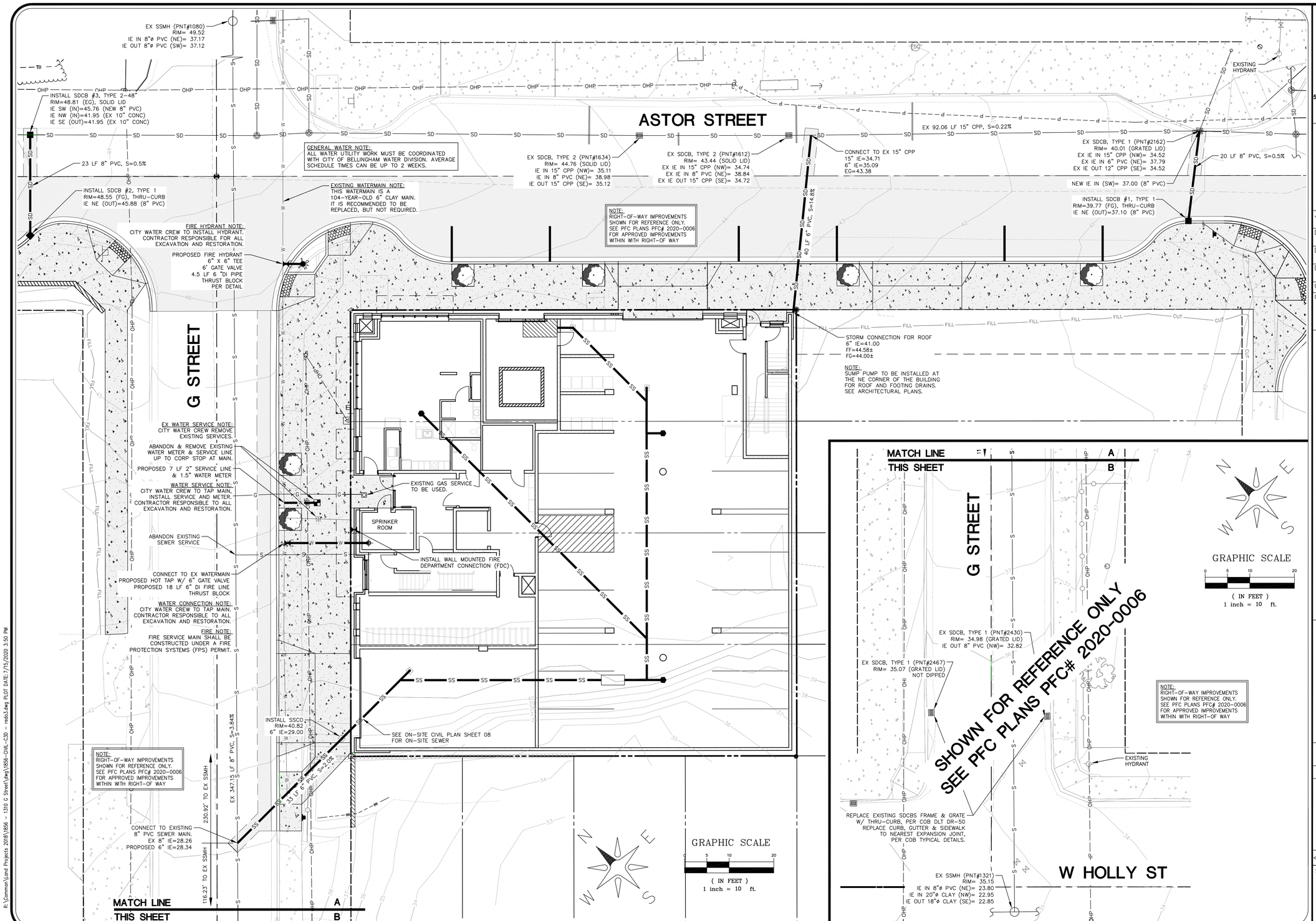
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DWG. NAME: 1856-CIVIL-C3D - redo3.dwg
DESIGNED BY: RS/RL
DRAWN BY: RS/EH
CHECKED BY: RL
OWNER:
MATS HAREZLAK
1642 EMERALD LAKE WAY
BELLINGHAM, WA 98226

1310 G STREET, CITY OF BELLINGHAM, WHATCOM COUNTY, WASHINGTON
HARBORSIDE APARTMENTS 1310 G ST
ON-SITE CIVIL PLANS
GRADING PLAN

NO.	REVISION	BY	DATE
1	CIVIL SUBMITTAL 1	RS	09/23/20
2	CIVIL SUBMITTAL 2	RS	07/15/20

SHEET 06
OF 11

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LDES, INC.
5160 INDUSTRIAL PL. #108
FERDINALE, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

RAMON LLANOS — STATE OF WASHINGTON — 20020 — REGISTERED PROFESSIONAL ENGINEER

7/15/20

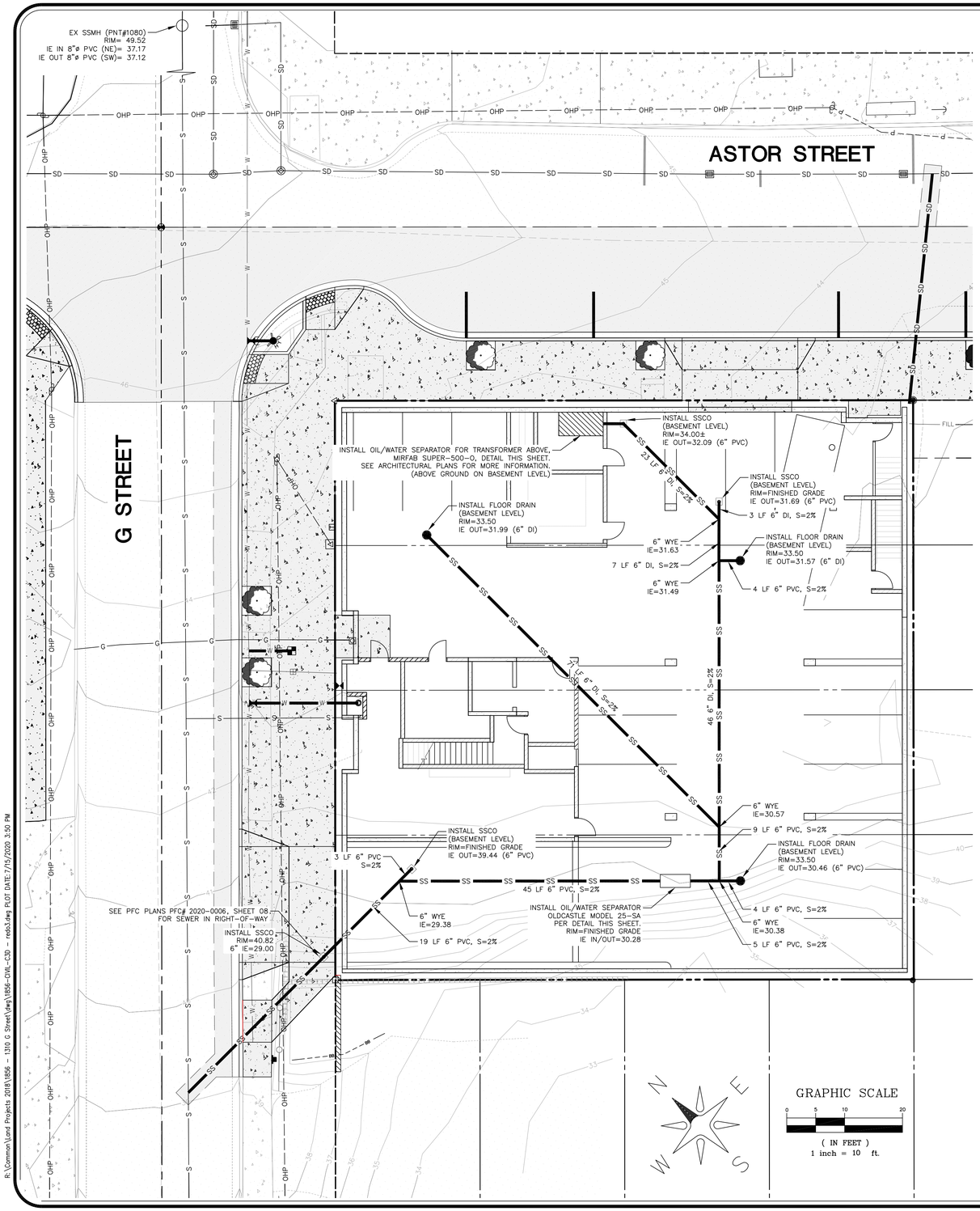
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DESIGNED BY: RS/RL
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CHECKED BY: RL
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1642 EMERALD LAKE WAY
BELLINGHAM, WA 98226

1310 G STREET, CITY OF BELLINGHAM, WHATCOM COUNTY, WASHINGTON
HARBORSIDE APARTMENTS 1310 G ST
ON-SITE CIVIL PLANS
UTILITY PLAN - GROUND FLOOR LEVEL

NO.	REVISION	BY	DATE
1	CIVIL SUBMITTAL 1	RS	07/15/20
2	CIVIL SUBMITTAL 2	RS	10/22/20

SHEET 07
OF 11

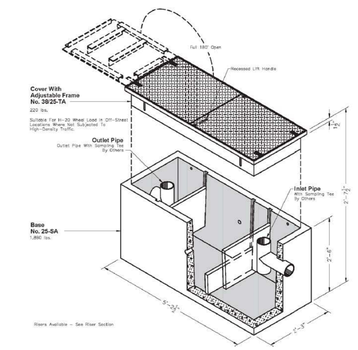
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Oldcastle Precast AUBURN — *Delivering Reliability*

25-SA OIL WATER SEPARATOR
100 Gallon Capacity



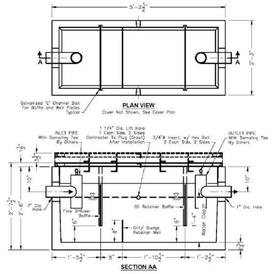
Non Skid Covers Available
FOR DETAILS, SEE REVERSE>>
Items Shown Are Subject To Change Without Notice
Issue Date: April 2016

133 — © 1950-2016 Oldcastle Precast, Inc.

Mailing Address: PO Box 588, Auburn, WA 98071
Phone: 800-992-1538
Fax: 253-735-4201
Email: opauburn@oldcastle.com
opauburn.com

Oldcastle Precast — *Delivering Reliability*

25-SA



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 Monolithic Or Sectional Precast Reinforced Concrete Water and Wastewater Structures"
5. Loads: HS-20 Truck Wheel w/ 30% Impact Per AASHTO

GENERAL NOTES:
1. All Bolting and Weirs To Be Steel
2. Contractor to:
Supply and Install All Piping & Sampling Tees
Cut Pipe Openings
Fit With Clean Water Prior To "Start-Up" Of System
Verify All Blockout Sizes and Locations

FOR CUSTOM APPLICATIONS THE FOLLOWING INFORMATION IS NEEDED:
Top Of Basin/Inlet Elevation:
Inlet Pipe Size:
Inlet Pipe Elevation:
Outlet Pipe Size:
Outlet Pipe Elevation:

SCALE: 3/4"=1'-0"

133.1 — © 1950-2016 Oldcastle Precast, Inc.

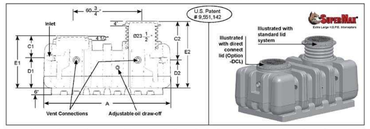
opauburn.com

Location:

MIFAB SUPER-500-O — SUPERMAX® GRAVITY OIL INTERCEPTOR - 500 GALLONS LIQUID HOLDING CAPACITY

Specification: MIFAB® SUPER-500-O gravity oil interceptor with 500 U.S. gallons of liquid holding capacity has a limited lifetime warranty and is made in the U.S.A. out of seamless, rotationally molded High Density Polyethylene with 3/8" uniform wall thickness. Interceptor is designed for above or below ground installation and includes an adjustable lid system, sample port access, deep seal trap covered by lid, internal air relief by-pass, adjustable oil drawoff assembly (1 1/2" I.P.S.) on each side, double vent connections (3" I.P.S.) on each side, stainless steel calibrated orifice plate (internal flow control), base for support and floor level installation and 4" no hub inlet and outlet connections. Steel encased corrocide lids provide a water / gas tight seal and have a minimum of 20,000 LB. load capacity - in accordance with the loading requirements of AASHTO H-20. The high density polyethylene material is PE 3135 from Dow 9.39 with a density of 0.939 g/cm3. For indoor/outdoor use.

Function: Oil interceptors are required anywhere oil and sand may be introduced to the public sewer system in applications such as: repair garages, oil change stations, car wash facilities, parking garages, parking lots, hydraulic elevator pits and facilities where oil and flammable liquid waste are produced as a result of manufacturing, storage, maintenance, repair or testing processes. The interceptor collects the oil before it is drained to an adjacent storage tank through an adjustable draw-off system. Typically installed either on or into the floor. Regular maintenance is required to keep the interceptor functioning. All SuperMax gravity interceptors can withstand a temperature of up to and including 180 degrees Fahrenheit.



Model	Flow Rate (GPM)	Liquid Cap. (Gallons ft.)	Oil Storage Holding Cap (Gal)	Sand Cap. (Gal)	A	Width B	C' Dim.	C" Dim.	D' Dim.	D" Dim.	E' Dim.	E" Dim.	F Connection Size	Shipping Weight (Lbs.)
SUPER-500-O	250	539 / 72	310	102	117" 2923mm	54" 1630mm	19.75" 670 m	37.25" 946mm	25.25" 641mm	24.25" 616mm	45 1143mm	51.50" 1562mm	4" 102mm	960

Suffix	Description
-AA	Anchor kit (set of two)
-C	Lid extension (specify dimension required)
-CDA	Coalescer Pack
-DI	Ductile iron lid & collar
-FLC	Membrane clamp collar
-FI	4" No-Hub Inlet / Outlet connection (flow rate of 700 GPM with 6" connections)
-FB	6" No-Hub Inlet / Outlet connection (fabricated stainless steel) (flow rate of 1,350 GPM with 8" connections)
-HLA	High level alarm and float switch (to be installed on site)
-HT	Hold-ing Tank
-LHSI	4" no hub inlet on left hand side
-LHSO	4" no hub outlet on left hand side
-PDK	Remote pump out kit
-RHSI	4" no hub inlet on right hand side
-RHSO	4" no hub outlet on right hand side
-SPO	4" Remote pump outlet connections on top of interceptor - specify location and number required
-SB	Sediment bucket
-SP	External Sampling port - inline, high connections (Part # BIO-SP)
-SPL	External Sampling port - inline, low connections (Part # BIO-SP-L)
-SPOF	External Sampling port - offset (Part # BIO-SP-OF)
-SST	Fire resistant 5x5 rated stainless steel interceptor
-ST	Fire resistant 5x5 rated stainless steel with vented steel interceptor
-V	Vent connection - 4" (specify number required and location - side and / or top)

CALIFORNIA PROPOSITION 65 WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Job Name: _____ Page No: _____
Section No: _____ Contractor: _____
Schedule No: _____ Purchase Order No: _____

MIFAB® reserves the right to make changes in material and design without formal notice and obligation. USA: 1-800-465-2734 www.mifab.com CAN: 1-800-387-3880

2019-06-14

LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDALE, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

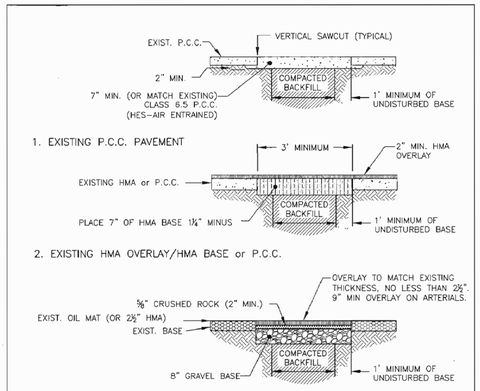
RAMON LLANOS — STATE OF WASHINGTON — 20020 — REGISTERED PROFESSIONAL ENGINEER
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JOB NO.: 1856
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1310 G STREET, CITY OF BELLINGHAM, WHATCOM COUNTY, WASHINGTON
HARBORSIDE APARTMENTS 1310 G ST
ON-SITE CIVIL PLANS
UTILITY PLAN - BASEMENT FLOOR LEVEL

NO.	REVISION	BY	DATE
1	CIVIL SUBMITTAL 1	RS	07/22/20
2	CIVIL SUBMITTAL 2	RS	07/15/20

SHEET 08 OF 11



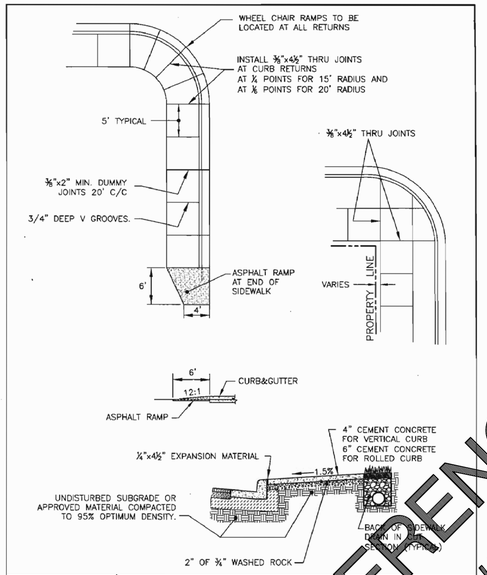
NOTES:

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CITY OF BELLINGHAM'S STANDARD SPECIFICATIONS FOR UTILITY CUTS IN STREET AREA.

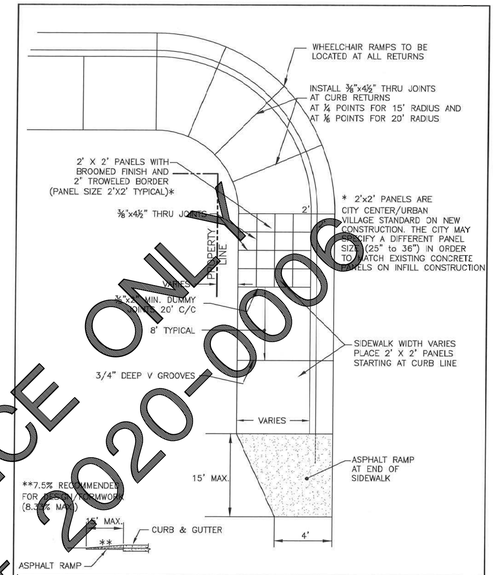
PAVEMENT OVERLAYS No. 2 AND 3, TACK ALL EDGES AND HMA BASE SURFACE BEFORE PLACING HMA PAVEMENT. SEAL ALL JOINTS WITH HOT ASPHALT (AR-4000W) BETWEEN EXISTING AND NEW HMA PAVEMENT IMMEDIATELY AFTER FINISH ROLLING.

CONTRACTOR SHALL MATCH EXISTING SURFACES THAT ARE COLORED, TEXTURED, STAMPED OR INLAID WITH BRICK.

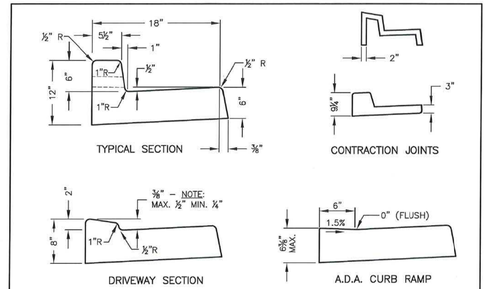
APPROVED	CITY OF BELLINGHAM	DRAWING
City Engineer 12/16/09 Date	HORIZONTAL PAVEMENT REPAIR (STREET CROSSINGS)	ST-180



APPROVED	CITY OF BELLINGHAM	DRAWING
City Engineer 10/19/09 Date	SIDEWALK	CG-230



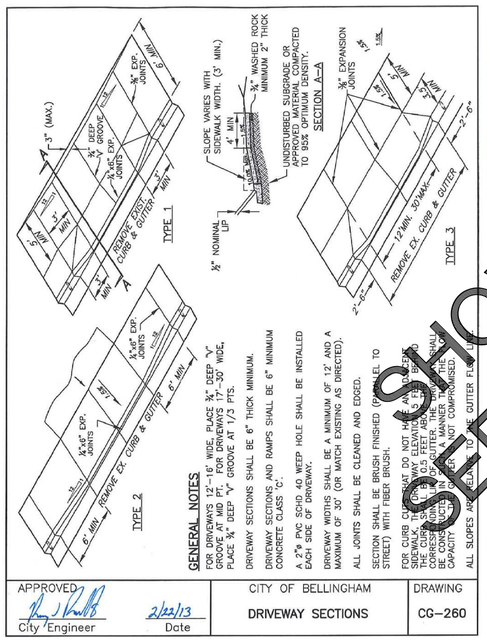
APPROVED	CITY OF BELLINGHAM	DRAWING
City Engineer 12 SEPT 2016 Date	CITY CENTER/URBAN VILLAGE SIDEWALK	CG-232



GENERAL NOTES:

1. CONTRACTION JOINTS OF ONE OF THE TYPES SHOWN ABOVE TO BE PLACED 10' C/C. JOINTS MUST COMPLETELY SEVER THE STRUCTURE TO THE POINTS SHOWN. JOINTS MAY BE MADE BY INSERTING MIN. ¾" BITUMINOUS FILLER DUMMY JOINTS. JOINTS SHALL BE CLEANED AND EDGED.
2. ALL RADII LESS THAN 100' SHALL USE FLEXIBLE WOOD OR METAL FORMS TO ELIMINATE ANGULAR POINTS AT 10' SECTION POINTS.
3. 2"ø PVC SCHD 40 WEEP HOLES TO BE PLACED ON EACH SIDE OF DRIVEWAY SECTION AND AT MAX. OF 60' C/C IN CUT SECTIONS WHERE SIDEWALK DRAIN NOT REQUIRED BY CITY ENGINEER.
4. ¾" EXPANSION JOINTS TO BE PLACED AT DRIVEWAY SECTIONS, CURB RETURNS, CURB RAMPS, & COLD JOINTS OR A MAX. OF 80' C/C. EXPANSION JOINTS SHALL PROTRUDE 1" BELOW THE BOTTOM OF GUTTER.
5. CONCRETE SHALL BE COMMERCIAL CONCRETE CLASS 3000 PER WSDOT SPEC. 6-02.3(2)B.
6. FINISHED WORK SHALL NOT VARY MORE THAN ¼-INCH IN GRADE AND ¾-INCH IN ALIGNMENT WHEN CHECKED WITH A 10-FOOT STRAIGHT EDGE.
7. EXPOSED SURFACES SHALL BE BRUSHED WITH A FIBER HAIR BRUSH.
8. WHITE PIGMENTED OR TRANSPARENT CURING COMPOUND SHALL BE APPLIED AS OUTLINED IN THE STANDARD SPECIFICATIONS.
9. FURTHER REQUIREMENTS SHALL BE AS SPECIFIED IN THE STANDARD SPECIFICATIONS.

APPROVED	CITY OF BELLINGHAM	DRAWING
City Engineer 24 MAY 2016 Date	TYPE 'A' MODIFIED CURB AND GUTTER	CG-200



GENERAL NOTES

FOR DRIVEWAYS 12'-16' WIDE, PLACE ¾" DEEP "V" GROOVE AT MID PT. FOR DRIVEWAYS 17'-30' WIDE, PLACE ¾" DEEP "V" GROOVE AT 1/3 PTS.

DRIVEWAY SECTIONS SHALL BE 6" THICK MINIMUM.

DRIVEWAY SECTIONS AND RAMPS SHALL BE 6" MINIMUM CONCRETE CLASS "C".

A 2"ø PVC SCHD 40 WEEP HOLE SHALL BE INSTALLED EACH SIDE OF DRIVEWAY.

DRIVEWAY WIDTHS SHALL BE A MINIMUM OF 12' AND A MAXIMUM OF 30' (OR MATCH EXISTING AS DIRECTED).

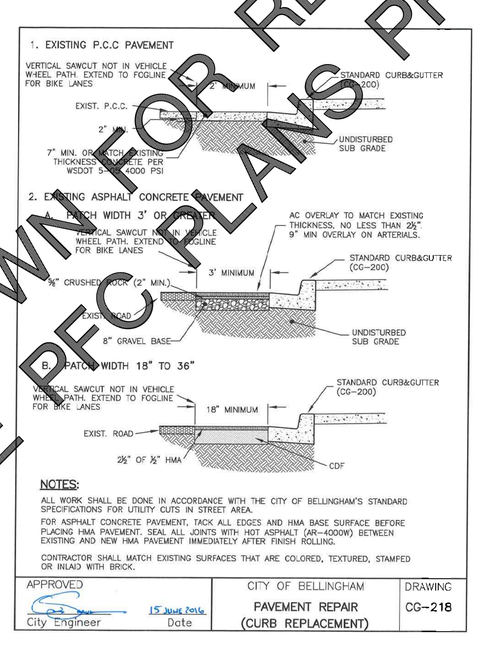
ALL JOINTS SHALL BE CLEANED AND EDGED.

SECTION SHALL BE BRUSH FINISHED (PARALLEL TO STREET) WITH FIBER BRUSH.

FOR CURB CUTS THAT DO NOT HAVE A CURB AND GUTTER SIDEWALK, THE DRIVEWAY ELEVATION AT THE BACK OF SIDEWALK (OR 6' FROM BACK OF CURB) SHALL BE CONSTRUCTED IN SUCH A MANNER THAT THE CAPACITY OF THE GUTTER FLOW IS NOT COMPROMISED.

ALL SLOPES ARE RELATIVE TO THE GUTTER FLOW LINE.

APPROVED	CITY OF BELLINGHAM	DRAWING
City Engineer 2/22/13 Date	DRIVEWAY SECTIONS	CG-260



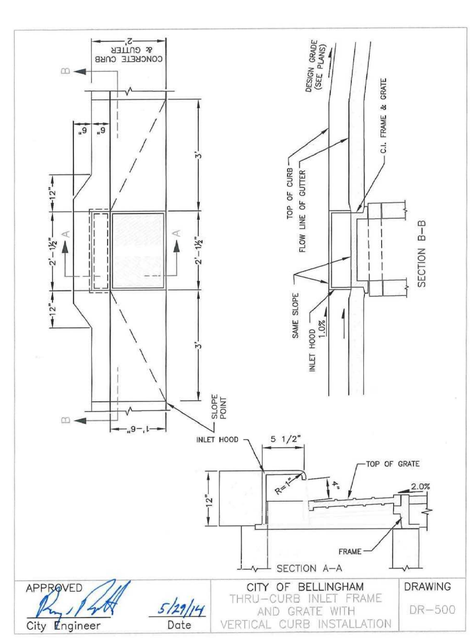
NOTES:

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CITY OF BELLINGHAM'S STANDARD SPECIFICATIONS FOR UTILITY CUTS IN STREET AREA.

FOR ASPHALT CONCRETE PAVEMENT, TACK ALL EDGES AND HMA BASE SURFACE BEFORE PLACING HMA PAVEMENT. SEAL ALL JOINTS WITH HOT ASPHALT (AR-4000W) BETWEEN EXISTING AND NEW HMA PAVEMENT IMMEDIATELY AFTER FINISH ROLLING.

CONTRACTOR SHALL MATCH EXISTING SURFACES THAT ARE COLORED, TEXTURED, STAMPED OR INLAID WITH BRICK.

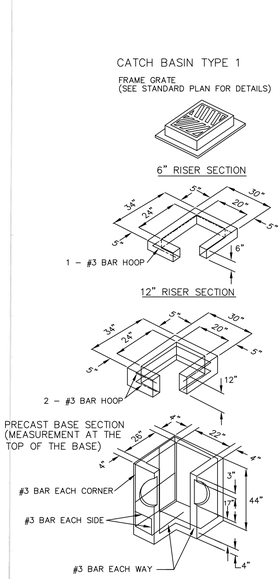
APPROVED	CITY OF BELLINGHAM	DRAWING
City Engineer 15 JUNE 2016 Date	PAVEMENT REPAIR (CURB REPLACEMENT)	CG-218



APPROVED	CITY OF BELLINGHAM	DRAWING
City Engineer 5/29/14 Date	THRU-CURB INLET FRAME AND GRATE WITH VERTICAL CURB INSTALLATION	DR-500

CATCH BASIN TYPE 1

FRAME GRATE (SEE STANDARD PLAN FOR DETAILS)



NOTES:

CONCRETE CATCH BASINS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH ASTM C 478 (AASHTO M 199) & ASTM 890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATION.

AS AN ACCEPTABLE ALTERNATE TO REBAR, WELDED WIRE FABRIC HAVING A MINIMUM AREA OF 0.12 SQ. INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A 497 (AASHTO M 221). WIRE FABRIC SHALL NOT BE PLACED IN THE KNOCKOUTS.

THE BOTTOM OF THE PRECAST BASE SECTION MAY BE ROUNDED.

PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN.

KNOCKOUTS MAY BE ON ALL 4 SIDES WITH MAX. DIAMETER OF 17" FOR CONCRETE INLETS, 20" FOR CATCH BASINS TYPE 1, 28" FOR THE CATCH BASINS TYPE 1L. KNOCKOUTS MAY EITHER BE ROUND OR D SHAPE. PIPE IS TO BE INSTALLED IN FACTORY SUPPLIED KNOCKOUTS.

CONCRETE INLET/CATCH BASIN FRAME AND GRATE SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS AND MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-62ID. MATCHING SURFACES SHALL BE FINISHED TO NON-ROCKING FIT.

THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION AND RISER SHALL NOT EXCEED 1/2"-FT.

FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO RISER.

THE MAXIMUM DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5 FT.

STORM DRAIN CATCH BASIN - TYPE 1

NTS

REFERENCE ONLY
PFC# 2020-00067
NOT SHOWN FOR REVIEW
SEE PFC PLANS FOR SIZE

LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDALE, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

RAMON LLANOS — STATE OF WASHINGTON — 20800 — REGISTERED PROFESSIONAL ENGINEER
7/15/20

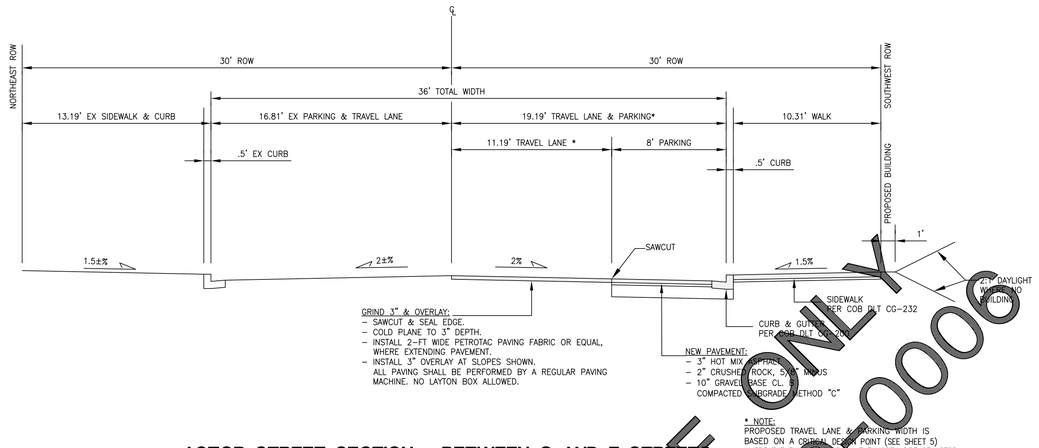
JOB NO.: 1856
DWG. NAME: 1856-CIVIL-C3D - redo3.dwg
DESIGNED BY: RS/RL
DRAWN BY: RS/EH
CHECKED BY: RL
OWNER:
MATS HAREZLAK
1642 EMERALD LAKE WAY
BELLINGHAM, WA 98226

1310 G STREET, CITY OF BELLINGHAM, WHATCOM COUNTY, WASHINGTON
HARBORSIDE APARTMENTS 1310 G ST
ON-SITE CIVIL PLANS
DETAILS

NO.	REVISION	BY	DATE
1	DWL SUBMITTAL 1	RS	07/15/20
2	DWL SUBMITTAL 2	RS	09/22/20

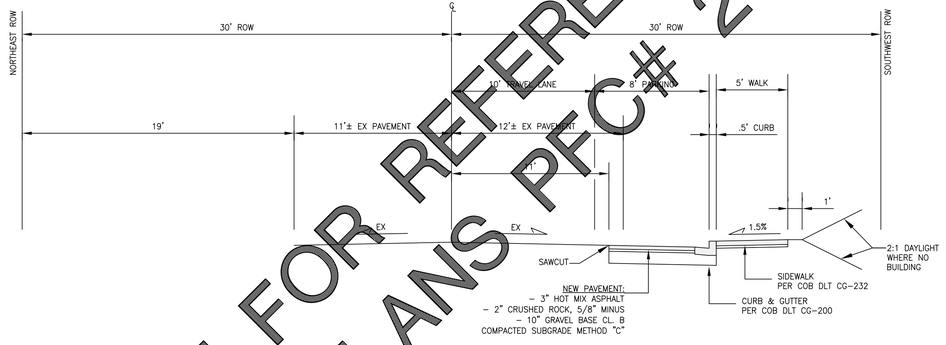
SHEET 09 OF 11

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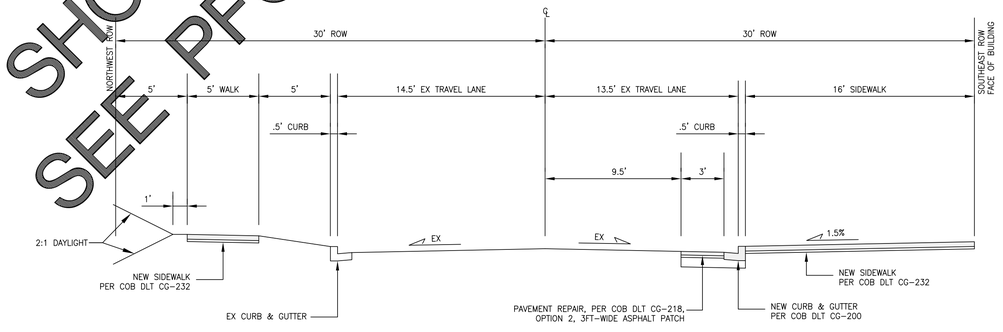
ASTOR STREET SECTION - BETWEEN G AND F STREETS

NTS



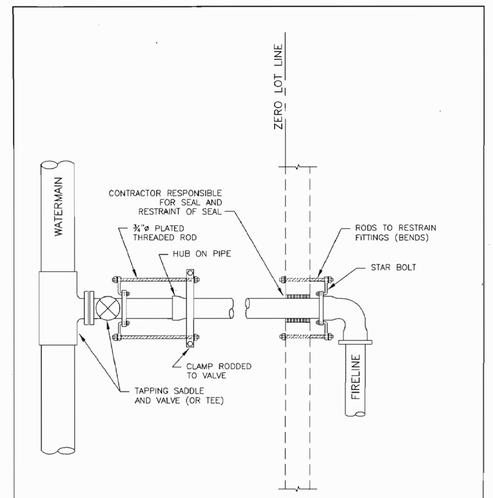
ASTOR STREET SECTION - BETWEEN H AND G STREETS

NTS

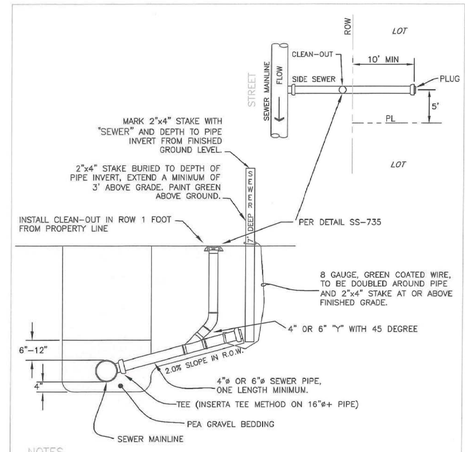


G STREET SECTION

NTS



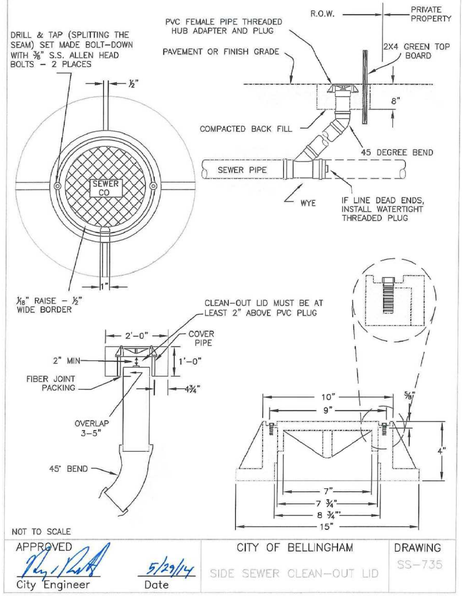
APPROVED		CITY OF BELLINGHAM	DRAWING
City Engineer	9/17/07 Date	APPROVED RESTRAINTS	WA-880



NOTES:
1. UNLESS OTHERWISE INDICATED ON PLAN, SIDE SEWER SHALL BE A MIN. OF 6' DEEP AT PROPERTY LINE, OR 5' LOWER THAN THE LOWEST LOT ELEVATION, WHICHEVER IS LOWER.
2. WHEN REPLACING EXISTING SIDE SEWER, CONTRACTOR SHALL VERIFY POSITIVE FALL, OTHER EXISTING CONNECTIONS, AND SAGS OR DEFLECTIONS IN PIPE, AS PER ASTM F 1743 8.6.
3. INSTALL CLEANOUT AFTER 3 BENDS AND AT MAX 100' INTERVALS, ALSO AT END OF LINE, WITHIN 2' OF HOUSE.

NOT TO SCALE

APPROVED		CITY OF BELLINGHAM	DRAWING
City Engineer	5/29/14 Date	SANITARY SIDE SEWER	SS-730



NOT TO SCALE

APPROVED		CITY OF BELLINGHAM	DRAWING
City Engineer	5/29/14 Date	SIDE SEWER CLEAN-OUT LID	SS-735

BEDDING SPECIFICATIONS FOR PVC PIPE

THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS ARE TO BE USED IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, CURRENT EDITION:

BEDDING FOR SEWERS, DRAINS AND CULVERTS FOR PVC PIPE–

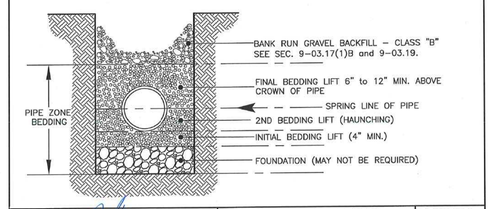
BEDDING MATERIAL FOR PVC PIPE SHALL BE PEA GRAVEL CONFORMING TO THE FOLLOWING SPECIFICATIONS.

PEA GRAVEL – PEA GRAVEL BEDDING SHALL BE A CLEAN MIXTURE FREE FROM ORGANIC MATTER AND CONFORMING TO THE FOLLOWING GRADATION WHEN TESTED IN ACCORDANCE WITH ASTM D422:

FOUNDATION MATERIAL		
U.S. SIEVE SIZE	CLASS A	CLASS B
2 ½"	98–100	95–100
2"	92–100	75–100
1 ½"	72–87	30–60
¾"	24–47	0–5
⅜"	3–4	––
#4	0–5	––

PIPE ZONE BEDDING	
100%	½"
85–100	–⅜"
10–30	#4
0–10	#8
0–5	#200

BACKFILL – WHEREVER A TRENCH IS EXCAVATED IN THE EXISTING OR PROPOSED ROADWAY, SIDEWALK OR OTHER AREAS WHERE SETTLEMENT WOULD BE DETRIMENTAL, THE ENTIRE TRENCH SHALL BE BACKFILLED WITH IMPORTED GRAVEL AND COMPACTED TO 95% OF MAXIMUM DENSITY.



APPROVED		CITY OF BELLINGHAM	DRAWING
City Engineer	4/22/10 Date	PVC PIPE BEDDING DETAILS	SS-750

SHOWN FOR REFERENCE ONLY
SEE PFC PLANS PFC# 2020-00006

LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDALE, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

RAMON LLANOS — STATE OF WASHINGTON — 20020 — REGISTERED PROFESSIONAL ENGINEER
7/15/20

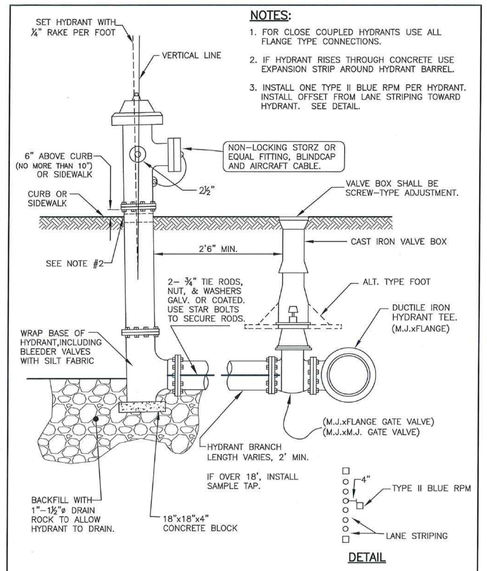
JOB NO.: 1856
DWG. NAME: 1856-CIVIL-C3D – redo3.dwg
DESIGNED BY: RS/RL
DRAWN BY: RS/EH
CHECKED BY: RL
OWNER:
MATS HAREZLAK
1642 EMERALD LAKE WAY
BELLINGHAM, WA 98226

1310 G STREET, CITY OF BELLINGHAM, WHATCOM COUNTY, WASHINGTON
HARBORSIDE APARTMENTS 1310 G ST
ON-SITE CIVIL PLANS
DETAILS

NO.	REVISION	BY	DATE
1	CIVIL SUBMITTAL 1	RS	07/15/20
2	CIVIL SUBMITTAL 2	RS	09/22/20

SHEET 10
OF 11

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NOTES:

1. FOR CLOSE COUPLED HYDRANTS USE ALL FLANGE TYPE CONNECTIONS.
2. IF HYDRANT RISES THROUGH CONCRETE USE EXPANSION STRIP AROUND HYDRANT BARREL.
3. INSTALL ONE TYPE II BLUE RPM PER HYDRANT. INSTALL OFFSET FROM LANE STRIPING TOWARD HYDRANT. SEE DETAIL.

DETAIL

APPROVED	CITY OF BELLINGHAM	DRAWING
City Engineer — Date: 24 OCT 2018	HYDRANT INSTALLATION	WA-802

BEDDING SPECIFICATIONS FOR DUCTILE IRON PIPE

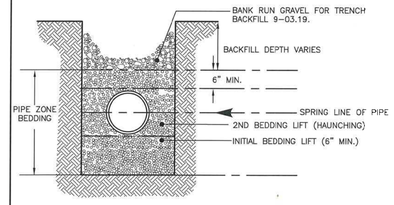
THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS ARE TO BE USED IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, CURRENT EDITION:

BEDDING FOR WATERMAINS FOR DUCTILE IRON PIPE–

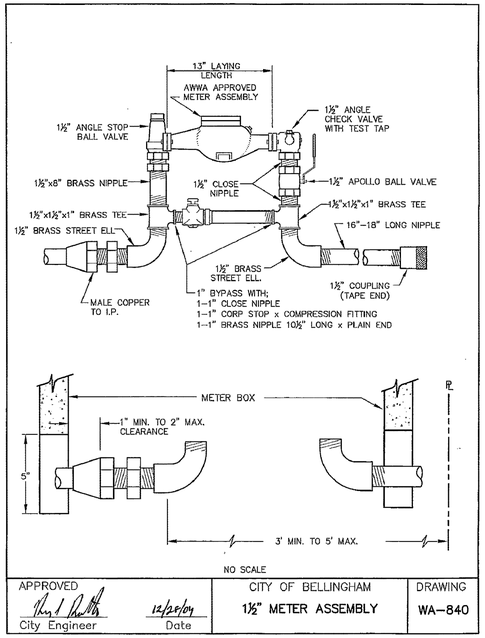
BEDDING MATERIAL FOR DUCTILE IRON PIPE SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS.

PIPE ZONE BEDDING – BEDDING SHALL BE A CLEAN GRANULAR MATERIAL FREE FROM ORGANIC MATTER AND CONFORMING TO THE STANDARD SPECIFICATION: 9-03.12(3), GRAVEL BACKFILL FOR PIPE ZONE BEDDING.

BACKFILL – WHEREVER A TRENCH IS EXCAVATED IN THE EXISTING OR PROPOSED ROADWAY, SIDEWALK OR OTHER AREAS WHERE SETTLEMENT WOULD BE DETRIMENTAL, THE ENTIRE TRENCH SHALL BE BACKFILLED WITH IMPORTED GRAVEL AND COMPACTED TO 95% OF MAXIMUM DENSITY.

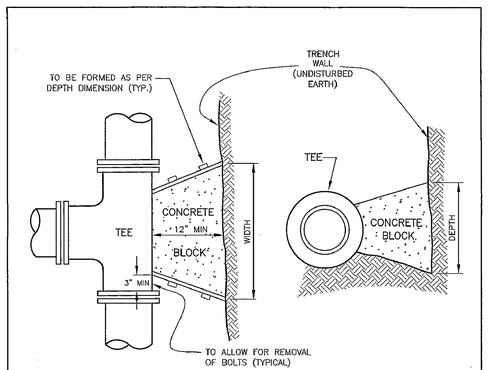


APPROVED	CITY OF BELLINGHAM	DRAWING
City Engineer — Date: 12 SEPT 2016	WATER PIPE BEDDING DETAILS	WA-820



NO SCALE

APPROVED	CITY OF BELLINGHAM	DRAWING
City Engineer — Date: 12/27/04	1½" METER ASSEMBLY	WA-840



PLAN VIEW SECTION VIEW

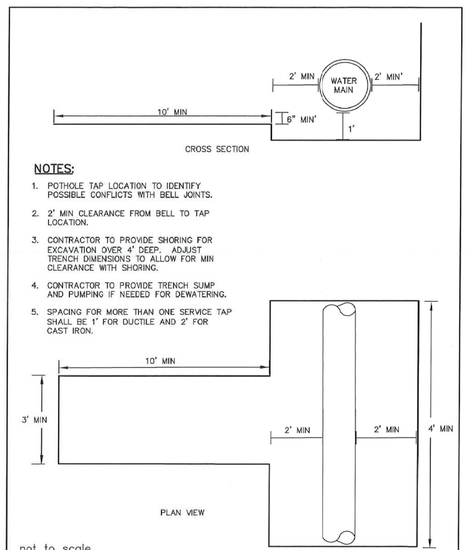
NOTE

- ALL DIMENSIONS APPLY TO STABLE TRENCH WALLS. UNDER VARIABLE CONDITIONS, SIZE OF THRUST BLOCK SHALL BE DETERMINED BY THE CITY ENGINEER.
- WRAP ALL FITTINGS WITH VISQUINE MIN. 6" PAST FLANGES, PRIOR TO POURING CONCRETE THRUST BLOCK.

100 P.S.I. OPERATING PRESSURE

SIZE	WIDTH	DEPTH
6"	1'-6"	1'-6"
8"	2'-0"	2'-0"
10"	2'-6"	2'-6"
12"	3'-0"	3'-0"
16"	4'-6"	3'-6"
20"	6'-0"	4-0"
24"	7'-0"	5'-0"

APPROVED	CITY OF BELLINGHAM	DRAWING
City Engineer — Date: 1/11/05	THRUST BLOCK-TEE	WA-862

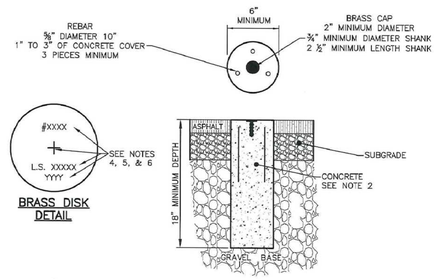


NOTES:

1. POTHOLE TAP LOCATION TO IDENTIFY POSSIBLE CONFLICTS WITH BELL JOINTS.
2. 2' MIN CLEARANCE FROM BELL TO TAP LOCATION.
3. CONTRACTOR TO PROVIDE SHORING FOR EXCAVATION OVER 4' DEEP. ADJUST TRENCH DIMENSIONS TO ALLOW FOR MIN CLEARANCE WITH SHORING.
4. CONTRACTOR TO PROVIDE TRENCH SUMP AND PUMPING IF NEEDED FOR DEWATERING.
5. SPACING FOR MORE THAN ONE SERVICE TAP SHALL BE 1' FOR DUCTILE AND 2' FOR CAST IRON.

not to scale

APPROVED	CITY OF BELLINGHAM	DRAWING
City Engineer — Date: 26 APR 2017	WATER TAP EXCAVATION 4" AND LARGER	WA-872



GENERAL NOTES:

1. BRASS DISK TO BE EQUAL TO OR BETTER THAN SURV-KAP MODEL M/M-B2 (2" DIAMETER MIN WITH ¾" DIAMETER x 2" SHANK).
2. EXCAVATION SHALL BE FILLED WITH CLASS 4,000 CONCRETE PER WSDOT STANDARD SPEC. 6-02
3. POSITION BRASS DISK SO THAT PUNCH-MARK FALLS NO CLOSER THAN ½" FROM THE EDGE OF DISK.
4. EXACT LOCATION OF CONTROL POINT SHALL BE PUNCHED AFTER CONCRETE HAS SET.
5. DISK SHALL BE STAMPED WITH CITY ASSIGNED MONUMENT NUMBER, SURVEYOR'S LICENSE NUMBER, AND THE YEAR THE MONUMENT IS PUNCHED (YYYY).
6. IF A PLS MONUMENT, DISK SHALL BE STAMPED ACCORDING TO WAC 332-130-030 AND THE CURRENT BLM MANUAL OF SURVEYING INSTRUCTIONS
7. TIE OUT THE MONUMENT USING TRANSIT TIES WITH DISTANCES AND TWO ANGLES SUBMIT TIE-OUT DOCUMENTATION ON CITY MONUMENT INFORMATION FORM TO CITY PUBLIC WORKS.
8. COMPLETE THE DNR MONUMENT REMOVAL PERMIT PROCESS. (RCW 58.24.040, WAC 332-120).

APPROVED	CITY OF BELLINGHAM	DRAWING
City Engineer — Date: 26 MAY 2017	CORE MONUMENT IN PAVEMENT NEW OR EXISTING	ST-174

LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDALE, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

RAMON LLANOS — STATE OF WASHINGTON — 20800 — REGISTERED PROFESSIONAL ENGINEER
7/15/20

JOB NO.: 1856
DWG. NAME: 1856-CIVIL-C3D - redo3.dwg
DESIGNED BY: RS/RL
DRAWN BY: RS/EH
CHECKED BY: RL
OWNER:
MATS HAREZLAK
1642 EMERALD LAKE WAY
BELLINGHAM, WA 98226

1310 G STREET, CITY OF BELLINGHAM, WHATCOM COUNTY, WASHINGTON

HARBORSIDE APARTMENTS 1310 G ST
ON-SITE CIVIL PLANS
DETAILS

NO.	REVISION	BY	DATE
1	CIVIL SUBMITTAL 1	RS	09/23/20
2	CIVIL SUBMITTAL 2	RS	07/15/20

SHEET 11 OF 11

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