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WR

WDW

SCHED

PLYWD

AB	Anchor Bolt
ABV	Above
ADJ	Adjustable, Adjust
AFF	Above Finish Floor
ALIGN	Alignment
AL	Aluminum
ASSEM	Assembly
BEL	Below
BEY	Beyond
BLKG	Blocking
BM	Beam
BO	Bottom of
BRG	Bearing
BTWN	Between
BW	Bottom of Wall
CAB	Cabinet
CJ	Control Joint
CLG	Ceiling
CLR	Clearance, Clear
COL	Column
CONC	Concrete
CONT	Continuous
CT	Ceramic Tile
D	Deep, Depth
DET	Detail
DIA	Diameter
DN	Down
DS	Downspout
DW	Dishwasher
E	East
EA	Each
EMBED	Embedment
EQ	Equal
EW	Each Way
EXIST	Existing
EXT	Exterior
FIN	Finish
FLASH	Flashing
FLR	Floor
FOC	Face of Concrete
FOF	Face of Finish
FOS	Face of Stud
FOUND	Foundation
FRPLC	Fireplace
FT	Foot, Feet
FTG	Footing
GALV GLB	Galvanized Glued Laminated Beam
GWB	Gypsum Wall Board
H	High
HB	Hose Bibb
HDR	Header
HDWD	Hardwood
HORIZ	Horizontal
HT	Height
HWT	Hot Water Heater
INSUL	Insulation, Insulate
JST	Joist
JT	Joint
LF	Linear Foot

LF LVL Laminated Veneer

NOXIOUS WEEDS

Lumber

DEVELOPMENT PROPOSALS FOR A NEW SINGLE-FAMILY HOME SHALL REMOVE JAPANESE KNOTWEED (POLYGONUM CUSPIDATUM) AND REGULATED CLASS A, REGULATED CLASS B, AND REGULATED CLASS C WEEDS IDENTIFIED ON THE KING COUNTY NOXIOUS WEED LIST, AS AMENDED, FROM REQUIRED LANDSCAPING AREAS ESTABLISHED PURSUANT TO SUBSECTION 19.02.020(F)(3)(A). NEW LANDSCAPING ASSOCIATED WITH NEW SINGLE-FAMILY HOME SHALL NOT INCORPORATE ANY WEEDS IDENTIFIED ON THE KING COUNTY NOXIOUS WEED LIST, AS AMENDED. PROVIDED, THAT REMOVAL SHALL NOT BE REQUIRED IF THE REMOVAL WILL RESULT IN INCREASED SLOPE INSTABILITY OR RISK OF LANDSLIDE OR EROSION.

TREE PROTECTION

A TREE PROTECTION INSPECTION IS REQUIRED BEFORE START OF WORK

Material Maximum Medium Density Fiberboard Medium Density Overlav Membrane Minimum Mirror Miscellaneous Metal

Manufacturer

Number Nominal Not to Scale Over

Oriented Strand Board Plate, Property Line Plastic Laminate

Parallel Strand Lumber Pressure Treated

Refrigerator Reinforcing Required Room Rough Opening Roof Rafter

South

Schedule, Scheduled Square Feet Sheathing Similar Specifications Structural Symmetrical

Top and Bottom Tounge and Groove Tempered Truss Joist I-beam joist Top of Plate Top of Subfloor, Top of Slab Top of Wall Typical

Uniform Building Code Unless Noted Otherwise

Vapor Barrier Verify Vertical

Welded Wire Mesh With Without Wood Window Waterproofing, Weatherproof

West, Watt, Width

Water Resistant

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH APPLICABLE CODES AND ORDINANCES.

- VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS AT THE SITE BEFORE PROCEEDING WITH WORK. GENERAL CONTRACTOR SHALL VISIT THE PREMISES TO FAMILIARIZE HIMSELF WITH ALL ASPECTS OF THE WORK BEFORE CONTRACTING WITH OWNER TO PERFORM THE WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES BETWEEN DRAWINGS AND ACTUAL CONDITIONS PRIOR TO THE START OF THE WORK.
- VERIFY ALL ITEMS TO BE REMOVED OR DEMOLISHED WITH THE OWNER PRIOR TO START OF THE WORK. CONTRACTOR SHALL IDENTIFY THOSE ITEMS TO BE INCORPORATED IN THE FINISHED PROJECT AND SHALL ARRANGE FOR THEIR SAFE STORAGE. SALVAGE VALUE OF REMOVED ITEMS SHALL BELONG TO THE OWNER UNLESS OTHERWISE AGREED.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES ASSOCIATED WITH PROJECT.
- IDENTIFICATION AND HANDLING OF EXISTING HAZARDOUS MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SUCH ACTIVITIES SHALL BE UNDERTAKEN CONSISTENT WITH ALL CURRENT REGULATIONS GOVERNING HAZARDOUS MATERIAL
- GENERAL CONTRACTOR SHALL CONSULT/COORDINATE PLANS OF ALL TRADES FOR ALL OPENINGS THROUGH SLABS, CEILINGS, AND WALLS FOR DUCTS, PIPES, CONDUITS AND EQUIPMENT, AND SHALL VERIFY SIZE AND LOCATION WITH RESPECTIVE CONTRACTORS.
- CONTRACTOR SHALL COORDINATE INSTALLATION OF EQUIPMENT INCLUDED IN THIS CONTRACT OR BY OTHERS. OBTAIN ROUGH-IN DIMENSIONS, REQUIREMENTS FOR BACKING, SUPPORT AND LOCATION OF ITEMS PRIOR TO THE START OF WORK.

REPETITIVE FEATURES MAY BE DRAWN ONLY ONCE, BUT SHALL BE PROVIDED AS IF DRAWN IN FULL

- ALL PIPING, CONDUITS AND DUCTS SHALL BE FURRED-IN IN ALL FINISHED ROOMS.
- CONTRACTOR SHALL VERIFY CONFORMANCE OF ACTUAL SOIL CONDITIONS WITH STRUCTURAL NOTES AND DESIGN ASSUMPTIONS.
- PROVIDE BACKING IN WALLS AS REQUIRED FOR INSTALLATION OF WALL-MOUNTED 10. ITEMS
- ALL MATERIALS AND WORKMANSHIP IN THIS CONTRACT SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THE ENTIRE PROJECT BY OWNER.
- DIMENSIONS SHOWN ON THE PLANS ARE, IN GENERAL, UNLESS SHOWN OR NOTED OTHERWISE:
- TO INTERIOR FACE OF CONCRETE. 13. TO INTERIOR FACE OF EXTERIOR WALL STUDS. TO FACE OF INTERIOR WALL STUDS. TO CENTERLINE OF INTERIOR COLUMNS AND ISOLATED FOOTINGS.
- CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS BEFORE COMMENCING ANY DEMOLITION. SHORING SHALL BE INSTALLED TO SUPPORT CONSTRUCTION AND EXCAVATION AS REQUIRED AND IN A MANNER SUITABLE TO THE WORK SEQUENCE.
- 14. ALL WORKMANSHIP SHALL BE OF THE HIGHEST QUALITY AND IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS, DIRECTIONS AND RECOMMENDATIONS.
- SELECTION OF INTERIOR AND EXTERIOR FINISHES TO BE COORDINATED AND VERIFIED WITH OWNER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS FOR THE WORK AND FOR REQUESTING REQUIRED REGULAR OR SPECIAL INSPECTIONS 16.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING ALL WORK AND 17. SUBMITTING SAMPLES, SHOP DRAWINGS AND OTHER REQUESTS FOR REVIEW BY THE OWNER ON A TIMELY BASIS.

18

11.

12.

VENTILATION & AIR QUALITY NOTES

VENT ALL BATHROOM FANS, LAUNDRY FANS, RANGE HOODS AND DRYERS TO OUTSIDE ATMOSPHERE. BATHROOM/UTILITY ROOM FANS SHALL BE CAPABLE OF 5 AIR CHANGES PER HOUR AND SHALL BE VENTED DIRECTLY TO THE OUTSIDE THROUGH SMOOTH RIGID NON-CORROSIVE METAL 24 GA DUCTWORK FLEX DUCTING IS NOT ALLOWED. WSEC R402.4.1.2 REQUIRES THE DWELLING UNIT TO BE TESTED AND VERIFIED AS HAVING AN AIR LEAKAGE RATE NOT EXCEEDING 5 AIR CHANGES PER HOUR, TESTING MUST BE CONDUCTED WITH A BLOWER DOOR AT A PRESSURE OF 0.2. NEW CONSTRUCTION MAY BE ISOLATED FROM EXISTING STRUCTURE FOR TESTING

FIRE SPRINKLER & MONITORING

HOUSE SHALL BE EQUIPPED WITH AN NFPA 13D SPRINKLER SYSTEM AND A MONITORED NFPA 72 FIRE ALARM SYSTEM UNDER SEPARATE PERMIT. SYSTEM MUST BE INSTALLED, INSPECTED AND FINALLED PRIOR TO OCCUPANCY.





RECESSED LIGHTING FIXTURES INSTALLED IN BUILDING ENVELOPE SHALL COMPLY WITH WSEC PROVISIONS AND SHALL BE IC LISTED. A MIN. OF 75% OF PERMANENTLY INSTALLED LAMPS IN INTERIOR AND EXTERIOR LIGHTING FIXTURES MUST BE HIGH-EFFICACY LAMPS, PER WSEC R404.1.

PIPE INSULATION ALL HOT WATER PIPES, AND NON-RECIRCULATING COLD WATER PIPES LOCATED IN UNCONDITIONED SPACE, SHALL BE INSULATED TO R-3 MIN. PLUMBING OR MECHANICAL CANNOT DISPLACE THE REQUIRED INSULATION. WHOLE HOUSE WHOLE HOUSE VENTILATION SYSTEM:

- WHOLE HOUSE VENTILATION SHALL BE PROVIDED BY EXHAUST FAN PROVIDING 320 CFM RUNNING INTERMITTENTLY PER 2018 IRC TABLES M1507.3.3 (1&2). FAN SHALL BE LESS THAN .35 WATT PER CFM AND CONNECTED TO A 24 HOUR CLOCK TIMER AND HAVE A SONE RATING OF LESS THAN 1.0. VENTILATION SHALL BE ABLE TO OPERATE INDEPENDENTLY OF HEATING SYSTEM.
- SYSTEM SHALL HAVE A 5"Ø SMOOTH FRESH AIR DUCT W/ LOUVER & SCREEN CONNECTED TO THE RETURN AIR STREAM 4' UPSTREAM OF THE AIR HANDLER AND INSULATED W/ R-4 MIN IN HEATED AREAS. SHALL HAVE A FILTER WITH A MERV OF AT LEAST 6 INSTALLED IN AN EASILY ACCESSIBLE LOCATION. FRESH AIR VENT SHALL BE LOCATED AWAY FROM SOURCES OF ODORS OR FUMES, MIN 10' FROM PLUMBING OR APPLIANCE VENTS, AWAY FROM ROOMS W/ FUEL BURNING APPLIANCES, AND OUT OF
- ATTICS, CRAWL SPACES, AND GARAGES. AIRFLOW FOR WHOLE HOUSE EXHAUST FAN SHALL BE PROVIDED BY UNDERCUTTING INTERIOR DOORS 1/2" ABOVE FINISHED FLOOR, TYP.

PLUMBING FIXTURES ALL PLUMBING FIXTURES SHALL CONFORM TO RCW 19.27.170 ALL TOILETS 1.6 GPM MAX URINALS 1.0 GPF MAX SHOWERHEADS <1.75 GPM KITCHEN FAUCETS <1.75 GPM LAVATORIES < 1.0 GPM

ENERGY CREDITS

ENERGY NOTES

MOISTURE CONTROL

TEMP. CONTROL

DUCT ISULATION

LIGHTING

VENTILATION a.

CODES

EQUIPMENT

INCHES ON

CONTINUOUSLY

MINIMUM OF R-38.

SETBACK TYPE.

a.

VAPOR

HEAT TYPE

IEDIUM	DWELLING UNIT : 6 CREDITS REQUIRED	
PTION	DESCRIPTION	CREDITS
.3	EFFICIENT BUILDING ENVELOPE: VERTICAL FENESTRATION- U=0.28, FLOOR- R-38, SLAB ON GRADE/BELOW GRADE SLAB- R-10 PERIMETER+ UNDER ENTIRE SLAB	0.5
2	REDUCE TESTED AIR LEAKAGE TO 2.0 AIR CHANGES PER HOUR MAX. @ 50 PASCALS	1.0
.5	AIR SOURCE, CENTRALLY DUCTED HEAT PUMP WI MIN. HSPF OF 11	1.5
.2	ALL HVAC DUCTS AND COMPONENTS TO BE LOCATED IN CONDITIONED SPACE PER R403.3.7	1.0
.4	EFFICIENT WATER HEATING: ELECTRIC HEAT PUMP WATER HEATER TO MEET TIER I OF NEEA'S ADVANCED WATER HEATING SPECIFICATION	1.5
.1	APPLIANCE PACKAGE; ENERGY STAR RATED DISHWASHER, REFRIG., WASHING MACHINE & DRYER (VENTLESS W/ MIN. CEF 5.2)	0.5
	TOTAL CREDITS	6.0

PROJECT TEAM

ARCHITECT FORMWORKS DESIGN BUILD 7434 SE 71ST STREET MERCER ISLAND WA 98040 206-406-1589 206-406-1589

STRUCTURAL ENGINEERING MERRELL DESIGN SERVICES NINE MILE FALLS WA 99026 T.J. MERRELL 509-998-7410

CIVIL ENGINEER CORE DESIGN 12100 NE 195TH ST. #300 BOTHELL WA 98011 SHERI MURATA 425-885-7877

SURVEYOR TERRANE 10801 MAIN STREET #102 BELLEVUE WA 98004 425-458-4488

LANDSCAPE ARCHITECT BERGER PARTNERSHIP 1927 POST ALLEY STE. 2 SEATTLE WA 98101 JASON HENRY 206-492-5579 GEOTECH TERRA ASSOCIATES 12220 113TH AVENUE NE, SUITE 130 KIRKLAND WA 98034 CAROLYN DECKER 206-255-4988 ENVIRONMENTAL THE WATERSHED COMPANY

750 6TH AVENUE S. **KIRKLAND WA 98033** DAN NICKEL 425-822-5242 ARBORIST ABC CONSULTING ARBORISTS 10307 JASMINE LANE CHATTAROY WA 99003 DANIEL MAPLE 509-953-0293

SHORING ENGINEER GROUND SUPPORT 15704 NE 157TH STREET WOODINVILLE WA 98072 JOHN BYRNE 425-985-9338

A-1

PROJECT AD SCOPE OF W

2

THENCE S34°46'02"W 136.17' S30°03'18"E;

DRAWING INDEX



VICINITY MAP

PROJECT INFORMATION

OWNERS NAME:	LONGVIEW BELLA LLC 7615 EAST MERCER WAY MERCER ISLAND, WA 98040
PROJECT ADDRESS:	9271 SE 76TH STREET MERCER ISLAND, WA 98040
SCOPE OF WORK:	CONSTRUCTION OF A NEW SINGLE FAMILY RESIDENCE WITH ATTACHED GARAGE
PARCEL IDENTIFICATION NUMBER:	302405-9230
JURISDICTION:	CITY OF MERCER ISLAND
MERCER ISLAND PROJECT NUMBER:	2109-050
ZONING:	R-9.6 (RESIDENTIAL-SINGLE FAMILY)
BUILDING OCCUPANCY	R-3 SINGLE FAMILY RESIDENCE

NO SCALE

LEGAL DESCRIPTION

THAT PORTION OF THE NORTH 148.37 FEETOF A PORTION OF GOVERNMENT LOT 5, LYING WESTERLY OF EAST MERCER WAY; ALL IN SECTION 30, TOWNSHIP 24 NORTH, RANGE 5, EAST, WILLAMETTE MERIDIAN, IN KING COUNTY DESCRIBED AS FOLLOWS:

BEGINNING AT INTERSECTION OF THE NORTH LINE OF SAID GOVERMENT LOT 5 AND THE WESTERLY RIGHT-OF-WAY MARGIN OF EAST MERCER WAY; THENCE N88°51'48"W, ALONG SAID NORTH LINE 163.93'

THENCE S67°25'49"E 20.08' TO SAID WESTERLY MARGIN AND A POINT OF NON-RADIAL INTERSECTION WITH A 603.14 ADIUS CURVE TO THE RIGHT, THE CENTER OF WHICH BEARS

THENCE NORTHEASTERLY, ALONG SAID CURVE AND RIGHT -OF-WAY MARGIN, THROUGH A CENTRAL ANGLE OF 02°39'31", A DISTANCE OF 27.99 FEET TO A POINT OF TANGENCY; THENCE N62°36'13"E, LONG SAID MARGIN, 223.54' TO THE POINT OF BEGINNING.

CODES USED

2018 INTERNATIONAL BUILDING CODE (IBC) 2018 INTERNATIONAL RESIDENTIAL CODE (IRC) 2018 INTERNATIONAL MECHANICAL CODE (IMC) 2018 INTERNATIONAL FIRE CODE 2018 WASHINGTON STATE ENERGY CODE (WSEC)

COVERSHEET **A-0** PROJECT INFORMATION, LEGAL DESCRIPTION, VICINITY MAP, SYMBOL LEGEND, ABBREVIATIONS LIST, GENERAL NOTES, VENTILATON & ENERGY NOTES, DRAWING INDEX SURVEY SITE PLAN C-1 TITLE SHEET C-2 TESC PLAN C-3 ROAD AND GRADING PLAN **C-4** UTILITY PLAN **C-5** STORMWATER DETAILS

C-6 TREE PLAN L-1 TREE REPLACEMENT PLAN

- **A2.0** LOWER FLOOR PLAN
- A2.1 MAIN FLOOR PLAN
- A2.2 SECOND FLOOR
- A2.3 ROOF PLAN
- **A3.0** NORTH ELEVATION
- **A3.1** SOUTH ELEVATION
- **A3.2** EAST ELEVATION
- **A3.3** WEST ELEVATION
- A4.1 SECTION
- A4.2 SECTION
- **S2.1** FIRST FLOOR FRAMING PLAN **S2.2** SECOND FLOOR FRAMING PLAN **S2.3** ROOF FRAMING **S2.4** FIRST & SECOND FLOOR STUD PLANS **S3.0** STRUCTURAL DETAILS **S3.1** STRUCTURAL DETAILS **S3.2** STRUCTURAL DETAILS SH1.0 COVER SHEET SH1.1 NOTES SH2.0 SHORING PLAN **SH3.0** SOUTH WALL ELEVATION **SH3.1** WEST WALL ELEVATION SH3.2 NORTH WALL ELEVATION **SH3.A** PILE AND ANCHOR SCHEDULE **SH4.0** CROSS SECTIONS SH5.0 DETAILS SH5.1 DETAILS SH5.2 DETAILS SH5.3 DETAILS SH5.4 DETAILS

SH6.0 SPECIFICATIONS

S1.0 GENERAL STRUCTURAL NOTES

S2.0 FOUNDATION PLAN



 $\boldsymbol{\alpha}$ Ш S ER 0 927 RCE U 0

ISSUE INFORMATION

11.01.2023 PERMIT REVISIONS

SHEET TITLE

COVER SHEET PROJECT INFORMATION

SHEET NUMBER





1	
/	04

HIGHEST ELEVATION	126.5'
LOWEST ELEVATION	99.5'
ELEVATION DIFFERENCE	27'
HORIZ. DISTANCE	217.67'
27/217.67 =	.124
LOT SLOPE	12.4%
LOT COVERAGE ALLOWED	40%
TOTAL COVER. ALLOWED	40%

SITE AREA	11,154 SF
ALLOWED LOT COVERAGE	4,462 SF
MAIN STRUCTURE ROOF	1,765 SF
VEHICULAR USE	936 SF
COVERED PATIOS/DECKS	326 SF
TOTAL LOT COVERAGE	3,027 SF
LOT COVERAGE ALLOWED	40%
LOT COVERAGE PROPOSED	27.14 %

SITE AREA	11,154 SF
ALLOWED HARDSCAPE 9%	1,004 SF
WALKWAYS	403 SF
STAIRS	126 SF
RETAINING WALLS	128 SF
STAIR LANDING	183 SF
TOTAL HARDSCAPE AREA	840 SF
PERCENTAGE OF SITE AREA	7.53 %
· · · · · · · · · · · · · · · · · · ·	

WALL SEGMENT	MID-POINT ELEV (FT)	WALL LENGTH (FT)	TOTAL (FT)
A	122.50	40'	4,890'
В	116.75	48'	5,604'
С	109.00	21.5'	2,343.5'
D	110.00	10'	1'100'
E	110.75	18.5'	2,049'
F	116.50	38'	4,427'
TOTALS		176'	20,413.5'

		1	
WALL SEGMENT	LENGTH	COVERAGE	RESULT
А	40'	100%	40
В	48'	50%	24
С	21.5'	0%	0
D	10'	0%	0
E	18.6'	0%	0
F	38'	33%	12.54
TOTALS	176		76.54
BASEMENT AREA: 1,735 SF X $\frac{76.54}{176}$ = 746.05 EXCLUDED			

FORM DESIGN SEAL 5530 ALLAN STATE C	REGISTERED ARCHITECT
PROJECT SIT RING	9271 SE 76TH STREET MERCER ISLAND, WA 98040
ISSUE INFORMATION	MIT REVISIONS
SHEET TITLE	E PLAN CT DATA
SHEET NUMBER	





			JOB NUMB
TOPOGRAPHIC & BOUNDARY SURVEY			
		DRAFTED	
		CHECKED	
		SCALE:	
	REVISI	ON HISTORY	REVISIO
	DATE:	06/20/2016	DATE:
	DATE:	07/12/2016	SHEET
	DATE:	03/24/2017	1 0

BEARING MERIDIAN	SURVEYOR'S NOTES	
A BEARING OF S50°21'13"W BETWEEN TWO FOUND MONUMENTS, "A" AND "B", PER THE PLAT OF TARYWOOD PARK, AS RECORED IN VOLUME 127 OF PLATS, PAGES 46-50, RECORDS OF KING COUNTY, WA.	1) THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN JULY OF 2013	
VERTICAL DATUM CITY OF MERCER ISLAND BENCH MARK NO. 2415 (NAVO BB) (VISITED 07/0B/2013) FOUND "4""X4"" CONC W/COPPER TACK IN LEAD (ON 1.0')", LOCATED "250FT S, INTX E MERCER WAY & SE 76TH ST". ELEVATION = 104.47'	 THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISC OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVIENENCE ONLY. DESIGN SHOULD RELY ON SPOT ELEVATIONS. SUBJECT PROPERTY TAX PARCEL NO. 3024059036. SUBJECT PROPERTY AREA PER THIS SURVEY IS BB, 557 SQ.FT.+/ A TITLE REPORT WAS NOT FURNISHED AND THEREFORE, EASEMENTS 	⊗ 0 2 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
INSTRUMENTATION FOR THIS SURVEY WAS A LEICA ELECTRONIC DISTANCE MEASURING UNIT. PROCEDURES USED IN THIS SURVEY WERE DIRECT AND DESCRIPTION AND TO THE PROCEDURES USED IN THIS SURVEY WERE DIRECT AND	IF ANY, ARE NOT SHOWN ON THIS MAP. 5) THE TOP/TOE OF SLOPE SHOWN ON THIS SURVEY IS THE FIELD CREWS INTERPRETATION OF THE TOP/TOE OF SLOPE. THIS DOES NOT REPRESENT THE LIMITS OF A "40%" SLOPE AREA.	× © ® M M
HEVENSE ANGLES, NU CUHHECTIUN NECESSAHY. MEETS STATE STANDAHDS SET BY WAC 332-130-090.		0



	LEGEND	
FOUND MONUMENT AS NOTED SET REBAR & CAP AS NOTED FOUND REBAR & CAP AS NOTED UTILITY POLE CATCH BASIN SANITARY SEWER MANHOLE FINISHED FLOOR ELEVATION ELECTRIC METER SPOT ELEVATION FIRE HYDRANT STORM DRAIN MANHOLE WATER VALVE GAS VALVE ELECTRIC TRANSFORMER CABLE TV POLE TELEPHONE RISER TELEPHONE MANHOLE	ASPHALT SURFACE ASPHALT SURFACE STAIRS DECK GRAVEL SURFACE R-O-W RIGHT-OF-WAY () RECORD AS NOTED "TYP" TYPICAL UILDING LINE CENTERLINE OF ROAD SLOPE AS NOTED UILDING LINE CENTERLINE OF ROAD SLOPE AS NOTED GUY WIRE	 COTTON TREE (NOT SHOWN TO SCALE) TRUNK DIA SHOWN IN INCHES. REDWOOD TREE (NOT SHOWN TO SCALE) TRUNK DIA SHOWN IN INCHES. CEDAR TREE (NOT SHOWN TO SCALE) TRUNK DIA SHOWN IN INCHES. ALDER TREE (NOT SHOWN TO SCALE) TRUNK DIA SHOWN IN INCHES. MAPLE TREE (NOT SHOWN TO SCALE) TRUNK DIA SHOWN IN INCHES. MAPLE TREE (NOT SHOWN TO SCALE) TRUNK DIA SHOWN IN INCHES. HEMLOCK TREE (NOT SHOWN TO SCALE) TRUNK DIA SHOWN IN INCHES. FIR TREE (NOT SHOWN TO SCALE) TRUNK DIA SHOWN IN INCHES. FIR TREE (NOT SHOWN TO SCALE) TRUNK DIA SHOWN IN INCHES. DECIDUOUS TREE (NOT SHOWN TO SCALE) TRUNK DIA SHOWN IN INCHES.

OGRAPHIC & BOUNDARY SURVEY /4 OF THE SW 1/4 AND THE NW 1/4 OF THE SE 1/4 OF SEC. 30, TWP. 24N., RGE. 5E., W.M. CITY OF MERCER ISLAND, KING COUNTY, WA.	
CHESHIRE RESIDENCE 7615 E. MERCER WAY MERCER ISLAND. WA. 98040	measure

success

BUILDING PERMIT PLANS FOR CHESHIRE SHORT PLATLOT 1 LONG VIEW BELLA, LLC

VERTICAL DATUM

CITY OF MERCER ISLAND BENCH MARK NO. 2415 (NAVD 88) (VISITED 07/08/2013) FOUND "4""X4"" CONC W/COPPER TACK IN LEAD (DN 1.0')", LOCATED "250FT S, INTX E MERCER WAY & SE 76TH ST".

ELEVATION = 104.47'

METHOD OF SURVEY

INSTRUMENTATION FOR THIS SURVEY WAS A LEICA ELECTRONIC DISTANCE MEASURING UNIT. PROCEDURES USED IN THIS SURVEY WERE DIRECT AND REVERSE ANGLES, NO CORRECTION NECESSARY. MEETS STATE STANDARDS SET BY WAC 332-130-090.

BEARING MERIDIAN

A BEARING OF S50°21'13"W BETWEEN TWO FOUND MONUMENTS, "A" AND "B", PER THE PLAT OF TARYWOOD PARK, AS RECORED IN VOLUME 127 OF PLATS, PAGES 46–50, RECORDS OF KING COUNTY, WA.

LEGAL DESCRIPTION

NORTH 148.375 FEET OF GOVERNMENT LOT 6; EXCEPT THE WEST 1000 FEET ALSO THE NORTH 148.37 FEET OF A PORTION OF GIVERNMENT LOT 5 LYING WESTERLY OF EAST MERCER WAY; ALL IN SECTION 30, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M. IN KING COUNTY, WASHINGTON.

SURVEYOR'S NOTES

- 1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN JULY OF 2013. THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISC OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVIENENCE ONLY. DESIGN SHOULD RELY ON SPOT ELEVATIONS.
- 2. SUBJECT PROPERTY TAX PARCEL NO. 3024059036.
- 3. SUBJECT PROPERTY AREA PER THIS SURVEY IS 88,557 SQ.FT.+/-.

CODF

4. A TITLE REPOART WAS NOT FURNISHED AND THEREFORE, EASEMENTS IF ANY, ARE NOT SHOWN ON THIS MAP.

PROPOSED

5. THE TOP/TOE OF SLOPE SHOWN ON THIS SURVEY IS THE FIELD CREWS INTERPRETATION OF THE TOP/TOE OF SLOPE. THIS DOES NOT REPRESENT THE LIMITS OF A "40%" SLOPE AREA.

SETBACKS

RONT DE EAR	20' VARIABLE SEE MICC 19.02.020(C)(1)(c)(iii) 25'
SITE STATISTIC	<i>S</i>
ARCEL NO:	302405-9036
)TAL AREA: (+/–)	92,347 S.F. (2.12± ACRES)
ROPOSED NUMBER OF LOTS	2
AXIMUM UNITS:	2
ONING	R-9.6
KISTING USE:	SINGLE FAMILY RESIDENTIAL
ROPOSED USE:	SINGLE FAMILY RESIDENTIAL
AXIMUM BUILDING HEIGHT:	30' ABOVE TO THE HIGHEST POINT OF THE ROOF
AXIMUM IMPERVIOUS SURFACE:	
LOT SLOPE	LOT COVERAGE (LIMIT FOR IMPERVIOUS SURFACE)
LESS THAN 15% 15% TO LESS THAN 30% 30% TO 50% GREATER THAN 50% SLOI	40%* 35% 30% PE 20%

30% TO 50% GREATER THAN 50% SLOPE

LOT 1 HAS A SLOPE OF 12%, THEREFORE THE MAXIMUM LOT COVERAGE IS 40% OR 4,461 SF.

SCALE: 1'' = 10'



SHEET INDEX

1	TITLE SHEET
2	PRELIMINARY SHORT PLAT
3	ROAD & GRADING PLAN
4	UTILITY PLAN
5	STORMWATER DETAILS
6	TREE PLAN

APPLICANT/OWNER

DEREK CHESHIRE 7615 MERCER WAY MERCER ISLAND, WA 98040 DCHESHIRE@BOSKONE.NET

ENGINEER

CORE DESIGN, INC. 12100 NE 195TH ST, SUITE 300 BOTHELL, WA 98011 (425) 885–7877 CONTACT: SHERI MURATA, P.E. – ENGINEER SHM@COREDESIGNINC.COM

SURVEYOR

TERRANE 10801 MAIN STREET, SUITE 102 BELLEVUE, WA. 98004 (425) 458–4488 CONTACT: EDWIN J. GREEN SUPPOR TØTERRANE.NET

ARBORIST

A.B.C. CONSULTING ARBORISTS, LLC DANIEL J. MAPLE (509) 953-0293 DANIEL@ABCARBORIST.COM

GEOTECHNICAL ENGINEER

TERRA ASSOCIATES, INC. 12220 113TH AVENUE NE, SUITE 130 KIRKLAND, WA. 98034 (425) 821–7777 CONTACT CAROLYN DECKER



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PERMIT NO: 2109-050-SUB1

DATE DATE 6/21/22	10/5/22	25/17/27									
NO. REVISIO	2 CITY COMMENTS	3 CYIY COMMENIS									
HIDEKO A	ALL THE CONTRACT OF THE CONTRA										
	CIVIL ENGINEERING	LANDSCAPE ARCHITECTURE	PLANNING	SUKVEYING		hell, Washington 98011 425.885.7877					
				DESIGN		12100 NE 195th St, Suite 300 Bot					
	TITLE SHEET CHESHIRE SHORT PLAT LOT 1 LONG VIEW BELLA, LLC DETER WAY MERCER ISLAND, WA 98040										
io (1ST SUB)	NURATA, P.E.	N D. SIMPSON-GORDON	IFRI MIIRATA P.F.		KI NESI, FLS	CT MANAGER					
JUL Y 202	SHERI I	SAI	- 7		KUBH	ROJEC					
DATE JULY 202	DESIGNED SHERI	TH DRAWN SAN	APPROVED SH		DF 6	PROJEC					





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SLOPE AS NOTED
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	MAPLE TREE (NOT SHOW TRUNK DIA SHOWN IN IN
	HEMLOCK TREE (NOT SH TRUNK DIA SHOWN IN IN
No.	FIR TREE (NOT SHOWN T TRUNK DIA SHOWN IN IN
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}	DECIDUOUS TREE (NOT SHOW TRUNK DIA SHOWN IN INCHE



(SEE BMP T5.13 POST CONSTRUCTION SOIL QUALITY AND DEPTH IN THE 2014 DOE MANUAL FOR THE FULL DESIGN REQUIREMENT)

<u>SOIL_RETENTION</u>

RETAIN, IN AN UNDISTURBED STATE, THE DUFF LAYER AND NATIVE TOPSOIL TO THE MAXIMUM EXTENT PRACTICABLE. IN ANY AREAS REQUIRING GRADING REMOVE AND STOCKPILE THE DUFF LAYER AND TOPSOIL ON SITE IN A DESIGNATED, CONTROLLED AREA, NOT ADJACENT TO PUBLIC RESOURCES AND CRITICAL AREAS, TO BE REAPPLIED TO OTHER PORTIONS OF THE SITE WHERE FEASIBLE.

SOIL QUALITY

- 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, DEMONSTRATE THE FOLLOWING:
- 1. A TOPSOIL LAYER WITH A MINIMUM ORGANIC MATTER CONTENT OF 10% DRY WEIGHT IN PLANTING BEDS, AND 5% ORGANIC MATTER CONTENT IN TURF AREAS, AND A PH FROM 6.0 TO 8.0 OR MATCHING THE PH OF THE UNDISTURBED SOIL. 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.

2. MULCH PLANTING BEDS WITH 2 INCHES OF ORGANIC MATERIAL

- 3. USE COMPOST AND OTHER MATERIALS THAT MEET THESE ORGANIC CONTENT REQUIREMENTS: a. THE ORGANIC CONTENT FOR "PRE-APPROVED" AMENDMENT RATES CAN BE MET ONLY USING COMPOST MEETING THE COMPOST SPECIFICATION FOR BIORETENTION (BMP 17.30), WITH THE EXCEPTION THAT THE COMPOST MAY HAVE UP TO 35% BIOSOLIDS OR MANURE.
- THE COMPOST MUST ALSO HAVE AN ORGANIC MATTER CONTENT OF 40% TO 65%, AND A CARBON TO NITROGEN RATIO BELOW 25:1.
- THE CARBON TO NITROGEN RATIO MAY BE AS HIGH AS 35:1 FOR PLANTINGS COMPOSED ENTIRELY OF PLANTS NATIVE TO THE PUGET SOUND LOWLANDS REGION. b. CALCULATED AMENDMENT RATES MAY BE MET THROUGH USE OF COMPOSTED MATERIAL
- MEETING (A.) ABOVE; OR OTHER ORGANIC MATERIALS AMENDED TO MEET THE CARBON TO NITROGEN RATIO REQUIREMENTS, AND NOT EXCEEDING THE CONTAMINANT LIMITS IDENTIFIED IN TABLE 220-B, TESTING PARAMETERS, IN WAC 173- 350-220.

UNDERGROUND LOCATOR SERVICE

CALL BEFORE YOU DIG!

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PERMIT NO: 2109-050-SUB1

DATE 6/21/22 10/5/22 10/31/23	
NO. REVISIONS 1 CITY COMMENTS 2 CITY COMMENTS 3 CITY COMMENTS 4 LOWERED FF	
HIDERO	
CIVIL ENGINEERING LANDSCAPE ARCHITECTURE PLANNING SURVEYING	
12100 NE 195th St, Suite 300 Both	
STORMWATER DETAILS CHESHIRE SHORT PLAT LOT 1 LONG VIEW BELLA, LLC 7615 E MERCER WAY MERCER ISLAND, WA 98040	
JULY 2020 (1ST SUB) D SHERI MURATA, P.E. SAM D. SIMPSON-GORDON ED SHERI MURATA, P.E. ROBERT WEST, PLS	
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									CRZ-	
ID	Common	Latin	DBH	Height	Spread	Condition	Action	TPZ- [ft]	[ft]	Notes
102	Maple	Acer macrophyllum	9	37	0	Dead (0)	Not Viable	N/A	N/A	Dead and bark peeling.
103	Maple	Acer macrophyllum	12	68	17	Fair (70+)	Retain-Viable	12	6	
104	Maple	Acer macrophyllum	24.84	75	23	Good (80+)	Retain-Viable	24.84	12.42	
105	Maple	Acer macrophyllum	11.5	65	20	Fair (70+)	Retain-Viable	11.5	5.75	
106	Maple	Acer macrophyllum	11.9	50	28	Poor (50+)	Retain-Viable	11.9	5.95	Suppressed
107	Maple	Acer macrophyllum	18.4	68	40	Fair (70+)	Retain-Viable	18.4	9.2	
109	Maple	Acer macrophyllum	11.56	55	21	Fair (70+)	Retain-Viable	11.56	5.78	
110	Maple	Acer macrophyllum	13.93	50	28	Fair (70+)	Retain-Viable	13.93	6.965	
111	Cedar	Thuja plicata	16.5	50	26	Good (80+)	Retain-Viable	16.5	8.25	
112	Maple	Acer macrophyllum	8	50	12	Fair (70+)	Conflicts with plans	8	4	
113	Maple	Acer macrophyllum	16	72	20	Very Poor (25+)	Not Viable	16	8	Mostly dead, not long-term viable
114	Maple	Acer macrophyllum	14.5	72	28	Poor (50+)	Retain-Viable	14.5	7.25	
115	Maple	Acer macrophyllum	15	50	20	Very Poor (25+)	Not Viable	15	7.5	Extensive root decay.
118	Cedar	Thuja plicata	6.2	29	18	Good (80+)	Conflicts with plans	6.2	3.1	
119	Maple	Acer macrophyllum	15	68	18	Fair (70+)	Conflicts with plans	15	7.5	Poor taper/LCR,
120	Maple	Acer macrophyllum	10	48	18	Fair (70+)	Conflicts with plans	10	5	
121	Cedar	Thuja plicata	7	28	15	Poor (50+)	Not Viable	7	3.5	Previously uprooted
122	Cedar	Thuja plicata	7.6	30	15	Fair (70+)	Conflicts with plans	7.6	3.8	
123	Cedar	Thuja plicata	11	42	26	Good (80+)	Conflicts with plans	11	5.5	
124	Cedar	Thuja plicata	15	45	22	Fair (70+)	Conflicts with plans	15	7.5	
126	Maple	Acer macrophyllum	13.87	50	34	Good (80+)	Conflicts with plans	13.87	6.935	
127	W. Pine	Pinus monticola	8.2	48	18	Good (80+)	Conflicts with plans	8.2	4.1	
131	Redwood	Sequoia sempervirens	28	98	35	Excellent (90+)	Conflicts with plans	21	10.5	
132	Alder	Alnus rubra	12.1	50	0	Dead (0)	Not Viable	15.125	7.5625	
100	G 1						D. J. TU 11	*2 (10	10	*TPZ of 18' is viable. Cambistat 6-9 months
133	Cedar	Thuja plicata	36	90	24	Excellent (90+)	Retain-Viable	*36/18	18	before working near tree
134	Maple	Acer macrophyllum	13	40	29	Poor (50+)	Not Viable	13	6.5	Suppressed /bowed crown/ not viable
135	Cherry	Prunus ssp.	10	45	22	Fair/poor (50 - 70)	Conflicts with plans	12.5	6.25	AREA Required to laydown building material
136	Cedar	Thuja plicata	11.1	40	22	Good (80+)	Conflicts with plans	11.1	5.55	AREA Required to laydown building material
13/	Fir	Pseudotsuga menziesu	22	98	30	Good (80+)	Conflicts with plans	22	11	
138	Alder	Alnus rubra	16	50	26	Fair $(70+)$	Not Viable	20	10	Top $\frac{1}{2}$ is dead.
139	Cedar	Thuja plicata	10	34	15	Good (80+)	Retain-Viable	10	5	
140	Cedar	Thuja plicata	12	45	25	Good (80+)	Retain-Viable	12	6	
141	Cedar	Thuja plicata	11.2	43	25	Good (80+)	Retain-Viable	11.2	5.6	Tree has been towned @ 202CTM
142	Maple	Acer macrophyllum	38	25	25	Very Poor (25+)	Retain-Viable	38	19	Monitor and mitigation prune as needed
143	Cedar	Thuja plicata	7.1	40	25	Good (80+)	Retain-Viable	7.1	3.55	
144	Maple	Acer macrophyllum	24	55	25	Fair (70+)	Retain-Viable	24	12	

SE 76TH ST _140 ~8" SSMH SSCO STA. 2003+99,94, 37,66 Reinforced Concrete StandardRIM 102.88 4" IE IN 98.88 (W) 6" IE OUT 98.88 (SE) 143 • / M A | | IE 12" CONC 97.13'

CITY OF MERCER ISLAND BENCH MARK NO. 2415 (NAVD 88) (VISITED 07/08/2013) FOUND "4""X4"" CONC W/COPPER TACK IN LEAD (DN 1.0')", LOCATED "250FT S, ÍNTX E MERCÉR WAY & SE 76TH ST".

INSTRUMENTATION FOR THIS SURVEY WAS A LEICA ELECTRONIC DISTANCE MEASURING UNIT. PROCEDURES USED IN THIS SURVEY WERE DIRECT AND REVERSE ANGLES, NO CORRECTION NECESSARY. MEETS STATE STANDARDS SET BY WAC 332–130–090.

A BEARING OF S50°21'13"W BETWEEN TWO FOUND MONUMENTS, "A" AND "B", PER THE PLAT OF TARYWOOD PARK, AS RECORED IN VOLUME 127 OF PLATS, PAGES 46–50, RECORDS OF KING COUNTY, WA.

NORTH 148.375 FEET OF GOVERNMENT LOT 6; EXCEPT THE WEST 1000 FEET ALSO THE NORTH 148.37 FEET OF A PORTION OF GIVERNMENT LOT 5 LYING WESTERLY OF EAST MERCER WAY; ALL IN SECTION 30, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M. IN KING COUNTY, WASHINGTON.

1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN JULY OF 2013. THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISC OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVIENENCE ONLY. DESIGN SHOULD RELY

3. SUBJECT PROPERTY AREA PER THIS SURVEY IS 88,557 SQ.FT.+/-.

4. A TITLE REPOART WAS NOT FURNISHED AND THEREFORE, EASEMENTS IF ANY, ARE NOT SHOWN ON THIS MAP.

5. THE TOP/TOE OF SLOPE SHOWN ON THIS SURVEY IS THE FIELD CREWS INTERPRETATION OF THE TOP/TOE OF SLOPE. THIS DOES NOT REPRESENT THE LIMITS OF A "40%" SLOPE AREA.



NO. REVISIONS DATE	CIVIL ENGINEERING	LANDSCAPE ARCHITECTURE	PLANNING THE TOTAL	DESIGN SURVETING	0 NE 195th St, Suite 300 Bothell, Washington 98011 425.885.7877	
		CHESHIKE SHUKI PLAI LUI 1		7615 E MERCER WAY	MERCER ISLAND, WA 98040	
DATE JULY 2020 (1ST SUB)	designed <i>Sheri Murata, P.E.</i>	DRAWN SAM D. SIMPSON-GORDON	APPROVED SHERI MURATA. P.E.	ROBERT WEST, PLS	PROJECT MANAGER	
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ple	Acer macrophyllum	9	37	0	Dead (0)	Not Viable	N/A	N/A	Dead and bark peeling.
ple	Acer macrophyllum	12	68	17	Fair (70+)	Retain-Viable	12	6	
ple	Acer macrophyllum	24.84	75	23	Good (80+)	Retain-Viable	24.84	12.42	
aple	Acer macrophyllum	11.5	65	20	Fair (70+)	Retain-Viable	11.5	5.75	
aple	Acer macrophyllum	11.9	50	28	Poor (50+)	Retain-Viable	11.9	5.95	Suppressed
ple	Acer macrophyllum	18.4	68	40	Fair (70+)	Retain-Viable	18.4	9.2	
ple	Acer macrophyllum	11.56	55	21	Fair (70+)	Retain-Viable	11.56	5.78	
ple	Acer macrophyllum	13.93	50	28	Fair (70+)	Retain-Viable	13.93	6.965	
dar	Thuja plicata	16.5	50	26	Good (80+)	Retain-Viable	16.5	8.25	
ple	Acer macrophyllum	8	50	12	Fair (70+)	Conflicts with plans	8	4	
ple	Acer macrophyllum	16	72	20	Very Poor (25+)	Not Viable	16	8	Mostly dead, not long-term viable
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ple	Acer macrophyllum	15	50	20	Very Poor (25+)	Not Viable	15	7.5	Extensive root decay.
dar	Thuja plicata	6.2	29	18	Good (80+)	Conflicts with plans	6.2	3.1	
aple	Acer macrophyllum	15	68	18	Fair (70+)	Conflicts with plans	15	7.5	Poor taper/LCR,
ple	Acer macrophyllum	10	48	18	Fair (70+)	Conflicts with plans	10	5	
dar	Thuja plicata	7	28	15	Poor (50+)	Not Viable	7	3.5	Previously uprooted
dar	Thuja plicata	7.6	30	15	Fair (70+)	Conflicts with plans	7.6	3.8	
dar	Thuja plicata	11	42	26	Good (80+)	Conflicts with plans	11	5.5	
dar	Thuja plicata	15	45	22	Fair (70+)	Conflicts with plans	15	7.5	
ple	Acer macrophyllum	13.87	50	34	Good (80+)	Conflicts with plans	13.87	6.935	
Pine	Pinus monticola	8.2	48	18	Good (80+)	Conflicts with plans	8.2	4.1	
dwood	Sequoia sempervirens	28	98	35	Excellent (90+)	Conflicts with plans	21	10.5	
der	Alnus rubra	12.1	50	0	Dead (0)	Not Viable	15.125	7.5625	
dar	Thuja plicata	36	90	24	Excellent (90+)	Retain-Viable	*36/18	18	*TPZ of 18' is viable. Cambistat 6-9 months before working near tree
ple	Acer macrophyllum	13	40	29	Poor (50+)	Not Viable	13	6.5	Suppressed /bowed crown/ not viable
eny	Prunus ssp.	10	45	22	Fair/poor (50 -70)	Conflicts with plans	12.5	6.25	AREA Required to laydown building material
dar	Thuja plicata	11.1	40	22	Good (80+)	Conflicts with plans	11.1	5.55	AREA Required to laydown building material
•	Pseudotsuga menziesii	22	98	30	Good (80+)	Conflicts with plans	22	11	AREA Required to laydown building material
der	Alnus rubra	16	50	26	Fair (70+)	Not Viable	20	10	Top ½ is dead.
dar	Thuja plicata	10	34	15	Good (80+)	Retain-Viable	10	5	
dar	Thuja plicata	12	45	25	Good (80+)	Retain-Viable	12	6	
dar	Thuja plicata	11.2	43	25	Good (80+)	Retain-Viable	11.2	5.6	
mle	Acer macrophyllum	38	25	25	Very Poor (25+)	Retain-Viable	38	19	Tree has been topped @ 20'. Monitor and mitigation prune as needed
dar	Thuja plicata	7.1	40	25	Good (80+)	Retain-Viable	7.1	3.55	
ple	Acer macrophyllum	24	55	25	Fair (70+)	Retain-Viable	24	12	
	1 -			100					

REMOVE ALL INVASIVES FROM SITE. PLANTING SHOULD BE DONE OCTOBER 1 - APRIL 1. FALL PLANTINGS ARE PREFFERED. FOR 2 YR=EARS MAY- SEPTEMBER MONITOR PLANTS/SOILS FOR MOISTURE WEEKLY, SUPPLEMENTAL WATER AS NEEDED. FOR 3 YEARS MONITOR AND WEED AS NEEDED TO CONTROL WEEDS (PROPER MULCHING SHOULD REDUCE THE NEED TO WEED)

neasured d)	Tree replacement Ratio	Number of Trees Proposed for Removal	Number of Tree Required for Replacement Based on Size/Type
	1Exempt 1 at 1:1	5 1	0 1
	2:1	8	16
	3:1	1	3
tional Tree	6:1	0	0
	TOTAL TE REPLACE	REE MENTS	20

	SPACING	QUANTITY
	10'	10
И		
оск	10'	4
IANA		
O	10'	6
LII		
	TOTAL	20

SEAL	N BLAIN CLARK
CONSULTANT	E OF WASHINGTON
PROJECT	
LA LA	Т 3040
BEL	TH STREE JD, WA 98
IEV	71 SE 767 Er Islan
NGV	927 MERC
ISSUE INFORMATIO	N

SHEET NUMBER

LOWER FLOOR DOOR SCHEDULE

MARK	R.O. SIZE	TYPE	THICK	REMARKS
001	8'0 X 16'0	OVERHEAD GARAGE DOOR	1-3/4"	
002	6'0 X 7"0	EXTERIOR FRENCH DOORS	1-3/8"	GLAZED U VALUE = 0,28
003	3'0 X 7'0	SOLID CORE FLUSH	1-3/4"	1 HOUR FIRE RATED SELF CLOSING
005	2'10 X 7'0	SOLID CORE FLUSH	1-3/8"	
006	2'10 X 7'0	SOLID CORE FLUSH	1-3/8"	
007	2'6 X 7'0	SOLID CORE FLUSH	1-3/8"	
008	5'0 X 7'0	SOLID CORE BI-FOLD DOORS	1-3/8"	
009	3'0 X 7'0	SOLID CORE FLUSH	1-3/8"	
010	6'0 X 7'0	SOLID CORE BI-FOLD DOORS	1-3/8"	
011	2'6 X 7'0	SOLID CORE FLUSH	1-3/8"	
012	3'0 X 7'0	SOLID CORE FLUSH	1-3/8"	

PLAN KEY

- SD/CMA HARDWIRED COMBINED SMOKE/CARBON MONOXIDE ALARM
- HARDWIRED SMOKE DETECTOR (\bullet)
- CFM EXHAUST VENTILATION FAN
- 0XX DOOR TAG
- SLW STAIRWAY LIGHT SWITCH

FIREBLOCKING & DRAFTSTOPPING

PROVIDE HORIZONTAL AND VERTICAL FIREBLOCKING AND DRAFTSTOPPING AS REQUIRED PER IRC R302.11 AND R302.12







MAIN FLOOR DOOR SCHEDULE

MARK	R.O. SIZE	TYPE	THICK	REMARKS
100	3'6 X 8'0	EXTERIOR ENTRY DOOR	1-3/4"	GLAZED, TEMPERED U VALUE = 0.28
101	11'0 X 8'0	EXTERIOR SLIDER	1-3/4"	GLAZED, TEMPERED U VALUE = 0.28
102	6'0 X 8'0	EXTERIOR FRENCH DOORS	1-3/4"	GLAZED, TEMPERED U VALUE = 0.28
103	2'6 X 8'0	SOLID CORE FLUSH	1-3/8"	
104	4'0 X 8'0	SOLID CORE BI-FOLD DOOR	1-3/8"	
105	2'6 X 8'0	SOLID CORE FLUSH	1-3/8"	
106	4'0 X 8'0	POCKET DOOR	1-3/8"	
107	4'0 X 8'0	POCKET DOOR	1-3/8"	

PLAN KEY

- HARDWIRED COMBINED SMOKE/CARBON MONOXIDE ALARM
- SMOKE DETECTOR

1XX DOOR TAG

FIREBLOCKING & DRAFTSTOPPING

PROVIDE HORIZONTAL AND VERTICAL FIREBLOCKING AND DRAFTSTOPPING AS REQUIRED PER IRC R302.11 AND R302.12











SECOND FLOOR DOOR SCHEDULE

			-	
MARK	R.O. SIZE	TYPE	THICK	REMARKS
200	3'0 X 7'0	SOLID CORE FLUSH	1-3/8"	
201	2'10 X 7'0	SOLID CORE FLUSH	1-3/8"	
202	2'10 X 7'0	SOLID CORE FLUSH	1-3/4"	
203	2'6 X 7'0	SOLID CORE FLUSH	1-3/8"	
204	2'6 X 7'0	SOLID CORE FLUSH	1-3/8"	
205	2'6 X 7'0	SOLID CORE FLUSH	1-3/8"	
206	4'0 X 7'0	POCKET DOOR	1-3/8"	
207	3'0 X 7'0	POCKET DOOR	1-3/8"	
208	2'6 X 7'0	POCKET DOOR	1-3/8"	
209	5'0 X 7'0	SOLID CORE BI-FOLD CLOSET	1-3/8"	
210	10'0 X 8'0	EXTERIOR SLIDER		GLAZED, TEMPERED U VALUE =0.28

PLAN KEY

- O SD/CMA HARDWIRED COMBINED SMOKE/CARBON MONOXIDE ALARM
- HARDWIRED SMOKE DETECTOR
- CFM EXHAUST VENTILATION FAN
- 2XX DOOR TAG
- SLW STAIRWAY LIGHT SWITCH

FIREBLOCKING & DRAFTSTOPPING

PROVIDE HORIZONTAL AND VERTICAL FIREBLOCKING AND DRAFTSTOPPING AS REQUIRED PER IRC R302.11 AND R302.12





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Deded period bella lla lla lla lla lla lla lla lla lla
ISSUE INFORMATION 11.01.2023 PERMIT REVISIONS
SHEET TITLE
SHEET NUMBER

MARK		TVDE	ΟΤΥ		DEMARKS
WANN	R.O. SIZE			UVALUE	REWARKS
A	3'0 X 9'0	CASEMENT/FIXED	10	0.28	TEMPERED LOWER LITE
В	2'6 X 9'0	CASEMENT/ FIXED	2	0.28	TEMPERED LOWER LITE
С	3'0 X 5'6	CASEMENT	1	0.28	
D	2'6 X 5'6	CASEMENT	3	0.28	
E	2'0 X 9'0	FIXED	1	0.28	TEMPERED
F	3'6 X 9'0	FIXED	1	0.28	TEMPERED
G	2'6 X 9'0	FIXED	1	0.28	TEMPERED
н	3'4 X 9'0	FIXED	1	0.28	TEMPERED
I	3'10 X 9'0	FIXED	1	0.28	TEMPERED
J	3'0 X 5'0	CASEMENT	3	0.28	
к	2'6 X 5'0	CASEMENT	3	0.28	
L	2'0 X 5'0	FIXED	1	0.28	
М	2'6 X 4'0	CASEMENT	3	0.28	
Ν	3'0 X 6'6	FIXED	1	0.28	
0	3'6 X 7'6	FIXED	3	0.28	
Р	11'0 X '0	FIXED	1	0.28	
Q	3'0 X 7'6	CASEMENT	2	0.28	
R	2'6 X 7'6	FIXED	1	0.28	TEMPERED
S	3'4 X 7'6	FIXED/AWNING	1	0.28	TEMPERED AWNING
т	3'10 X 7'6	FIXED/AWNING	1	0.28	TEMPERED AWNING
U	3'0 X4'6	CASEMENT	2	0.28	
V	3'0 X 4'0	CASEMENT	2	0.28	
W	3'6 X 4'0	CASEMENT	1	0.28	







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	MARK		TYPE			REMARKS
	A	3'0 X 9'0		10	0.28	
	В	2'6 X 9'0	CASEMENT/ FIXED	2	0.28	TEMPERED LOWER LITE
	С	3'0 X 5'6	CASEMENT	1	0.28	
	D	2'6 X 5'6	CASEMENT	3	0.28	
	E	2'0 X 9'0	FIXED	1	0.28	TEMPERED
	F	3'6 X 9'0	FIXED	1	0.28	TEMPERED
	G	2'6 X 9'0	FIXED	1	0.28	TEMPERED
		34 X 90 3'10 X 9'0	FIXED	1	0.28	TEMPERED
	J	3'0 X 5'0	CASEMENT	3	0.28	
	К	2'6 X 5'0	CASEMENT	3	0.28	
	L	2'0 X 5'0	FIXED	1	0.28	
	М	2'6 X 4'0	CASEMENT	3	0.28	
	N	3'0 X 6'6	FIXED	1	0.28	
	0	3'6 X 7'6	FIXED	3	0.28	
	P	3'0 X 7'6			0.28	
	R	2'6 X 7'6	FIXED	<u>2</u>	0.20	
	S	3'4 X 7'6	FIXED/AWNING	1	0.28	TEMPERED AWNING
	T	3'10 X 7'6	FIXED/AWNING	1	0.28	TEMPERED AWNING
	U	3'0 X4'6	CASEMENT	2	0.28	
	V	3'0 X 4'0	CASEMENT	2	0.28	
	W	3'6 X 4'0	CASEMENT	1	0.28	
• 146	' MAX. BUILDI	NG HEIGHT				
• 146	" MAX. BUILDI 137'- MAX 137'- MAX	NG HEIGHT				
• 146	" MAX. BUILDI	6" Top plate				
	' MAX. BUILDI	6" Top plate				
• 146	' MAX. BUILDI	6" Top plate				
	' MAX. BUILDI	6" Top plate				
• 146	' MAX. BUILDI	6" Top plate				
• 146	"MAX. BUILDI	6" TOP PLATE				
• 146	' MAX. BUILDI	6" TOP PLATE				
• 146	' MAX. BUILDI	6" TOP PLATE 6" DND FLOOR				
• 146	' MAX. BUILDI ★ 137'- MAX	NG HEIGHT				
• 146	' MAX. BUILDI ★ 137'- MAX □ □ □ □ 0 129'- SECC □ □ 129'- SECC □ □ □ □ □ □ □ □ □ □ □ □ □	NG HEIGHT				
• 146	' MAX. BUILDI	NG HEIGHT				
• 146	' MAX. BUILDI	NG HEIGHT				
• 146	' MAX. BUILDI	9" TOP PLATE				
• 146	' MAX. BUILDI	6" TOP PLATE				
• 146	' MAX. BUILDI	6" TOP PLATE				
• 146	"MAX. BUILDI	6" TOP PLATE				
• 146	' MAX. BUILDI → 137'- MAX □0- 0- 0- 0- 0- 0- 0- 0- 0- 0-	6" TOP PLATE				
• 146	' MAX. BUILDI 137'- MAX □ □ □ □ □ 0 129'- SECO □ □ □ □ □ □ □ □ □ □ □ □ □	NG HEIGHT				





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MARK	R.O. SIZE	TYPE	QTY	U VALUE	REMARKS
А	3'0 X 9'0	CASEMENT/FIXED	10	0.28	TEMPERED LOWER LITE
В	2'6 X 9'0	CASEMENT/ FIXED	2	0.28	TEMPERED LOWER LITE
С	3'0 X 5'6	CASEMENT	1	0.28	
D	2'6 X 5'6	CASEMENT	3	0.28	
E	2'0 X 9'0	FIXED	1	0.28	TEMPERED
F	3'6 X 9'0	FIXED	1	0.28	TEMPERED
G	2'6 X 9'0	FIXED	1	0.28	TEMPERED
Н	3'4 X 9'0	FIXED	1	0.28	TEMPERED
I	3'10 X 9'0	FIXED	1	0.28	TEMPERED
J	3'0 X 5'0	CASEMENT	3	0.28	
к	2'6 X 5'0	CASEMENT	3	0.28	
L	2'0 X 5'0	FIXED	1	0.28	
М	2'6 X 4'0	CASEMENT	3	0.28	
Ν	3'0 X 6'6	FIXED	1	0.28	
0	3'6 X 7'6	FIXED	3	0.28	
Р	11'0 X '0	FIXED	1	0.28	
Q	3'0 X 7'6	CASEMENT	2	0.28	
R	2'6 X 7'6	FIXED	1	0.28	TEMPERED
S	3'4 X 7'6	FIXED/AWNING	1	0.28	TEMPERED AWNING
Т	3'10 X 7'6	FIXED/AWNING	1	0.28	TEMPERED AWNING
U	3'0 X4'6	CASEMENT	2	0.28	
V	3'0 X 4'0	CASEMENT	2	0.28	
W	3'6 X 4'0	CASEMENT	1	0.28	





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WINDOW SCHEDULE					
R.O. SIZE	TYPE	QTY	U VALUE	REMARKS	
3'0 X 9'0	CASEMENT/FIXED	10	0.28	TEMPERED LOWER LITE	
2'6 X 9'0	CASEMENT/ FIXED	2	0.28	TEMPERED LOWER LITE	
3'0 X 5'6	CASEMENT	1	0.28		
2'6 X 5'6	CASEMENT	3	0.28		
2'0 X 9'0	FIXED	1	0.28	TEMPERED	
3'6 X 9'0	FIXED	1	0.28	TEMPERED	
2'6 X 9'0	FIXED	1	0.28	TEMPERED	
3'4 X 9'0	FIXED	1	0.28	TEMPERED	
3'10 X 9'0	FIXED	1	0.28	TEMPERED	
3'0 X 5'0	CASEMENT	3	0.28		
2'6 X 5'0	CASEMENT	3	0.28		
2'0 X 5'0	FIXED	1	0.28		
2'6 X 4'0	CASEMENT	3	0.28		
3'0 X 6'6	FIXED	1	0.28		
3'6 X 7'6	FIXED	3	0.28		
11'0 X '0	FIXED	1	0.28		
3'0 X 7'6	CASEMENT	2	0.28		
2'6 X 7'6	FIXED	1	0.28	TEMPERED	
3'4 X 7'6	FIXED/AWNING	1	0.28	TEMPERED AWNING	
3'10 X 7'6	FIXED/AWNING	1	0.28	TEMPERED AWNING	
3'0 X4'6	CASEMENT	2	0.28		
3'0 X 4'0	CASEMENT	2	0.28		
3'6 X 4'0	CASEMENT	1	0.28		
	IDOW R.O. SIZE 3'0 × 9'0 2'6 × 9'0 3'0 × 5'6 2'6 × 5'6 2'6 × 9'0 3'6 × 9'0 3'6 × 9'0 3'6 × 9'0 3'6 × 9'0 3'6 × 9'0 2'6 × 5'0 2'6 × 5'0 2'6 × 5'0 2'6 × 5'0 2'6 × 5'0 2'6 × 5'0 2'6 × 5'0 2'6 × 5'0 2'6 × 5'0 2'6 × 5'0 2'6 × 5'0 2'6 × 5'0 2'6 × 5'0 2'6 × 5'0 2'6 × 7'0 3'0 × 6'6 3'0 × 7'6 3'10 × 7'6 3'10 × 7'6 3'10 × 7'6 3'0 × 4'0 3'0 × 4'0 3'0 × 4'0	IDOW SCHEDULE R.O. SIZE TYPE 3'0 X 9'0 CASEMENT/FIXED 2'6 X 9'0 CASEMENT/ FIXED 3'0 X 5'6 CASEMENT 2'6 X 5'6 CASEMENT 2'6 X 5'6 CASEMENT 2'0 X 9'0 FIXED 3'0 X 5'6 CASEMENT 2'0 X 9'0 FIXED 3'6 X 9'0 FIXED 3'6 X 9'0 FIXED 3'10 X 9'0 FIXED 3'10 X 9'0 FIXED 3'10 X 9'0 FIXED 3'0 X 5'0 CASEMENT 2'0 X 5'0 CASEMENT 2'0 X 5'0 FIXED 3'0 X 5'0 CASEMENT 2'0 X 5'0 FIXED 3'0 X 6'6 FIXED 3'0 X 6'6 FIXED 3'0 X 7'6 FIXED 3'0 X 4'6 CASEMENT 3'0 X 4'6 CASEMENT	Image: style	R.O. SIZE TYPE QTY U VALUE 3'0 X 9'0 CASEMENT/FIXED 10 0.28 2'6 X 9'0 CASEMENT/FIXED 2 0.28 3'0 X 5'6 CASEMENT/FIXED 1 0.28 2'6 X 5'6 CASEMENT 3 0.28 2'0 X 9'0 FIXED 1 0.28 2'0 X 9'0 FIXED 1 0.28 2'6 X 5'6 CASEMENT 3 0.28 2'0 X 9'0 FIXED 1 0.28 3'6 X 9'0 FIXED 1 0.28 3'6 X 9'0 FIXED 1 0.28 3'10 X 9'0 FIXED 1 0.28 3'10 X 5'0 CASEMENT 3 0.28 2'0 X 5'0 FIXED 1 0.28 2'0 X 5'0 FIXED 3 0.28 2'0 X 5'0 FIXED 3 0.28 3'0 X 6'6 FIXED 3 0.28 3'0 X 6'6 FIXED 1 0.28	



		Â	LINE OF EXISTING GRADE
4DE			
			 GROU

FLOOR	W1 BELOW GRADE WALL	R1 TYPICAL SLOPED ROOF
URAL E SLAB	DRAINAGE MAT SPRAY ON WATERPROOFING CONCRETE WALL PER STRUCTURAL 2 X 4 STUDS @ 16" O.C. SET OFF FROM CONCRETE R-21 BATT INSULATIONG.W.B. 5/8" GWB	STANDING SEAM METAL ROOFING 30# BUILDING FELT SHEATHING PER STRUCTURAL ROOF JOISTS PER STRUCTURAL R-14 CLOSED CELL SPRAY FOAM INSULATION AND R-25 BATT NSULATION (MIN R-49 COMBINED) 5/8" GWB
GARAGE AL	 ₩2 TYPICAL EXTERIOR WALL WALL FINISH PER ELEVATIONS 2 LAYERS 60 MIN. BUILDING PAPER PLYWOOD SHEATHING PER STRUCTURAL 2 X 6 STUDS @ 16" O.C. R-21 KRAFT FACED BATT INSULATION 5/8" G.W.B. 	R2 FLAT ROOF DECK OVER HEATED SPACE FINISH DECKING PER PLANS TAPERED 2X SLEEPERS MEMBRANE ROOFING SHEATHING PER STRUCTURAL R-14 CLOSED CELL SPRAY FOAM INSULATION AND R-25 BATT NSULATION (MIN R-49 COMBINED)
ACE	W3 TYPICAL INTERIOR WALL	5/8" G.W.B.
AL	5/8" GWB 2 X 4 STUDS @ 16" O.C. 5/8" GWB	

OR	W1 BELOW GRADE WALL	[
B	DRAINAGE MAT SPRAY ON WATERPROOFING CONCRETE WALL PER STRUCTURAL 2 X 4 STUDS @ 16" O.C. SET OFF FROM CONCRETE R-21 BATT INSULATIONG.W.B. 5/8" GWB	
AGE	W2 TYPICAL EXTERIOR WALL WALL FINISH PER ELEVATIONS 2 LAYERS 60 MIN. BUILDING PAPER PLYWOOD SHEATHING PER STRUCTURAL 2 X 6 STUDS @ 16" O.C. R-21 KRAFT FACED BATT INSULATION 5/8" G.W.B.	[
	W3 TYPICAL INTERIOR WALL 5/8" GWB 2 X 4 STUDS @ 16" O.C. 5/8" GWB	

ABBREVIATIONS

AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
APPROX	APPROXIMATE
APB	ANTHONY POWER BEAM
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
@	AT
BLDG	BUILDING
BUC	BUILT UP COLUMN
CANT	CANTILEVER
CLR	CLEAR, CLEARANCE
CMU	CONCRETE MASONRY UNIT
CNCR	CONCRETE
COL	COLUMN
CL	
db	
DIA, Ø	DIAMETER
DIM	DIMENSION
DL	DEAD LOAD
EF	EACH FACE
ENGR	ENGINEER
EW	EACH WAY
EXP AB	EXPANSION ANCHOR BOLT
FB	FLITCH BEAM
FDN	FOUNDATION
FF	FINISHED FLOOR
FL	FLOOR
FLN	FLANGE
FT	FOOT OR FEET
GALV	GALVANIZED (HOP DIP)
HORIZ	HORIZONTAL
HT	HEIGHT
IBC	
IT	
71 71	
KSF	
KSI	
L	ANGLE OR L-SHAPE
LWR	LOWER
LB(S)	POUND(S), FORCE
LD	DEVELOPMENT LENGTH
LG	LONG
LL	LIVE LOAD
LONG	LONGITUDINAL
MATL	MATERIAL
MAX	MAXIMUM
MISC	MISCELLANEUS
NTS	NOT TO SCALE
0 TO 0	OUT TO OUT
OC	ON CENTER
OD	OUTSIDE DIAMETER
PLF	POUNDS FORCE PER LINEAR FOOT
PROJ	PROJECTION
PSF	POUNDS PER SOUARE FOOT
PSI	POUNDS PER SQUARE INCH
STD	STANDARD
SW	SHEAR WALL
TOC	TOP OF CONCRETE
т/	
UWA	UNDER WALL ABOVE
W/	WITH

DESIGN CRITERIA

2018 INTERNATIONAL BUILDING COD CATEGORY II
30 PSF
15 PSF
40 PSF
20 PSF
25 DSE
5 PSF
B
1.0
1.0
NO
110 MPH
C
1.0
B 0 19/ 0 19
TRANSVERSE: 11.5 KIPS
LONGITUDINAL: 9.7 KIPS
1
D
E
SS=1.709 S1=1.094
505-1.135 501-0.725 6 5
3.0
1.0
0.1
17.1 KIPS
2000 PSF
300 PCF
0.35
140 PCF + 100 PSF
TO INCLIES
8H

GENERAL NOTES - STRUCTURAL DESIGN

1. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR AND FABRICATOR SHALL VERIFY ALL QUANTITIES, DIMENSIONS AND CONDITIONS AND NOTIFY ARCHITECT / ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE DRAWINGS FOR DIMENSIONS.

2. VERIFY REQUIREMENTS OF OTHER TRADES, (CIVIL, MECHANICAL, ELECTRICAL, ETC.), PRIOR TO PROCEEDING WITH FABRICATION OR INSTALLATION OF MATERIALS.

3. THE CONTRACT STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE, AND EXCEPT WHERE SPECIFICALLY SHOWN, DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR AND THEIR SUB-CONTRACTORS SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, SEQUENCES AND SAFETY MEASURES INCLUDING, BUT NOT LIMITED TO, ADHERENCES TO ALL OSHA GUIDELINES. THE ENGINEER SHALL NOT HAVE CONTROL OF, AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR ANY OTHER PERSON PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THESE PERSONS TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

4. THE STRUCTURE HAS BEEN DESIGNED TO RESIST DESIGN LOADS ONLY AS A COMPLETED STRUCTURE. ANY PROPOSED APPLICATIONS OF CONSTRUCTION LOADS OR OF ANY LOADS TO THE PARTIALLY COMPLETED STRUCTURE WHICH EXCEED THE DESIGN LOADS WILL REQUIRE REANALYSIS AND POSSIBLE REDESIGN.

FOUNDATION

- 1. FOUNDATION DESIGN IS BASED UPON RECOMMENDATIONS AND ASSUMPTIONS FROM IBC CHAPTER 18. STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR SUBSURFACE CONDITIONS ENCOUNTERED IN THE FIELD THAT ARE DIFFERENT FROM THOSE ASSUMED FOR DESIGN.
- 2. ALL SUBGRADE UNDERCUT AND SOIL PREPARATION SHALL BE IN CONFORMANCE WITH IBC CHAPTER 18 RECOMMENDATIONS.
- 3. EXCAVATIONS SHALL BE KEPT FREE OF LOOSE MATERIAL AND STANDING WATER.
- 4. ANY FILL PLACED IN BUILDINGS PAD AREAS SHOULD CONSIST OF SELECT FILL. SELECT FILL SHOULD BE PLACED IN LOOSE LIFTS NOT EXCEEDING 8" IN COMPACTED TO DENSITIES OF 95 PERCENT OF STANDARD PROCTOR (ASTM D-698) AND AT A MOISTURE CONTENT BETWEEN OPTIMUM AND 4 PERCENT ABOVE OPTIMUM MOISTURE CONTENT. THE SUBGRADE TO RECEIVE SELECT FILL SHOULD BE SCARIFIED TO A DEPTH OF 6 INCHES AND COMPACTED TO AT LEAST 95 PERCENT OF STANDARD PROCTOR AND AT MOISTURE CONTENT BETWEEN OPTIMUM AND 4 PERCENT ABOVE OPTIMUM.
- 5. ALL EXTERIOR FOOTINGS SHALL BEAR AT OR BELOW FROST DEPTH OF 12 INCHES. ALL INTERIOR FOOTINGS SHALL BEAR A MINIMUM OF 12 INCHES BELOW TOP OF GRADE OR TOP OF SLAB.

REINFORCED CONCRETE

1. SUBMITTALS:

- PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL SUBMIT THE FOLLOWING FOR THE OWNER'S APPROVAL:
- A. SUBMIT A MIX DESIGN FOR EACH CLASS OF CONCERTE REQUIRED FOR THE PROJECT. CONCRETE PROPORTIONS SHALL BE ESTABLISHED ON THE BASIS OF PREVIOUS FIELD EXPERIENCE OR TRIAL MIXTURES.
- B.SUBMIT SHOP DRAWINGS FOR ALL REINFORCING. INDICATE STRENGTH, SIZE, AND DETAILS OF ALL BAR REINFORCING.
- C.SUBMIT PRODUCT LITERATURE FOR ADMISTUES AND CURING COMPOUDNS PROPOSED FOR USE. D.SUBMIT REPORTS OF ALL REQUIRED TESTING AND INSPECTIONS. E. SUBMIT CONCRETE POUR PLAN INDICATING CONTROL JOINT LOCATIONS AND DETAILS.

2. CONCRETE CONSTRUCTION STANDAREDS

A.IBC CHAPTER 19: CONCRETE B.ACI 318 - LATEST EDITION

C.ACI 117 - LATEST EDITION D.ACI 301 - LATEST EDITION

3. MAINTIAN THE FOLLOWING MIX REQUIREMENTS UNLESS NOTED OTHERWISE OR APPROVED BY THE ENGINEER:

STRUCTURAL CONCRETE

\triangle	DESCRIPTION	F'c	MAX W/C RATIO	A
	FOOTINGS AND STEM WALLS	3,500	0.50	
	INTERIOR SLABS ON GRADE	3,500	0.50	
	EXTERIOR SLABS ON GRADE	4,500	0.45	
	SITE RETAINING WALLS	5,000	0.45	

4. CEMENT SHALL BE PORTLAND CEMENT PER ASTM C150, TYPE I/II.

- 5. AGGREGATE SHALL BE PER ASTM C33. PROVIDE MAX AGGREGATE SIZE OF 1 INCH FOR ALL CLASSES UNLESS NOTED OTHERWISE.
- 6. MAXIMUM ALLOWABLE FLY ASH CONTENT SHALL BE 20%. FLY ASH SHALL BE PER ASTM C618, TYPE C OR F. 7. MAINTAIN SLUMP RANGE OF 5-7 WITHIN TOLERANCES PER ACI 301.
- 8. ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE FOLLOWING CODES AND STANDARDS: IBC CHAPTER 19, ACI 318-14, ACI 301-05, ACI 117-10.
- 9. REINFORCING STEEL SHALL BE ASTM A615, GRADE 60 UNO. LONGITUDINAL BARS IN SHEAR WALLS SHALL CONFORM TO ASTM A706, GRADE 60 OR SHALL CONFORM TO THE FOLLOWING REQUIREMENTS: A. WELDING OF THE REINFORCING BARS IS NOT PERMITTED. B.SUBMIT MILL CERTIFICATES INDICATING PHYSICAL AND CHEMICAL PROPERTIES.
- C.ACTUAL YIELD STRENGTH, BASED ON MILL TESTS, DOES NOT EXCEED THE SPECIFIED YIELD STRENGTH BY MORE THAN 18000 PSI. (RETESTS SHALL NOT EXCEED THIS VALUE BY MORE THAN AN ADDITIONAL 3000 PSI). D.THE RATIO OF THE ACTUAL TENSILE STRENGTH TO THE ACTUAL YIELD STRENGTH IS NOT LESS THAN
- 1.25.

10.REINFORCING PROTECTION FOR CAST-IN-PLACE CONCRETE AS PER ACI 318 UNLESS NOTED.

	A.CAS	T AGAINST AND PERMANENTLY EXPOSED		3" TO EAR
	B.FORI	MED SURFACES EXPOSED TO EARTH OR W	/EATHER.	
	NO.	6 THRU NO. 18 BARS		2"
	NO.	5 BAR, W32 OR D31 WIRE AND SMALLER	२	1 1/2"
	C.SUR	FACES NOT EXPOSED TO WEATHER OR IN	CONTACT WITH	I GROUND.
		1.BEAMS, COLUMNS, PRIMARY REINFOR	RCEMENT, TIES	
		STIRRUPS OR SPIRALS	1 1/2	п
		2. SLABS, WALLS & JOISTS		
		-NO. 14 AND NO. 18 BARS	1 1/2	п
		-NO. 11 BAR AND SMALLER	1 1/2	
1	.BAR SF	PLICES SHALL BE CLASS "B" UNLESS NOTED	OTHERWISE.	

12.HORIZONTAL REINFORCING BARS SHALL BE LAPPED AROUND CORNERS OF INTERSECTING WALLS AND BEAMS. STANDARD ACI HOOKS AND BENDS SHALL BE USED.

13. TOP BARS: HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE. MULTIPLE HORIZONTAL BARS IN A SINGLE VERTICAL PLANE SUCH AS COLUMN TIES OR HORIZONTAL BARS IN WALLS ARE NOT TOP BARS.

IR CONTENT

5-7% 5-7%

TH, ALL REINFORCING.

REINFORCED CONCRETE (CONT.)

14.UNLESS OTHERWISE DETAILED ON DRAWING SPLICES SHALL BE LOCATED SO THAT NO MORE THAN 50% OF BARS ARE SPLICED AT SAME LOCATION

15.FINISH CONCRETE SURFACES IN ACCORDANCE WITH THE FOLLOWING:

- A. INTERIOR SLABS ON GRADE: FINISH TO FLATNESS AND LEVELNESS OF F(f) = 30 AND F(1) = 20 IN ACCORDANCE WITH ACI 117.
- B.INTERIO FLOOR AREAS TO RECEIVE CARPET, RESILIENT FLOOR COVERING, OR REMAIN EXPOSED: SMOOTH TROWEL FINISH.
- C.INTERIOR FLOOR AREAS TO RECEIVE OUARRY TILE OR CERAMIC TILE: FLOAT FINISH. D.EXTERIOR SLABS: BROOM FINISH.

16.CONCRETE QUALITY CONTROL AND STRENGTH TESTING REQUIREMENTS: CONDUCT CONCRETE TESTING OF CYLINDERS IN ACCORDANCE WITH ACI. OBTAIN CONCRETE FOR REQUIRED TESTS AT POINT OF PLACEMENT. FOR EACH CLASS OF CONCRETE PERFORM ONE STRENGTH TEST FOR EACH 50 YARDS, OR FRACTION THEROF, FOR ONE DAY PLACEMENT. DETERMINE SLUMP FOR EACH TEST AND DETERMINE AIR CONTENT FOR EACH STRENGTH TEST OF EXTERIOR EXPOSED CONCRETE.

- A. TESTING: CURE (4) SIX INCH X 12 INCH CYLINDERS FOR TESTING IN ACCORDANCE WITH ACI 301 SECTION 1.6.4.2. TEST ONE CYLINDER AT 7 DAYS, TEST TWO CYLINDERS AT 28 DAYS AND HOLD ONE CYLINDER IN RESERVE FOR USE AS DIRECTED BY THE ENGINEER. AFTER 56 DAYS, UNLESS NOTIFIED BY THE ENGINEER OTHERWISE, THE RESERVE CYLINDER MAY BE DISCARDED WIHTOUT BEING TESTED FOR SPECIMENS MEETING THE 28-DAY STRENGTH REQUIREMENTS.
- B.ACCEPTANCE: STRENGTH IS ACCEPTABLE WHEN THE FOLLOWING ARE MET. A "TEST" IS DEFINED AS THE AVERAGE OF TWO 6X12 CYLINDERS OR THREE 4X8 CYLINDERS AT THE SPECIFIED TEST AGE. THE AVERAGES OF ALL SETS OF 3 CONSECUTIVE STRENGTH TESTS EQUAL OR EXCEED THE
- SPECIFIED COMPRESSIVE STRENGTH. NO STRENGTH TEST RESULT FALLS BELOW F'C BY MORE THAN 500 PSI.

TIMBER

I. SUBMITTALS:

- SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE ALL MATERIAL, LAYOUT AND ASSEMBLY INFORMATION INCLUDING MEMBER MATERIAL, GRADES, SIZES, SPACING, CONNECTIONS, AND ASSEMBLY DETAILS. PROVIDE SHOP DRAWINGS FOR ENGINEER REVIEW FOR THE FOLLOWING ITEMS:
- A. ALL ENGINEERED LUMBER MEMBERS: GLULAM MEMBERS, PSL MEMBERS, LVL MEMBERS, LSL MEMBERS, PREFABRICATED WOOD I-JOIST MEMBERS, WOOD TIE DOWN SYSTEMS.
- 2. TIMBER CONSTRUCTION STANDARDS A.IBC CHAPTER 23: WOOD
- B. NDS 2018 NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS)
- C. APA PDS-99 PLYWOOD DESIGN SPECIFICATION
- D. ANSI/TPI 1 NATIONAL DEISGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSSES E. TRI DSB RECOMMENDED DESIGN SPECIFICATION FOR TEMPORARY BRACING OF METAL PLATE
- CONNECTED TRUSSES F. BCSI GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, & BRACING OF METAL PLATE CONNECTED
- TRUSSES G. APA REPORT TT-045B MINIMUM NAIL PENETRATION FOR WOOD STRUCTURAL PANEL CONNECTIONS SUBJECT TO LATERAL LOADS

3. MATERIALS:

ALL SAWN LUMBER SHALL CONFORM TO GRADING RULES OF WWPA, NLGA OR WCLIB. GLULAMS SHALL CONFORM TO AITC 117-2004 AND ANSI/AITC A190.1. ALL GLULAM BEAMS, EXCEPT CONTINUOUS MULTISPAN BEAMS, SHALL BE CAMBERED TO 3000 FT RADIUS UNLESS NOTED OTHERWISE. ALL WOOD MATERIALS SHALL HAVE MINIMUM MOISTURE CONTENT OF 19% EXCEPT FOR PRESSURE TREATED SILL PLATES. ALL PRESSURE TREATED MEMBERS SHALL BE TREATED PER IBC SECTION 2304.12.

UMBER GRADE TABLE		
MEMBER	SIZE	SPECIES & GRADE
WALL STUDS	2x, 3x	Doug Fir Larch, No. 2
SILL PLATES	2x, 3x	PT Doug Fir Larch, No 2
POSTS	4x, 6x, 8x	Doug Fir Larch, No 2
FLOOR AND ROOF JOISTS	2x, 3x	Doug Fir Larch, No. 2
BEAMS	4x and up	Doug Fir Larch, No 1
GLULAMS -SINGLE SPAN	ALL	24F-V4
GLULAMEN-MULTI SPAN	ALL	24F-V8
GLULAM COLS	ALL	L2
TIMPERSTRAND LSL	ALL	1.5E, Fb=1700,Fv=400, Fc_parallel=140
MICROLAM LVL	ALL	1.9E, Fb=2600,Fv=285, Fc_paralell=251(

MICROLAM LVL 4. STUD FRAMED WALLS

- A. ALL EXTERIOR WALLS WITH 10 FT HEIGHT OR LESS SHALL BE 2X6 @ 16" O.C. UNLESS NOTED OTHERWISE ON THE PLANS. REFER TO PLANS FOR WALLS GREATER THAN 10 FT HEIGHT. B. ALL INTERIOR BEARING WALLS SHALL BE MINIMUM 2X6 @ 16" O.C. UNLESS NOTED OTHERWISE ON THE
- PLANS C. AT ALL EXTERIOR AND LOAD BEARING WALL OPENINGS PROVIDE BUNDLED STUDS OF TWO TRIMMER AND ONE KING STUD AT EACH SIDE OF OPENING UNLESS NOTED OTHERWISE ON DRAWINGS.

5. BEAMS AND HEADERS

- A. THE CENTERLINE OF EACH BEAM SHALL ALIGN WITH THE CENTERLINE OF WALL AND STUDS BELOW. B. BEAMS MADE UP OF MULTIPLES OF 2xLUMBER SHALL BE BUILT AS FOLLOWS:
- 2-2x 16d NAILS @ 12" O.C. TOP AND BOTTOM- STAGGER EACH FACE 3-2x 20d NAILS @ 12" O.C. TOP AND BOTTOM- STAGGER EACH FACE
- 4-2x (OR MORE) 3/4"Ø BOLTS @ 12" O.C. TOP & BOTTOM, STAGGER -USE STD. WASHERS (EA. FACE). a. PROVIDE STANDARD NUTS & WASHERS AT 3/4"Ø BOLTS (GALV. IF EXPOSED TO WEATHER) b. PROVIDE 2" EDGE DISTANCE FROM CENTERLINE OF BOLTS TO EDGE OF WOOD (TYPICAL)
- C. ALL BEAMS AND HEADERS SHALL BE SUPPORTED WITH EITHER BUNDLED STUDS PER SECTION 4 ABOVE OR WITH POST AND POST CAP CONNECTION PER THE PLANS. REFER TO SECTION 7 BELOW FOR MINIMUM POST CAP SIZES UNLESS NOTED OTHERWISE ON THE DRAWINGS.

6. JOISTS

- A.BRIDGING: PROVIDE BRIDGEING AT ALL FLOOR JOISTS NOT TO EXCEED 8'-0" MAXIMUM OR IN COMPLIANCE WITH JOINT MANUFACTURER RECOMMENDATIONS FOR ENGINEERD JOISTS. B. DO NOT NOTCH OR CUT HOLES IN JOISTS WITHOUT ENGINEER APPROVAL.
- C. BLOCKING: AT BEARING WALLS PROVIDE 2-2x SOLID BLOCKING UNDER BEARING WALLS PERPENDICULAR AND PARALLEL TO THE JOIST DIRECTION.
- D.BLOCKING (TO MATCH JOIST DEPTH) SHALL BE PROVIDED AT EA. END & AT EACH SUPPORT OF JOIST, EXCEPT WHERE THE ENDS OF JOISTS ARE FASTENED TO A HEADER, RIM JOIST, OR AN ADJOINING STUD. SOLID BLOCKING SHALL BE A MIN. OF 2-2x MEMBERS.
- 7. ATTACHMENTS A. THRU BOLTS SHALL BE ASTM A-307 OR ASTM A-325. PROVIDE STANDARD WASHERS AT EACH FACE.
- B. FASTENERS, INCLUDING BOLTS, NUT, WASHERS, AND OTHER CONNECTORS SHALL BE HOT-DIPPED GALVANIZED WHERE EXPOSED TO WEATHER.
- C. CONNECTORS TO BE PROVIDED BY "SIMPSON" STRONG-TIE COMPANY, INC., SAN LEANDRO, CALIFORNIA, OR EQUAL. APPLY NAIL AT EACH NAIL HOLE WITH SIZE AND TYPE PER CONNECTOR MANUFACTURER.
- D. AT COLUMNS 4" SQUARE AND LARGER, PROVIDE CAP & BASE CONNECTORS AS BELOW: E. COLUMN CAP CONNECTOR: PC SERIES (OR EPC AT BM ENDS). COLUMN BASE CONNECTOR: CB SERIES.
- F. USE RECOMMENDED COLUMN/BEAM MODEL NUMBERS.

GREATER THAN 20 FEET. 9. FLOOR AND ROOF DECK C. FLOOR AND ROOF DECK SHALL BE APA RATED PLYWOOD OR OSB WITH THICKNESS AND NAIL SIZE AND SPACING PER THE PLANS. D. PLACE PANELS IN A STAGGERED PATTERN. GLUE & NAIL TO FRAMING MEMBERS. GLUE SHALL CONFORM TO APA SPEC. AF6-01, AND APPLIED PER MANUF. SPECIFICATIONS. E. ORIENT SHEATHING PANELS WITH THE LONG DIMENSION PERPENDICULAR TO RAFTERS. F. PLYWOOD CLIPS SHALL BE INSTALLED @ ROOF DECKING TO RESULT IN A 1/8" GAP BETWEEN PANEL EDGES. PROVIDE 1 CLIP PER JOIST SPACING SPAN. USE "SIMPSON" PSCL. OR APPROVED EQUAL. MATCH CORRESPONDING PLYWOOD THICKNESS. 10. MISCELLANEOUS A. ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED LUMBER. 11. PREFABRICATED WOOD FRAMING MEMBERS A. PREFABRICATED WOOD FRAMING MEMBERS INCLUDE WOOD TRUSSES, TJI'S, ASI'S OR OTHER SIMILAR PREFABRICATED MEMBERS USED IN LIEU OF SAWN WOOD JOISTS, OR RAFTERS. B. PRODUCT DESIGN SHALL BE BASED UPON ACTUAL BUILDING DEAD LOADS, CODE SPECIFIED LIVE LOADS, AND STANDARDS OUTLINED IN THE BUILDING CODE FOR WINDSTORM RESISTANT CONSTRUCTION. TRUSSES SHALL BE DETAILED AND DESIGNED BY THE MANUFACTURER, UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED. UPON REQUEST, THE MANUFACTURER SHALL SUBMIT CALCULATIONS AND/OR SHOP DRAWINGS TO THE ARCHITECT/ENGINEER OF RECORD FOR REVIEW. C. CONTRACTOR SHALL PROVIDE TEMPORARY AND PERMANENT LATERAL BRACING OF ALL FABRICATED TRUSSED MEMBERS PER THE DETAILING AND DESIGN OF THE TRUSS MANUFACTURER. TRUSSES SHALL BE DETAILED AND DESIGNED BY THE MANUFACTURER. D. PROVIDE TEMPORARY SHORING WHERE SHEET ROCK AND OTHER CONSTRUCTION MATERIALS ARE BEING TEMPORARILY STORED. IF TJI'S ARE BEING UTILIZED, KEEP THE MEMBERS ABSOLUTELY DRY. 12. WOOD CONNECTORS, FASTENERS, NAILS, AND BOTS A. ALL WOOD CONNECTORS, HANGERS, CLIPS, HOLD-DOWN, POST CAPS AND OTHER WOOD CONNECTIONS SHALL BE SIMPSON STRONG TIE AS SPECIFIED IN THEIR LATEST WOOD CONENCTORS CATALOG. ALTERNATE CONNECTORS BY OTHER MANUFACTUERS MAY BE USED IF SUBMITTED FOR APPROVAL TO EOR. ALL CONNECTORS SHALL BE INSTALLED PER MANUFACTURERS INSTRUCTIONS WITH ALL INDICATED FASTENERS. WHERE MULTIPLE OPTIONS OR SIZES EXIST FOR FASTENERS USE THE LARGEST NUMBER OF FASTENERS AND THE LARGEST SIZE OF FASTENERS UNLESS NOTED OTHERWISE ON THE PLANS. ALL CONNECTORS EXPOSED TO WEATHER SHALL BE GALVANIZED OR FINISHED WITH SIMPSON ZMAX FINISH. B. NAILS, SCREWS, AND BOLTS SHALL CONFORM TO IBC SECTION 2304.10 CONNECTORS AND FASTERNERS. ALL FASTENERS ATTACHED TO PRESSURE TREATED LUMBER SHALL HAVE SIMILAR CORROSION

SINKERS C. ALL LAG BOLTS SHALL BE ASTM A307

1. SUBMITTALS:

8. HURRICANE CLIPS

- AND AISC 303 SECTION 4.
- OF THE GRADES SPECIFIED.
- 2. STEEL CONSTRUCTION STANDARDS: A.IBC CHAPTER 22 "STEEL"
- D. AISC 303-16 CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES E.AISC 348-14 SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS F.AWS D1.1-2020 STRUCTURAL WELDING CODE

3. MATERIALS: A.STRUCTURAL BARS AND PLATES "PL" B.STRUCTURAL PIPE PILES "P"

QUALITY CONTROL, RESPECTIVELY.

THE PLANS.

- 8. BRACING AND SAFETY: ALL FRAMING AND CONSTRUCTION SHALL BE TEMPORARILY BRACED AND SAFETY PROTECTION PROVIDED AS REQUIRED BY AISC SPECIFICATION SECTION M4.2 AND IN ACCORDANCE WITH THE CODE OF STANDARD PRACTICE.

TIMBER (CONT.)

A.PROVIDE MINIMUM H2.5A AT EACH END OF EACH ROOF JOIST OR RAFTER WITH SPAN LESS THAN 20

- B. PROVIDE MINIMUM H6 OR (2) H2.5A AT EACH END OF EACH ROOF JOIST OR RAFTER WITH SPAN

PROTECTION MATCHING THE WOOD TREATMENT. PROVIDE WASHERS AT ALL BOLT HEADS AND NUTS. ALL NAILS SHALL BE FULL LENGTH COMMON UNLESS NOTED OTHERWISE EXCEPT 16D SHALL BE

2

STRUCTURAL STEEL PILES

A.SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW IN ACCORDANCE WITH AISC 360 SECTION M.1

- B.SUBMIT WELDERS CERTIFICATES SHOWING QUALIFICATION WITHIN PAST 12 MONTHS. C. SUBMIT WELDING PROCEDURE SPECIFICATIONS.
- D.PROVIDE MILL TEST REPORTS (MTR) OR AFFIDAVIT INDICATING THE STEEL MEETS THE REQUIREMENTS E.SUBMIT ICC REPORTS FOR ALL POST INSTALLED STEEL ANCHORS.
- F.SUBMIT FABRICATION SHOP QA/QC PLAN FOR APPROVAL

- **B.AISC MANUAL OF STEEL CONSTRUCTION FIFTEENTH EDITION**
- C. AISC 360-16 SPECIFICATION FOR STRUCTURAL STEEL BRIDGES

ASTM A572, Fy=50ksi ASTM A53, Fy=35ksi

- 4. ALL CONSTRUCTION, FABRICATION, AND ERECTION SHALL CONFORM TO AISC SPECIFICATION SECTION M2, FABRICATION AND M4, ERECTION, AND AISC CODE SECTIONS 6 AND 8 FOR FABRICATION & DELIVERY AND
- 5. WEATHER PROOFING: ALL STEEL PILES SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123. WELD JOINTS SHALL BE COLD GALVANIZED IN ACCORDANCE WITH ASTM A780 MATERIALS AND PROCEDURES. 6. ALL BOLTS SHALL BE INSTALLED TO SNUG TIGHT CONDITION PER RCSC, UNLESS NOTED OTHERWISE ON
- 7. ALL WELDING SHALL CONFORM TO AWS D1.1 AND WELDERS SHALL BE CERTIFIED IN ACCORDANCE WITH AWS REQUIREMENTS. USE E70XX ELECTRODES UNLESS NOTED OTHERWISE.

ARCHITECT:

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FOUNDATION PLAN NOTES:

- VERIFY LOCATIONS OF NEW COLUMNS, WALLS, OPENINGS, ETC. WITH ARCHITECTURAL DRAWINGS BEFORE PLACING FOUNDATIONS. PROVIDE BLOCKOUTS FOR PLUMBING, HVAC, AND SPECIAL EQUIPMENT AS SHOWN ON ARCHITECTURAL AND MEP PLANS.
- TOP OF SLAB ELEVATION ASSUMED AT 112'-0" EXCEPT AS NOTED. REFERENCE CIVIL AND ARCHITECTURAL PLANS FOR ACTUAL TOP OF SLAB ELEVATION. REFERENCE ARCHITECTURAL DRAWINGS FOR DAMPPROOFING AND WATERPROOFING REQUIREMENTS FOR SLAB AND BASEMENT WALLS.
- 3. DESIGN SOIL BEARING PRESSURE OF 2000 PSF BASED ON IBC 2018 TABLE 1806.2.
- 4. ALL EXTERIOR FOOTINGS SHALL BEAR AT OR BELOW THE MINIMUM FROST DEPTH OF 12" BELOW FINISHED GRADE. ALL INTERIOR FOOTINGS SHALL BEAR A MINIMUM OF 12 INCHES BELOW TOP OF SLAB.
- ALL FOOTINGS AND SLABS SHALL BEAR ON COMPETANT NATIVE SOIL OR STRUCTURAL FILL. ALL FILL SHALL BE COMPACTED IN LIFTS OF 8 INCHES MAXIMUM AND COMPACTED TO MINIMUM 95% OF MODIFIED PROCTOR.
- 6. PROVIDE PRESSURE TREATED WOOD AT ALL LOCATIONS WHERE IN CONTACT WITH CONCRETE, WITHIN 8" OF EXPOSED GRADE, OR NOT OTHERWISE WEATHERPROOFED.
- 7. REFERENCE HOLD-DOWN SHEDULE AND SHEAR WALL SCHEDULE FOR HOLD-DOWN ANCHOR AND SILL PLATE ANCHORAGE REQUIREMENTS.
- 8. REFERENCE THE STRUCTURAL GENERAL NOTES FOR DESIGN CRITERIA, LEGEND, AND ABBREVIATIONS.

STUD AND SHEAR WALL PLAN NOTES:

- ALL EXTERIOR WALLS AND INTERIOR BEARING WALLS SHALL BE PER THE PLANS OR STUD WALL SCHEDULE, UNLESS NOTED OTHERWISE. STUDS SHALL ALIGN NOMINALLY FLOOR TO FLOOR WITH STUDS, JOISTS, AND TRUSSES. ATTACH SILL PLATES TO CONCRETE, RIM BOARD, OR TOP PLATE PER SCHEDULE, UNO IN SHEAR WALL SCHEDULE.
- 2. REFERENCE THE STRUCTURAL GENERAL NOTES FOR DESIGN CRITERIA, LUMBER GRADES, LEGEND, AND ABBREVIATIONS.
- 3. PROVIDE MINIMUM BLOCKING AT 5'-0" OC MAX FOR ALL BEARING AND EXTERIOR WALLS. REFER TO SHEAR WALL SCHEDULE FOR ADDITIONAL BLOCKING REQUIREMENTS.
- PROVIDE MINIMUM SILL ANCHORAGE OF 5/8" X 7" EMBED BOLTS AT 48" OC UNLESS NOTED OTHERWISE ON SHEARWALL SCHEDULE. BOLTS SHALL BE GALVANIZED AT PRESSURE TREATED SILL PLATES.
 FOR SHEAR WALL STRAPS AND ATTACHMENT REQUIREMENTS, REFERENCE THE SHEAR WALL SCHEDULE.
- 6. INDICATES HOLD-DOWN TYPE, REFERENCE HOLD-DOWN SCHEDULE.

STEEL PIPE PILE PLAN NOTES:

- 1. ALL PILES SHALL BE ASTM A53 SCHEDULE 40 3 INCH DIAMETER STANDARD PIPE PILES.
- PILES AND SPLICE JOINTS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 AND ASTM A780.
 PILES SHALL BE DRIVEN TO REFUSAL DEFINED AS LESS THAN ONE INCH OF PENETRATION FOLLOWING 30 SECONDS OF DRIVING USING A HYDRAULIC HAMMER WEIGHING 125 POUNDS. THE MAXIMUM HAMMER WEIGHT CLASS SHALL BE 350.
- 4. PILE LENGTHS ARE EXPECTED TO BE 30 TO 40 FT BASED ON SOIL CONDITIONS.
- 5. REFER TO GEOTECH REPORT BY TERRA ASSOCIATES, INC DATED NOV 21, 2022 FOR ADDITIONAL INFO.
- 6. PROVIDE WELD SPLICE BACKER PLATES OF SAME MATERIAL AS THE STEEL PILES.
- 7. ALL REBAR ANCHORS WELDED TO PILE CAP PLATES SHALL BE ASTM A706 WELDABLE REBAR.
- 8. PROVIDE DRIVING EQUIPMENT AND HAMMER SPECIFICATIONS TO ENGINEER A MINIMUM OF 15 DAYS PRIOR TO BEGINNING DRIVING FOR REVIEW AND APPROVAL.
- 9. GEOTECHNICAL ENGINEER SHALL BE ENGAGED TO PROVIDE ON SITE INSPECTION AND OBSERVATION DURING PILE INSTALLATION.

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HELICAL PILE PLAN NOTES:

- 1. HELICAL PILES SHALL BE EXCALIBUR 10/12/14 TYPE WITH 4.5" SHAFT WITH 0.290" WALL THICKNESS MIN YEILD OF 35KSI.
- PILE DESIGN CAPACITY: 9 KIPS COMPRESSION/TENSION WITH 2.0 GEOTECHNICAL FACTOR OF SAFETY (18K ULTIMATE). MANUFACTURER SHALL PROVIDE BOLTED OR WELDED SPLICE CONNECTION AS NECESSARY WITH 9K COMP/TEN ALLOWABLE CAPACITY.
- 3. MINIMUM INSTALLATION TORQUE = 30,000 FT-LB
- 4. MAXIMUM INSTALLATION TORQUE = 3,000 FT-LB
- 5. INSTALL PILES AT 3:1 NOMINAL BATTER WITH MINIMUM DEPTH OF 25 FEET BELOW GRADE TO TOP HELIX.
- 6. A MINIMUM OF TWO PILES SHALL BE TENSION TESTED AND PILE TENSION TESTING SHALL BE DIRECTED AND MONITORED BY THE GEOTECHNICAL ENGINEER.

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FLOOR FRAMING PLAN NOTES:

- VERIFY LOCATIONS OF NEW COLUMNS, WALLS, OPENINGS, ETC. WITH ARCHITECTURAL DRAWINGS. VERIFY ALL WALL, FLOOR, AND ROOF ELEVATIONS WITH ARCHITECTS DRAWINGS.
- 2. COORDINATE FRAMING WITH ALL MECHANICAL, HVAC, SPRINKLER, PLUMBING, AND ELECTRICAL DRAWINGS.
- 3. ALL WOOD EXPOSED TO WEATHER, OR IN CONTACT WITH CONCRETE, OR WITHIN 8" OF GRADE SHALL BE PRESSURE TREATED.
- PROVIDE SOLID BLOCKING BETWEEN FLOOR JOISTS/TRUSSES OVER ALL BEARING WALLS AND SHEAR WALLS.
 ALL HORIZONTRAL STRAP TIES INDICATED ON PLAN SHALL BE ALINGED WITH TOP PLATE OR BEAM AND BE
- CENTERED OVER THE JOINT BETWEEN ADJOINING ELEMENTS. REFERNCE THE STRAP MANUFACURER FOR FASTENER SIZE AND SPACING.
- 6. ALL JOIST HANGERS SHALL BE SIMPSON TOP FLANGE BEARING JB TYPE, UNO. GLULAM HANGERS SHALL BE HGLTV UNLESS NOTED OTHERWISE ON PLAN. ENGINEERED "I" JOIST HANGERS SHALL BE DESIGNED AND SUPPLIED BY THE JOIST SUPPLIER.
- 7. ALL HEADERS SHALL BE MINIMUM (2) 2X10 FOR SPANS UP TO 3 FEET AND MINIMUM 5 1/8 X 12 GLULAM FOR SPANS UP TO 6 FEET, UNLESS INDICATED OTHERWISE. ALL HEADERS AND BEAMS SHALL BE SUPPORTED BY A MINIMUM OF (2) TRIMMER AND (1) KING STUD. REFERENCE THE PLANS FOR LARGER POSTS OR ADDITIONAL TRIMMERS WHERE REQUIRED. TRIMMER STUDS OR POSTS SHALL BE CONTINUOUS TO THE FOUNDATION UNLESS SUPPORTED BY TRANSFER BEAM.
- 8. REFERENCE SHEAR WALL SCHEDULE FOR SHEAR WALL TYPES AND CONSTRUCTION REQUIREMENTS.
- REFERENCE THE STRUCTURAL GENERAL NOTES FOR DESIGN CRITERIA, LEGEND, AND ABBREVIATIONS.
 PROVIDE JOIST/TRUSS BRIDGING PER MANUFACTURERS REQUIREMENTS FOR ALL ENGINEERED JOISTS AND
- TRUSSES. 11. PROVIDE DOUBLE JOISTS OR DOUBLE BLOCKING AROUND ENTIRE PERIMETER OF OPENINGS GREATER THAN ONE JOIST BAY. PROVIDE DOUBLE JOIST HANGER AT ENDS OF BLOCKING.
- 12. FLOOR SHEATHING SHALL BE AS FOLLOWS:

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	FLOOR SHEATHING					
	SIZE	EDGE NAILING	FIELD NAILING	SPAN RATING		
23/32" 0.131 X 2.5" @ 6" OC 0.131 X 2.5" @ 12" OC 24 C				24 OC		
	NOTES: 1. ALL SHEATHING SHALL BE APA-RATED.					
	2. LAY SHEATHING WITH FACE GRAIN PERPENDICULAR TO SUPPORTS.					
	3. STAGGER ALL SHEATHING PANEL END JOINTS					
	3. PROVIDE 1/8" GAP BETWEEN PANELENDS AND EDGES					
	4. FLOOR SHEATHING SHALL BE STURD -I-FLOOR GRADE.					

13. STRUCTURAL WALL STUD SIZES ARE AS FOLLOWS. REFERENCE THE GENERAL NOTES FOR LUMBER SPECIES:

STRUCTURAL WALL STUD SIZES (minimum)					
Wall	Stud Size	Spacing	Grade		
Interior Bearing	2x4	16" OC	no 2		
Exterior	2x6.	16" OC	no 2		

FLOOR FRAMING PLAN NOTES:

- 1. VERIFY LOCATIONS OF NEW COLUMNS, WALLS, OPENINGS, ETC. WITH ARCHITECTURAL DRAWINGS. VERIFY ALL WALL, FLOOR, AND ROOF ELEVATIONS WITH ARCHITECTS DRAWINGS.
- 2. COORDINATE FRAMING WITH ALL MECHANICAL, HVAC, SPRINKLER, PLUMBING, AND ELECTRICAL DRAWINGS. 3. ALL WOOD EXPOSED TO WEATHER, OR IN CONTACT WITH CONCRETE, OR WITHIN 8" OF GRADE SHALL BE PRESSURE
- TREATED. 4. PROVIDE SOLID BLOCKING BETWEEN FLOOR JOISTS/TRUSSES OVER ALL BEARING WALLS AND SHEAR WALLS.
- 5. ALL HORIZONTRAL STRAP TIES INDICATED ON PLAN SHALL BE ALINGED WITH TOP PLATE OR BEAM AND BE CENTERED OVER THE JOINT BETWEEN ADJOINING ELEMENTS. REFERNCE THE STRAP MANUFACURER FOR FASTENER SIZE AND SPACING.
- 6. ALL JOIST HANGERS SHALL BE SIMPSON TOP FLANGE BEARING JB TYPE, UNO. GLULAM HANGERS SHALL BE HGLTV UNLESS NOTED OTHERWISE ON PLAN. ENGINEERED "I" JOIST HANGERS SHALL BE DESIGNED AND SUPPLIED BY THE JOIST SUPPLIER.
- 7. ALL HEADERS SHALL BE MINIMUM (2) 2X10 FOR SPANS UP TO 3 FEET AND MINIMUM 51/8 X 12 GLULAM FOR SPANS UP TO 6 FEET, UNLESS INDICATED OTHERWISE. ALL HEADERS AND BEAMS SHALL BE SUPPORTED BY A MINIMUM OF (2) TRIMMER AND (1) KING STUD. REFERENCE THE PLANS FOR LARGER POSTS OR ADDITIONAL TRIMMERS WHERE REQUIRED. TRIMMER STUDS OR POSTS SHALL BE CONTINUOUS TO THE FOUNDATION UNLESS SUPPORTED BY TRANSFER BEAM.
- 8. REFERENCE SHEAR WALL SCHEDULE FOR SHEAR WALL TYPES AND CONSTRUCTION REQUIREMENTS.
- 9. REFERENCE THE STRUCTURAL GENERAL NOTES FOR DESIGN CRITERIA, LEGEND, AND ABBREVIATIONS.
- 10. PROVIDE JOIST/TRUSS BRIDGING PER MANUFACTURERS REQUIREMENTS FOR ALL ENGINEERED JOISTS AND TRUSSES.
- 11. PROVIDE DOUBLE JOISTS OR DOUBLE BLOCKING AROUND ENTIRE PERIMETER OF OPENINGS GREATER THAN ONE JOIST BAY. PROVIDE DOUBLE JOIST HANGER AT ENDS OF BLOCKING.
- 12. FLOOR SHEATHING SHALL BE AS FOLLOWS:

	FLOOR SHEATHING						
SIZE	SIZE EDGE NAILING FIELD NAILING SPAN RAT						
23/32"	23/32" 0.131 X 2.5" @ 6" OC 0.131 X 2.5" @ 12" OC 24 OC						
NOTES:	1. ALL SHEATHING SHALL BE APA-RATED.						
	2. LAY SHEATHING WITH FACE GRAIN PERPENDICULAR TO SUPPORTS.						
	 STAGGER ALL SHEATHING PANEL END JOINTS PROVIDE 1/8" GAP BETWEEN PANEL ENDS AND EDGES 						
	4. FLOOR SHEATHING SHA	ALL BE STURD - I-FLOOR GRADE					

13. STRUCTURAL WALL STUD SIZES ARE AS FOLLOWS. REFERENCE THE GENERAL NOTES FOR LUMBER SPECIES:

STRUCTURAL WALL STUD SIZES (minimum)					
Wall Stud Size Spacing Gr			Grade		
Interior Bearing	2x4	16" OC	no 2		
Exterior	2x6.	16" OC	no 2		

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ROOF FRAMING PLAN NOTES:

- 1. VERIFY LOCATIONS OF NEW COLUMNS, WALLS, OPENINGS, ETC. WITH ARCHITECTURAL DRAWINGS. VERIFY ALL WALL, FLOOR, AND ROOF ELEVATIONS WITH ARCHITECTS DRAWINGS.
- 2. COORDINATE FRAMING WITH ALL MECHANICAL, HVAC, SPRINKLER, PLUMBING, AND ELECTRICAL DRAWINGS.
- 3. PROVIDE MINIMUM SIMPSON H2.5A HURRICANE TIES AT ALL ROOF JOISTS/TRUSSES UNLESS HEAVIER TIES ARE INDICATED ON PLAN.
- 4. PROVIDE SOLID BLOCKING BETWEEN ROOF JOISTS/TRUSSES OVER ALL BEARING WALLS AND SHEAR WALLS.
- 5. ALL HORIZONTRAL STRAP TIES INDICATED ON PLAN SHALL BE ALINGED WITH TOP PLATE OR BEAM AND BE CENTERED OVER THE JOINT BETWEEN ADJOINING ELEMENTS. REFERNCE THE STRAP MANUFACURER FOR FASTENER SIZE AND SPACING.
- 6. ALL JOIST HANGERS SHALL BE SIMPSON TOP FLANGE BEARING JB TYPE, UNO. GLULAM HANGERS SHALL BE HGLTV UNLESS NOTED OTHERWISE ON PLAN. ENGINEERED "I" JOIST HANGERS SHALL BE DESIGNED AND SUPPLIED BY THE JOIST SUPPLIER.
- 7. ALL HEADERS SHALL BE MINIMUM (2) 2X10 FOR SPANS UP TO 3 FEET AND MINIMUM 51/8 X 12 GLULAM FOR SPANS UP TO 6 FEET, UNLESS INDICATED OTHERWISE. ALL HEADERS AND BEAMS SHALL BE SUPPORTED BY A MINIMUM OF (2) TRIMMER AND (1) KING STUD REFERENCE THE PLANS FOR LARGER POSTS OR ADDITIONAL TRIMMERS WHERE REQUIRED. TRIMMER STUDS OR POSTS SHALL BE CONTINUOUS TO THE FOUNDATION UNLESS SUPPORTED BY TRANSFER BEAM.
- 8. REFERENCE SHEAR WALL SCHEDULE FOR SHEAR WALL TYPES AND CONSTRUCTION REQUIREMENTS.
- 9. REFERENCE THE STRUCTURAL GENERAL NOTES FOR DESIGN CRITERIA, LEGEND, AND ABBREVIATIONS. 10. PROVIDE JOIST/TRUSS BRIDGING PER MANUFACTURERS REQUIREMENTS FOR ALL ENGINEERED JOISTS
- AND TRUSSES.
- 11. ROOF SHEATHING SHALL BE AS FOLLOWS:

	ROOF SHEATHING					
SIZE EDGE NAILING FIELD NAILING SPAN RATIN						
19/32" 0.131 X 2.5" @ 6" OC 0.131 X 2.5" @ 12" OC 32/16						
NOTES:	NOTES: 1. ALL SHEATHING SHALL BE APA-RATED.					
	2. LAY SHEATHING WITH FACE GRAIN PERPENDICULAR TO SUPPORTS.					
	3. STAGGER ALL SHEATHING PANEL END JOINTS					
	PROVIDE 1/8" GAP BET	WEEN PANELENDS AND EDGE	S			
	4. ROOF SHEATHIGN SHA	LL BE C-D GRADE				

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Practical Structural Solutions									
	MER Nin	RELL DESIGN SERVICES PL e Mile Falls, Washington 990	LC 026						
		509-998-7410 TJ@MDSstructural.com							
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STUD AND SHEAR WALL PLAN NOTES:

- 1. ALL EXTERIOR WALLS AND INTERIOR BEARING WALLS SHALL BE PER THE PLANS OR STUD WALL SCHEDULE, UNLESS NOTED OTHERWISE. STUDS SHALL ALIGN NOMINALLY FLOOR TO FLOOR WITH STUDS, JOISTS, AND TRUSSES. ATTACH SILL PLATES TO CONCRETE, RIM BOARD, OR TOP PLATE PER SCHEDULE, UNO IN SHEAR WALL SCHEDULE.
- 2. REFERENCE THE STRUCTURAL GENERAL NOTES FOR DESIGN CRITERIA, LUMBER GRADES, LEGEND, AND ABBREVIATIONS.
- 3. PROVIDE MINIMUM BLOCKING AT 5'-0" OC MAX FOR ALL BEARING AND EXTERIOR WALLS. REFER TO SHEAR WALL SCHEDULE FOR ADDITIONAL BLOCKING REQUIREMENTS.
- 4. PROVIDE MINIMUM SILL ANCHORAGE OF 5/8" X 7" EMBED BOLTS AT 48" OC UNLESS NOTED OTHERWISE ON SHEARWALL SCHEDULE. BOLTS SHALL BE GALVANIZED AT PRESSURE TREATED SILL PLATES.
- 5. FOR SHEAR WALL STRAPS AND ATTACHMENT REQUIREMENTS, REFERENCE THE SHEAR WALL SCHEDULE.
- 6. INDICATES HOLD-DOWN TYPE, REFERENCE HOLD-DOWN SCHEDULE.
- 7. SEE DETAIL 8/S3.1 FOR STANDARD SHEAR WALL CONSTRUCTION AND HOLD-DOWN STRAP ATTACHMENT.

(B') (C)	<image/> <text><text><text><text></text></text></text></text>
14'-8" 10'-0"	JOBSITE ADDRESS: 7615 E. MERCER WAY MERCER ISLAND, WA 98040 ARCHITECT: Formworks Design Build 7434 SE 71st St Mercer Island, WA 98040
A HOUB BELOW 10 BW BELOW (12)WIST27 (2)WI	PROPIETARY DATA IS INCLUDED IN THE INFORMATION DISCLOSED HEREIN AND IS THE SOLE PROPERTY OF MERRELL DESIGN SERVICES PLLC. THIS INFORMATION IS SUBMITTED IN CONFIDENCE AND NEITHER THIS DOCUMENT NOR THE INFORMATION DISCLOSED HEREIN SHALL BE REPRODUCED OR TRANSFERRED TO OTHER DOCUMENTS OR USED OR DISCLOSED TO OTHERS FOR ANY PURPOSE EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY MERRELL DESIGN SERVICES PLLC. DRAWING ISSUE RECORD: NO. STATUS FOR PERMIT 08/12/21
(3) STUDS	REV. BY: DESCRIPTION DATE Image: Amage:
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HOLD-DOWN/STRAP SCHEDULE - DOUG-FIR STUDS

						A	NCHOR			
		TVDE	NUMBER OF	NAILS, SCREWS,		CONCRETE EMBEDMENT				
		ITE	STUDS/POST	OR BOLTS	DIAMETER	STEM	WALL	SPREAD FOOTING		
						CIP	ADHESIVE	CIP OR ADHESIVE		
	ш									
	CRET	HDU2	(2) 2X	(6) SDS 1/4x2 1/2	5/8"	10"	10"	7"		
	CON	HDU4	(2) 2X	(10) SDS 1/4x2 1/2	5/8"	10"	10"	7"		
	DD TC	HDU5	(2) 2X	(14) SDS 1/4x2 1/2	5/8"	12"	15"	9"		
	MO	HDU8	6X	(20) SDS 1/4x2 1/2	7/8"	18"	-	11"		
			5.5"	(30) SDS 1/4x2 1/2	1	18"	-	11"		
		HDOII	7.25"	(30) SDS 1/4x2 1/2	1	18"	-	11"		
	0	LSTA30	(2) 2X	(22) 10d	-	-	-	-		
	NOO	MSTA30	(2) 2X	(22) 10d	-	-	-	-		
	D TO	MST27	(2) 2X	(30) 16d	-	-	-	-		
	00M	MSTI48	(2) 2X	(48) 16d	-	-	-	-		
		MSTC66	(2) 2X	(76) 16d	-	-	-	-		
_		MSTC72	(2) 2X	(62) 16d	-	-	-	-		

6730 NOTES: 1. PROVIDE SHEAR WALL EDGE NAILING AT AT HOLD-DOWN STUDS/POST. 2. CAPACITY BASED ON 2,500 PSI CONCRETE STRENGTH. 3. STEM WALL SHALL BE MINIMUM 6 INCHES WIDE FOR 5/8" ANCHOR BOLTS AND 8" MINIMUM FOR 7/8" AND LARGER BOLTS. 4. ALL HOLD-DOWNS AND STRAPS ARE BY SIMPSON STRONG TIE. CONTACT ENGINEER FOR ALTERNATE SUPPLIERS. 5. CAST IN PLACE ANCHORS SHALL BE HEX HEAD OR A STANDARD "J" BOLT. ROOF JOIST PARALLEL TO EXTERIOR WALL

6. ADHESIVE ANCHORS SHALL BE SIMPSON SET OR HILTI HY-150 ADHESIVE.

7. PLACE 1/2 OF NAILS ABOVE FLOOR JOIST AND 1/2 BELOW FLOOR JOIST. NO NAILS IN CLEAR SPAN.

HOLD DOWN STRAP SCHEDULE

9 NOT TO SCALE

NOTES:

- 1. STUDS SHALL BE SPACED A MAXIMUM OF 16" ON CENTER EXCEPT GYP WALLS MAY BE SPACED AT 24" ON CENTER.
- 2. BLOCKING IS REQUIRED AT ALL PANEL EDGES.
- 3. ALL SHEAR PANELS SHALL BE CONTINUOUS BETWEEN HORIZONTAL DIAPHRAGMS SW'S (ROOF TO FLOOR,
- FLOOR TO FLOOR, FLOOR TO FOUNDATION).
- 4. REFERENCE GENERAL NOTES ON SHEET S1.0 FOR ADDITIONAL INFO.
- W3 5. SHEATHING EDGE NAILING IS REQUIRED AT ALL HOLD-DOWN POST LOCATIONS. PROVIDE MIN (2) STUDS AT ENDS OF ALL. SEE HOLD-DOWN SCHEDULE FOR LARGER END STUDS AT HOLD-DOWNS. W2
- 6. ALL NAILING WITH TWO ROWS SHALL HAVE 1 1/2" SPACING BETWEEN ROWS.
- 7. NO. 6 X 1 1/4" DRYWALL SCREWS MAY BE USED IN LIEU OF 5D COOLER NAILS FOR GYPSUM SHEAR WALLS.
- 8. 3X BLOCKING AT PANEL EDGES MAY BE SUBSTITUTED WITH (2) 2X BLOCKING NAILED TOGETHER WITH NAIL SIZE AND SPACING TO MATCH SILL NAILING
- 9. A35 AND LTP5 CLIPS ARE SIMPSON PRODUCTS, BUT MAY BE SUBSTITUTED WITH APPROVED EQUIVALENTS.

10.SOME SHEAR WALL TYPES MAY NOT BE USED ON THIS PROJECT.

		SHEAR WALL SCHED	ULE - DOUG-F	IR LARCH 8D COMMON	I (0.131 X 2 1/2") NAIL	S			
				FASTEN	IERS (WHERE APPLICAE	3LE)			
WALL SHEATHING (APA RATED)	EDGE NAILING	FIELD NAILING	BLOCKING AT PANEL EDGES	RIM JOIST TO PLATE BELOW	SILL PLATE TO RIM OR TOP PLATE SILL ANCHORS BELOW		SILL PLATE SIZE	CAPACITY, lbs/ft	
15/32"	8d AT 6" OC	8d AT 12" OC	2x	A35 OR LTP5 AT 16" OC	16d SINKER AT 8" OC	5/8" DIA AT 48" OC	2x	260	
15/32"	8d AT 6" OC	8d AT 12" OC	2x	A35 OR LTP5 AT 12" OC	16d SINKER AT 6" OC	5/8" DIA AT 48" OC	2x	380	
15/32"	8d AT 3" OC STAGGERED	8d AT 12" OC	3x OR (2) 2x	A35 OR LTP5 AT 10" OC	16d SINKER AT 4" OC	5/8" DIA AT 16" OC	2x	490	
15/32"	8d AT 2" OC STAGGERED	8d AT 12" OC	3x OR (2) 2x	A35 OR LTP5 AT 8" OC	(2) ROWS 16d SINKER AT 6" OC	5/8" DIA AT 32" OC	3x OR (2) 2x	640	
15/32" BOTH SIDES	8d AT 4" OC STAGGERED	8d AT 12" OC	3x OR (2) 2x	A35 OR LTP5 AT 12" OC EACH SIDE	(2) ROWS 16d SINKER AT 6" OC	5/8" DIA AT 24" OC	3x OR (2) 2x	760	
15/32" BOTH SIDES	8d AT 3" OC STAGGERED	8d AT 12" OC	3x OR (2) 2x	A35 OR LTP5 AT 10" OC EACH SIDE	(2) ROWS16d SINKER AT 4" OC	5/8" DIA AT 24" OC	3x OR (2) 2x	980	
15/32" BOTH SIDES	8d AT 2" OC STAGGERED	8d AT 12" OC	3x OR (2) 2x	A35 OR LTP5 AT 8" OC EACH SIDE	A35 OR LTP5 AT 8" OC EACH SIDE	5/8" DIA AT 16" OC	3x OR (2) 2x	1280	
1/2" GYP BOARD	5d COOLER @ 7" OC	5d COOLER @ 7" OC	2x	A35 OR LTP5 AT 24" OC	16d SINKER AT 8" OC	5/8" DIA AT 48" OC	2x	75	
1/2" GYP BOARD	5d COOLER @ 4" OC	5d COOLER @ 4" OC	2x	A35 OR LTP5 AT 24" OC	16d SINKER AT 8" OC	5/8" DIA AT 48" OC	2x	110	

NOT TO SCALE

FLOOR JOIST BEARING AT BEAM NOT TO SCALE

TYPE

W6

W4

2W4

2W3

2W2

G7

G4

HELICAL PILE ANCHORAGE DETAIL

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

(9)

NOTE: FLOOR/ROOF FRAMING NOT SHOWN FOR CLARITY.

 \triangle

LONG VIEW BELLA, LLC.

CHESHIRE SHORT PLAT 7615 E. MERCER WAY, MERCER ISLAND, WASHINGTON 98040

TEMPORARY AND PERMANENT RETAINING SHORING WALL PLANS

SHEET NUMBER

S = O = |SH2.0SH3.0-3.2 SH3.A SH40

SH5.0 - 5.4

SH6.0

COVER & SHORING NOTES SHORING PLAN SHORING ELEVATION PILE AND ANCHOR SCHEDULE CROSS-SECTIONS AND DESIGN DIAGRAMS DETAILS SPECIFICATIONS

SHEET TITLE

SHORING WALL NOTES:

GENERAL:

THE GENERAL CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING DIMENSIONS AND SITE CONDITIONS. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THE PLANS AND THOSE UTILITIES OR UNDERGROUND OBSTRUCTIONS NOT SHOWN ON THE PLANS. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL ABANDONED UTILITIES, OR OTHER UNDERGROUND OBSTRUCTIONS THAT INTERFERE WITH THE NEW CONSTRUCTION

THE GENERAL CONTRACTOR AND SUBCONTRACTORS ARE RESPONSIBLE FOR THE CONSTRUCTION PROCESS AND THE SAFETY OF THE WORKERS. THIS INCLUDES BUT IS NOT LIMITED TO, THE CONSTRUCTION SEQUENCE, TEMPORARY HANDRAILS, EXCAVATION ACCESS AND BARRIERS. IT ALSO INCLUDES LIFTING OF MATERIALS AND CONSTRUCTION EQUIPMENT INTO AND OUT OF THE EXCAVATION, TEMPORARY BRACING OF SINGLE-SIDED FORMWORK TEMPORARY SHORING OF EXCAVATIONS, AND STABILITY OF ALL TEMPORARY CUT SLOPES.

A PRE-CONSTRUCTION MEETING SHALL BE HELD PRIOR TO THE START OF THE WORK AND SHALL BE ATTENDED BY THE OWNER'S REPRESENTATIVES, THE ENGINEER, THE GENERAL CONTRACTOR, THE EXCAVATION SUBCONTRACTOR, THE SHORING SPECIALTY SUBCONTRACTOR, THE GEOTECHNICAL SPECIAL INSPECTOR, THE SDOT REPRESENTATIVE, AND THE SDCI SITE INSPECTOR. THE PRE-CONSTRUCTION MEETING SHALL BE CONDUCTED TO CLARIFY THE REQUIREMENTS FOR THE WORK, TO COORDINATE THE CONSTRUCTION ACTIVITIES, AND TO IDENTIFY CONTRACTUAL RELATIONSHIPS AND RESPONSIBILITIES.

PRE-CONSTRUCTION REVIEW:

SIX WEEKS PRIOR TO ORDERING SHORING SYSTEM MATERIALS, NOTIFY GROUND SUPPORT PLLC SO THAT THE EXCAVATION PLAN CAN BE CHECKED FOR CHANGES.

REFERENCE DATA:

ALL EXISTING SITE DATA, EXISTING AND PROPOSED TOPOGRAPHICAL DATA, AND EXISTING AND PROPOSED UTILITY DATA; AND PROPOSED SHORING WALL LOCATIONS ARE BASED ON:

- THE CIVIL PLAN SET TITLED "19205 Eng Set.PDF", DATED OCTOBER 31, 2023.
- 2023. PROVIDED TO GROUND SUPPORT PLLC BY CORE DESIGN. • THE ELECTRONIC SURVEY FILE "X19205 SURVEY.DWG" DATED NOVEMBER 15, 2023
- PREPARED BY TERRANE PROVIDED BY CORE DESIGN.

BUILDING CODES, DESIGN MANUALS, AND SPECIFICATIONS:

2018 INTERNATIONAL BUILDING CODE, AS AMENDED BY THE CITY OF MERCER ISLAND.

GEOTECHNICAL ENGINEERING CIRCULAR NO. 4, "GROUND ANCHORS AND ANCHORED SYSTEMS", FHWA, DATED JUNE 1999.

DESIGN LIVE LOADS:

TRAFFIC/CONSTRUCTION SURCHARGE = SEE SH4.0

PROVIDED TO GROUND SUPPORT PLLC, PREPARED BY CORE DESIGN. THE CIVIL DRAWING FILES NAMED "ACAD-x19205 U-Model.DWG" DATED NOVEMBER 17TH,

1998 FHWA SUMMARY REPORT OF RESEARCH ON PERMANENT GROUND ANCHOR WALLS.

DESIGN CALCULATIONS:

THE SOLDIER PILE SHORING WALL DESIGN CALCULATIONS ARE CONTAINED IN THE REPORT TITLED: "DESIGN MEMORANDUM, CHESHIRE RESIDENTIAL PROJECT (PROJECT NO. 23-30), 7615 E. MERCER WAY, MERCER ISLAND, WASHINGTON 98040", PREPARED BY GROUND SUPPORT PLLC FOR LONG VIEW BELLE, LLC., DATED NOVEMBER 20, 2023

SUBSURFACE DESIGN:

ALL SUBSURFACE DESIGN PARAMETERS USED IN THE SHORING DESIGN ARE BASED ON THE SUBSURFACE CHARACTERIZATION PRESENTED IN THE REPORT "GEOTECHNICAL REPORT. CHESHIRE SHORT PLAT, 7615 E. MERCER WAY, MERCER ISLAND, WASHINGTON", PREPARED BY TERRA ASSOCIATES, INC., DATED NOVEMBER 22, 2023.

SEISMIC DESIGN PARAMETERS:

SEISMIC EARTH PRESSURE = 10H PSF.

CONTROLLED-DENSITY-FILL (CDF):

ALL CONTROLLED-DENSITY-FILL (CDF) SHALL HAVE A MINIMUM OF 1.5 SACKS (141 LB) OF CEMENT PER CUBIC YARD OF CONCRETE.

TYPE I, II, OR III PORTLAND CEMENT CONFORMING TO ASTM CI50 / AASHTO M85 SHALL BE USED FOR CDF.

SLUMP FOR ALL CONCRETE SHALL NOT BE LESS THAN 5 INCHES AND NO GREATER THAN 9 INCHES.

ADMIXTURES SHALL CONFORM TO THE REQUIREMENTS OF ASTM C494 / AASHTO MI94, SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AND SHALL BE APPROVED BY THE ENGINEER.

AGGREGATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM C33 / AASHTO M6 FOR FINE AGGREGATES AND AASHTO M80, CLASS B FOR COARSE AGGREGATES.

TIMBER LAGGING:

ALL LAGGING BOARDS SHALL BE PRESSURE-TREATED, IN GOOD CONDITION, AND SHALL BE HEM-FIR NO. I OR BETTER HEM-FIR NO. 2 OR BETTER, WITH AN ALLOWABLE FLEXURAL STRESS FB=1020 PSI (4-INCH LAGGING) AND FB-1050 PSI (6-INCH LAGGING) (WHICH INCLUDES ALL APPLICABLE FLAT-USE AND SIZE FACTORS).

ALL LAGGING BOARDS SHALL BE PRESSURE-TREATED IN ACCORDANCE WITH AWPA STANDARD UI-05 (FOR END USE CLASSIFICATION UC4), TO A MINIMUM RETENTION OF 0.40 PCF, USING THE CCA PROCESS (COMMERCIAL PRODUCT NAME OSMOSE OR APPROVED EQUAL). ALTERNATIVE TREATMENT PROCESSES MAY BE SUBMITTED TO GROUND SUPPORT PLLC FOR APPROVAL.

STRUCTURAL STEEL:

ALL STRUCTURAL STEEL SHAPES SHALL CONFORM TO ASTM A992 (f_{Y} =50 KSI (MIN)), AND PLATES SHALL CONFORM TO ASTM A572 GRADE 50, UNLESS SHOWN OTHERWISE ON THE PLANS, OR APPROVED OTHERWISE BY THE ENGINEER.

STRUCTURAL WELDING:

SHORING ELEMENT LAYOUT:

THE SHORING SYSTEM IS TEMPORARY IN NATURE, IS CONSTRUCTED EXTERNAL TO THE BUILDING ENVELOPE OF THE PERMANENT STRUCTURE, AND SHALL NOT BE CONSTRUED AS CONTRIBUTING ANY LONG-TERM UTILITY TO THE PERMANENT STRUCTURE. THIS INCLUDES ISSUES RELATING TO DRAINAGE/WATER-PROOFING OF THE PERMANENT BASEMENT WALLS. IF THE STRUCTURAL ENGINEER INTENDS TO INCORPORATE ANY ELEMENTS OF THE SHORING SYSTEM INTO THE PERMANENT BUILDING DESIGN (INCLUDING DRAINAGE/WATER-PROOFING COMPONENTS), HE/SHE SHALL INDEPENDENTLY EVALUATE THEIR UTILITY FOR INCLUSION AS PART OF THE PERMANENT DESIGN.

LAYOUT OF SHORING ELEMENTS PERPENDICULAR TO THE BUILDING WALLS SHALL BE BASED ON THE ARCHITECTURAL PLANS TAKING INTO ACCOUNT PERTINENT BUILDING ELEMENTS (E.G., WATERPROOFING) NOT SHOWN ON THESE PLANS.

WATERPROOFING:

PROJ. NO. SHEET NUMBER

SH1

23-30

DRILLED SOLDIER PILES:

THE MINIMUM REQUIRED STRUCTURAL STEEL SHAPES FOR THE SOLDIER PILES ARE INDICATED IN THE SCHEDULES. ALTERNATIVE STEEL SECTIONS MAY BE USED PROVIDED THAT THE CROSS-SECTIONAL AREA AND SECTION MODULUS OF EACH ALTERNATIVE STEEL SECTION ARE EQUAL TO OR GREATER THAN THE CROSS-SECTIONAL AREA AND SECTION MODULUS OF THE CORRESPONDING STEEL SECTION SHOWN ON THE PLANS.

SHAFTS SHALL BE CONSTRUCTED SO THAT THE CENTER AT THE TOP OF THE SHAFT IS WITHIN +/- 3 INCHES OF THE PLAN LOCATION. SHAFT PLUMBNESS MAY VARY UP TO I PERCENT OF PILE LENGTH.

THE STEEL SOLDIER PILES SHALL BE PLACED SO THAT THE CENTER LINE OF THE PILE IS WITHIN +/- I INCH OF THE PLAN LOCATION. THE STEEL SOLDIER PILE SHALL BE PLUMB CONSISTENT WITH MAXIMUM DEVIATION INTO/OUT-OF THE EXCAVATION AS DEFINED BY THE STRUCTURAL ENGINEER AND GENERAL CONTRACTOR. THE TOP ELEVATION OF THE STEEL SOLDIER PILE SHALL BE WITHIN +/- 3 INCHES OF THE PLAN ELEVATION.

SHAFTS SHALL BE EXCAVATED TO THE REQUIRED DEPTH AS SHOWN ON THE PLANS. THE EXCAVATION SHALL BE COMPLETED IN A CONTINUOUS OPERATION USING EQUIPMENT CAPABLE OF EXCAVATING THROUGH THE TYPE OF MATERIAL EXPECTED TO BE ENCOUNTERED.

IF THE SHAFT EXCAVATION IS STOPPED WITH THE APPROVAL OF THE ENGINEER, THE SHAFT SHALL BE SECURED BY INSTALLATION OF A SAFETY COVER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THE SAFETY OF THE SHAFT AND SURROUNDING SOIL AND THE STABILITY OF THE SIDE WALLS. A TEMPORARY CASING SHALL BE USED IF NECESSARY TO ENSURE SUCH SAFETY AND STABILITY.

WHERE CAVING CONDITIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL SELECT A METHOD TO PREVENT GROUND MOVEMENT. THE CONTRACTOR MAY ELECT TO PLACE A TEMPORARY CASING.

THE CONTRACTOR SHALL USE APPROPRIATE MEANS (SUCH AS A CLEANOUT BUCKET), TO CLEAN THE BOTTOM OF THE EXCAVATION SUCH THAT NO MORE THAN 2 INCHES OF LOOSE OR DISTURBED MATERIAL IS PRESENT.

UNLESS SHOWN OTHERWISE ON THE PLANS, EXCAVATION OF SHAFTS SHALL NOT COMMENCE UNTIL A MINIMUM OF 12 HOURS AFTER THE CDF FOR THE ADJACENT SHAFTS HAS BEEN PLACED.

TEMPORARY CASINGS FOR THE SHAFTS SHALL BE REMOVED. A MINIMUM 5 FOOT HEAD OF CONCRETE MUST BE MAINTAINED TO BALANCE THE SOIL AND WATER PRESSURE AT THE BOTTOM OF THE CASING DURING REMOVAL. THE CASING SHALL BE SMOOTH.

SHAFT CDF SHALL BE PLACED AS SHOWN ON THE PLANS. SHAFT CDF SHALL BE PLACED IN ONE CONTINUOUS OPERATION TO THE TOP OF THE SHAFT.

F WATER IS NOT PRESENT, THE CDF SHALL BE DEPOSITED BY A METHOD WHICH PREVENTS AGGREGATE SEGREGATION.

IF WATER IS PRESENT, THE CDF SHALL BE DEPOSITED BY TREMIE PLACEMENT METHODS.

EXCAVATION, LAGGING, BACKFILL, AND ANCHOR STRESSING:

THE CONTRACTOR SHALL EXCAVATE THE WALL FACE AND INSTALL LAGGING IN SUCH A MANNER AS TO MAINTAIN A SAFE WORK PLACE AND AVOID EXCESSIVE SLOUGHING AND OVERBREAK. AS A MINIMUM, PRIOR TO PLACING THE SUBSEQUENT SET OF TIMBER LAGGING, DO NOT EXCAVATE MORE THAN 4 FEET BELOW THE CURRENT DEPTH OF LAGGED WALL FACE. IF FACE STABILITY CONDITIONS REQUIRE, THIS HEIGHT MUST BE REDUCED.

DO NOT EXCAVATE TO A DEPTH GREATER THAN 2 FEET BELOW A LEVEL OF ANCHORS PRIOR TO INSTALLATION, TESTING, AND LOCKOFF (AS APPLICABLE) OF THOSE ANCHORS.

LAGGING SHALL BE INSTALLED FROM THE TOP OF THE PILE PROCEEDING DOWNWARD. THE TIMBER LAGGING SHALL MAKE DIRECT CONTACT WITH THE SOIL. VOIDS BEHIND THE LAGGING SHALL BE FILLED WITH FREE-DRAINING BACKFILL. LEAVE GAPS (1/4-INCH TYP) BETWEEN LAGGING FOR DRAINAGE. CDF MAY BE USED AS BACKFILL IN LOCALIZED AREAS.

SHOTCRETE:

ALL SHOTCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI, AND A MINIMUM 3-DAY COMPRESSIVE STRENGTH OF 2000 PSI. SEE THE SPECIFICATIONS PLAN SHEETS FOR SPECIFIC REQUIREMENTS.

TYPE I/II PORTLAND CEMENT CONFORMING TO ASTM CI50 / AASHTO M85 SHALL BE USED FOR SHOTCRETE. SUBMIT MIX DESIGNS IN ACCORDANCE WITH THE SPECIFICATIONS.

TEMPORARY SHOTCRETE MAY BE LEFT WITH AN AS-SHOT GUN FINISH. PERMANENT SHOTCRETE SHALL BE LEFT WITH A WOOD OR RUBBER FLOAT FINISH.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60 FOR DEFORMED BARS, AND ASTM A185 FOR WELDED WIRE FABRIC. ALL REINFORCING STEEL DETAILS IN ACCORDANCE WITH ACI 315 MANUAL OF STANDARD PRACTICE.

SUBMIT REINFORCING STEEL SHOP DRAWINGS TO ENGINEER IN ACCORDANCE WITH THE SPECIFICATIONS.

ALL DEFORMED REINFORCING BAR LAPS SHALL BE CLASS B, IN ACCORDANCE WITH THE 1996 FHWA MANUAL FOR DESIGN AND CONSTRUCTION OF SOIL NAIL WALLS, OR AS SUMMARIZED IN THE FOLLOWING TABLE:

BAR	LAP SPLICE LENGTH
SIZE	(IN)
#4	25
#5	31
#6	28

HEADED STUDS:

ALL HEADED STUDS SHALL CONFORM TO ASTM A29 WITH A MINIMUM ULTIMATE TENSILE STRENGTH OF 61 KSI. HEADED STUDS SHALL BE "NELSON STUDS" BY NELSON DIVISION OF TRW, INC. OR AN APPROVED EQUAL, AUTOMATICALLY END WELDED. HEADED STUD PROPORTIONS SHALL COMPLY WITH ASTM A 1044.

TEMPORARY GROUND ANCHORS:

GENERAL:

IA. THE CONTRACTOR SHALL SELECT THE INSTALLATION METHOD, THE ANCHOR DIAMETER, AND THE METHOD OF GROUTING, IN ORDER TO DEVELOP THE DESIGN LOADS INDICATED ON THE PLANS, AS VERIFIED IN ACCORDANCE WITH THE ANCHOR TESTING PROGRAM.

IB. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ENGINEER FOR REVIEW AND APPROVAL WORKING DRAWINGS AND A DESIGN SUBMISSION DESCRIBING THE GROUND ANCHOR SYSTEM OR SYSTEMS INTENDED FOR USE. THE WORKING DRAWINGS AND DESIGN SUBMISSION SHALL BE SUBMITTED 5 DAYS PRIOR TO THE COMMENCEMENT OF THE GROUND ANCHOR WORK. THE WORKING DRAWING AND DESIGN SUBMISSION SHALL INCLUDE THE FOLLOWING:

- CERTIFIED MILL TEST RESULTS AND TYPICAL STRESS-STRAIN CURVES FOR THE PRESTRESSING STEEL. THE TYPICAL STRESS-STRAIN CURVE SHALL BE OBTAINED BY APPROVED STANDARD PRACTICES. THE GUARANTEED ULTIMATE STRENGTH, YIELD STRENGTH, ELONGATION, AND COMPOSITION SHALL BE SPECIFIED.
- 2. GROUT MIX DESIGN AND THE PROCEDURES FOR GROUT PLACEMENT. 60 DAYS OF THE DATE SUBMITTED.
- 2. GROUND ANCHOR INSTALLATION:

2A. AT THE GROUND SURFACE, THE DRILLHOLE SHALL BE LOCATED WITHIN 4 INCHES OF THE LOCATION SHOWN ON THE PLANS. THE DRILLHOLE SHALL BE LOCATED SO THE LONGITUDINAL AXIS OF THE DRILLHOLE AND THE LONGITUDINAL AXIS OF THE TENDON ARE PARALLEL.

2B. AT THE POINT OF ENTRY, THE GROUND ANCHOR SHALL BE INSTALLED WITHIN +/- 3 DEGREES OF THE INCLINATION FROM HORIZONTAL SHOWN IN THE PLANS. AT THE POINT OF ENTRY, THE HORIZONTAL ANGLE MADE BY THE GROUND ANCHOR AND THE STRUCTURE SHALL BE WITHIN +/- 3 DEGREES OF A LINE DRAWN PERPENDICULAR TO THE PLANE OF THE STRUCTURE, UNLESS SHOWN OTHERWISE ON THE PLANS. AT ALL ANCHOR LOCATIONS WHERE TIEBACKS CROSS, THE INCLINATION AND ORIENTATION OF THE ANCHORS SHALL BE +/- I DEGREE.

2C. WHEN CAVING CONDITIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL SELECT A METHOD TO PREVENT GROUND MOVEMENT. THE CONTRACTOR MAY USE TEMPORARY CASING.

2D. THE TENDON SHALL BE INSERTED INTO THE DRILLHOLE TO THE DESIRED DEPTH WITHOUT DIFFICULTY. WHEN THE TENDON CANNOT BE COMPLETELY INSERTED, THE CONTRACTOR SHALL REMOVE THE TENDON FROM THE DRILLHOLE AND CLEAN OR REDRILL THE HOLE TO PERMIT INSERTION. PARTIALLY INSERTED TENDONS SHALL NOT BE DRIVEN OR FORCED INTO THE HOLE.

2E. THE CONTRACTOR SHALL USE A NEAT-CEMENT OR A SAND-CEMENT GROUT. THE CEMENT SHALL NOT CONTAIN LUMPS OR OTHER INDICATIONS OF HYDRATION. ADMIXTURES, IF USED, SHALL BE MIXED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

2F. THE GROUT EQUIPMENT SHALL PRODUCE A GROUT FREE OF LUMPS AND UNDISPERSED CEMENT. A POSITIVE DISPLACEMENT GROUT PUMP SHALL BE USED. THE PUMP SHALL BE EQUIPPED WITH A PRESSURE GAUGE TO MONITOR GROUT PRESSURES AND A STROKE COUNTER. THE PRESSURE GAUGE SHALL BE CAPABLE OF MEASURING PRESSURES OF AT LEAST 150 PSI OR TWICE THE ACTUAL GROUT PRESSURES USED BY THE CONTRACTOR, WHICHEVER IS GREATER. THE GROUTING EQUIPMENT SHALL BE SIZED TO ENABLE THE GROUT TO BE PUMPED IN ONE CONTINUOUS OPERATION. THE MIXER SHALL BE CAPABLE OF CONTINUOUSLY AGITATING THE GROUT.

2G. THE GROUT SHALL BE INJECTED FROM THE LOWEST POINT OF THE DRILLHOLE. THE GROUT MAY BE PUMPED THROUGH GROUT TUBES, CASING, OR DRILL RODS. THE GROUT CAN BE PLACED BEFORE OR AFTER INSERTION OF THE TENDON. THE QUANTITY OF THE GROUT AND THE GROUT PRESSURES SHALL BE RECORDED. THE GROUT PRESSURES AND GROUT TAKES SHALL BE CONTROLLED TO PREVENT EXCESSIVE HEAVE IN SOILS OR FRACTURING OF ROCK FORMATIONS.

2H. NO GROUT SHALL BE PLACED UNDER PRESSURE ABOVE THE BOND LENGTH DURING INITIAL GROUTING OF THE ANCHOR BOND LENGTH. THE GROUT AT THE TOP OF THE DRILLHOLE SHALL NOT CONTACT THE BACK OF THE STRUCTURE.

21. AFTER GROUTING, THE TENDON SHALL NOT BE LOADED UNTIL THE GROUT HAS ATTAINED SUFFICIENT STRENGTH TO CARRY THE TEST LOAD.

2J. ALL TEMPORARY GROUND ANCHORS SHALL BE DE-STRESSED AFTER SHORING IS NO LONGER NEEDED

3. ANCHOR GROUT:

3A. THE GROUT SHALL BE A NEAT OR SAND/CEMENT MIXTURE WITH A MINIMUM 3-DAY COMPRESSIVE STRENGTH OF 1500 PSI AND A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI PER ASTM CIO9 / AASHTO TIO6.

3B. TYPE II CEMENT CONFORMING TO THE REQUIREMENTS OF ASTM CI50 / AASHTO M85 SHALL BE USED.

3C. FINE AGGREGATES SHALL CONSIST OF CLEAN, NATURAL SAND, CONFORMING TO THE REQUIREMENTS OF ASTM C33 / AASHTO M6. MANUFACTURED SAND IS ACCEPTABLE PROVIDED IT IS SUITABLE FOR PUMPING IN ACCORDANCE WITH ACI 304, SECTION 4.2.2.

3D. ADMIXTURES SHALL BE IN ACCORDANCE WITH ASTM C494 / AASHTO MI94. ADMIXTURES WHICH CONTROL BLEED, IMPROVE FLOW, REDUCE WATER CONTENT, AND RETARD SET MAY BE USED IN THE GROUT SUBJECT TO THE APPROVAL OF THE ENGINEER. EXPANSIVE ADMIXTURES SHALL ONLY BE ADDED TO THE GROUT USED FOR FILLING SEALED ENCAPSULATIONS, TRUMPETS AND ANCHORAGE COVERS. ACCELERATORS WILL NOT BE PERMITTED. ADMIXTURES SHALL BE COMPATIBLE WITH PRESTRESSING STEELS AND MIXED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.

4. ANCHOR TENDONS:

4A. THE STRAND GROUND ANCHORS TENDONS SHALL CONSIST OF THE FOLLOWING: SEVEN-WIRE, LOW-RELAXATION STRANDS WITH AN ULTIMATE TENSILE STRENGTH OF 270

4B. STRAND COUPLERS SHALL NOT BE ALLOWED.

5. BONDBREAKER:

5A. A BONDBREAKER MUST BE PROVIDED TO PREVENT THE TENDON FROM BONDING TO THE ANCHOR GROUT SURROUNDING THE UNBONDED LENGTH.

5B. THE BONDBREAKER SHALL BE FABRICATED FROM A SMOOTH PLASTIC TUBE OR PIPE HAVING THE FOLLOWING PROPERTIES:

RESISTANCE TO CHEMICAL ATTACK FROM AGGRESSIVE ENVIRONMENTS, GROUT OR GREASE.

RESISTANCE TO AGING BY ULTRAVIOLET LIGHT. FABRICATED FROM MATERIAL NON-DETRIMENTAL TO THE TENDON. 4. CAPABLE OF WITHSTANDING ABRASION, IMPACT, AND BENDING DURING HANDLING AND INSTALLATION.

5. ENABLE THE TENDON TO ELONGATE DURING TESTING AND STRESSING. 6. ALLOW THE TENDON TO REMAIN UNBONDED AFTER LOCKOFF.

3. CALIBRATION DATA FOR EACH TEST JACK, PRESSURE GAUGE AND REFERENCE PRESSURE GAUGE TO BE USED. THE CALIBRATION TESTS SHALL HAVE BEEN PERFORMED BY AN INDEPENDENT TESTING LABORATORY AND TESTS SHALL HAVE BEEN PERFORMED WITHIN

KSI CONFORMING TO ASTM A416 / AASHTO M203.

6. SPACERS AND CENTRALIZERS:

6A. SPACERS SHALL BE USED ALONG THE TENDON BOND LENGTH OF MULTI-ELEMENT TENDONS TO SEPARATE EACH OF THE INDIVIDUAL ELEMENTS OF THE TENDON SO THE PRESTRESSING STEEL WILL BOND TO THE GROUT. SPACERS SHALL BE POSITIONED SO THEIR CENTER-TO-CENTER SPACING DOES NOT EXCEED 10 FEET. IN ADDITION, THE UPPER SPACER SHALL BE LOCATED A MAXIMUM OF 5 FEET FROM THE TOP OF THE TENDON BOND LENGTH AND THE LOWER SPACER SHALL BE LOCATED A MAXIMUM OF 5 FEET FROM THE BOTTOM OF THE TENDON BOND LENGTH. SPACERS SHALL PERMIT GROUT TO FREELY FLOW UP THE DRILLHOLE. SPACERS SHALL BE FABRICATED FROM PLASTIC.

6B. CENTRALIZERS SHALL PERMIT FREE GROUT FLOW AND SHALL PROVIDE A MINIMUM OF I INCH OF COVER OVER THE TENDON BOND LENGTH. CENTRALIZERS SHALL BE SECURELY ATTACHED TO THE TENDON AND THE CENTER TO CENTER SPACING SHALL NOT EXCEED 10 FEET. THE UPPER CENTRALIZER SHALL BE LOCATED A MAXIMUM OF 5 FEET FROM THE TOP OF THE TENDON BOND LENGTH AND THE LOWER CENTRALIZER SHALL BE LOCATED A MAXIMUM OF 3 FEET FROM THE BOTTOM OF THE TENDON BOND LENGTH. CENTRALIZERS SHALL BE FABRICATED FROM PLASTIC.

7. ANCHORAGE DEVICES:

7A. ANCHORAGE DEVICES SHALL BE CAPABLE OF DEVELOPING 95% OF THE MINIMUM SPECIFIED ULTIMATE TENSILE STRENGTH OF THE PRESTRESSING STEEL TENDON. THE ANCHORAGE DEVICES SHALL CONFORM TO THE STATIC STRENGTH REQUIREMENTS OF SECTION 3.1.6(1) AND SECTION 3.1.8(1) OF THE PTI "GUIDE SPECIFICATION FOR POST TENSIONING MATERIALS".

7B. THE BEARING PLATES SHALL BE STRUCTURAL STEEL CONFORMING TO ASTM A36/AASHTO MI83. THE BEARING PLATES SHALL BE SIZED SO THE ALLOWABLE BENDING STRESSES IN THE PLATE PER AISC-ASD ARE NOT EXCEEDED WHEN THE DESIGN LOAD OF THE GROUND ANCHOR IS APPLIED.

8. ANCHOR TESTING:

8A. EACH GROUND ANCHOR SHALL BE TESTED. THE MAXIMUM TEST LOAD SHALL NOT EXCEED 80% OF THE MINIMUM GUARANTEED ULTIMATE TENSILE STRENGTH (GUTS) OF THE TENDON. THE TEST LOAD SHALL BE SIMULTANEOUSLY APPLIED TO THE ENTIRE TENDON. STRESSING OF SINGLE ELEMENTS OF MULTI-ELEMENT TENDONS WILL NOT BE PERMITTED.

8B. THE TESTING EQUIPMENT SHALL CONSIST OF:

- A DIAL GAUGE OR VERNIER SCALE CAPABLE OF MEASURING TO 0.001 INCHES SHALL BE USED TO MEASURE THE GROUND ANCHOR MOVEMENT. THE MOVEMENT-MEASURING DEVICE SHALL HAVE A MINIMUM TRAVEL EQUAL TO THE THEORETICAL ELASTIC ELONGATION OF THE TOTAL ANCHOR LENGTH AT THE MAXIMUM TEST LOAD PLUS I INCH. THE DIAL GAUGE OR VERNIER SCALE SHALL BE SUPPORTED INDEPENDENT OF THE JACKING SYSTEM AND RETAINED STRUCTURE AND SHALL BE ALIGNED SO THAT ITS AXIS IS WITHIN 5 DEGREES FROM THE AXIS OF THE GROUND ANCHOR.
- 2. A HYDRAULIC JACK AND PUMP SHALL BE USED TO APPLY THE TEST LOAD. THE JACK AND PRESSURE GAUGE SHALL BE CALIBRATED BY AN INDEPENDENT TESTING LABORATORY AS A UNIT. THE PRESSURE GAUGE SHALL BE GRADUATED IN 100 PSI INCREMENTS OR LESS. THE PRESSURE GAUGE WILL BE USED TO MEASURE THE APPLIED LOAD. THE RAM TRAVEL OF THE JACK SHALL NOT BE LESS THAN THE THEORETICAL ELASTIC ELONGATION OF THE TOTAL ANCHOR LENGTH AT THE MAXIMUM TEST LOAD PLUS ONE INCH. THE JACK SHALL BE INDEPENDENTLY SUPPORTED AND CENTERED OVER THE TENDON SO THAT THE TENDON DOES NOT CARRY THE WEIGHT OF THE JACK.

8C. VERIFICATION TESTS SHALL BE PERFORMED ON 2 ANCHORS PER ANCHORAGE SOIL TYPE ENCOUNTERED: WALL TYPE AND PER ANCHOR INSTALLATION METHOD USED. THE VERIFICATION TEST SHALL BE MADE BY INCREMENTALLY LOADING THE GROUND ANCHOR IN ACCORDANCE WITH THE FOLLOWING SCHEDULE.

LOAD	HOLD TIME	LOAD	HOLD TIME	
AL 0.25DL 0.50DL 0.75DL 1.00DL 1.25DL 1.50DL 1.75DL 2.00DL	I MINUTE IO MINUTES IO MINUTES IO MINUTES IO MINUTES IO MINUTES IO MINUTES IO MINUTES	I.75DL I.5ODL I.25DL I.OODL O.75DL O.5ODL O.25DL AL	UNTIL STABLE UNTIL STABLE UNTIL STABLE UNTIL STABLE UNTIL STABLE UNTIL STABLE UNTIL STABLE UNTIL STABLE	AL = ALIGNMENT LOAD DL = DESIGN LOAD

THE ALIGNMENT LOAD (AL) SHALL BE THE MINIMUM LOAD REQUIRED TO ALIGN THE TESTING APPARATUS AND SHALL NOT EXCEED 0.05DL. DIAL GAUGES SHALL BE SET AT "ZERO" AFTER THE ALIGNMENT LOAD HAS BEEN APPLIED.

A CREEP TEST SHALL BE PERFORMED AT THE 1.50 DL INCREMENT. ANCHOR MOVEMENT DURING THE CREEP TEST SHALL BE MEASURED AND RECORDED AT 1, 2, 3, 5, 7, 10, 20, 30, 50 AND 60 MINUTES OF ELAPSED TIME FROM

WHEN THE LOAD INCREMENT IS APPLIED. IF AN ANCHOR FAILS IN CREEP, RETESTING WILL NOT BE ALLOWED. THE ACCEPTANCE CRITERIA FOR VERIFICATION TEST ARE AS FOLLOWS:

- EXHIBITS A LINEAR OR NEAR-LINEAR RELATIONSHIP BETWEEN UNIT STRESS AND MOVEMENT OVER THE PERCENT STRESS RANGE DURING LOADING FROM AL TO 2.0DL
- HOLD THE MAXIMUM TEST UNIT STRESS AT 1.5DL WITHOUT NOTICEABLE CREEP. NOTICEABLE CREEP IS DEFINED AS A RATE OF MOVEMENT MORE THAN 0.04-INCH BETWEEN I- AND IO-MINUTE READINFS, OR MORE THAN O.08-INCHES BETWEEN THE 6- AND 60-MINUTE READINGS. IF THE READING DOES NOT STABILIZE TO 0.08-INCH OR LESS PER LOG CYCLE OF TIME, THE TEST SHALL BE CONSIDERED AS FAILING THE CREEP CRITERIA.
- 3. SATISFIES THE APPARENT FREE TENDON LENGTH CRITERIA:
 - A) MINIMUM APPARENT FREE LENGTH, BASED ON MEASURED ELASTIC AND RESIDUAL MOVEMENT, SHOULD BE GREATER THAN 80% OF THE DESIGNED FREE LENGTH PLUS THE JACK LENGTH; AND
 - B) MAXIMUM APPARENT FREE LENGTH, BASED ON MEASURED ELASTIC AND RESIDUAL MOVEMENT, SHOULD BE LESS THAN 100% OF THE DESIGNED FREE LENGTH PLUS 50% OF THE BOND LENGTH PLUS THE JACK LENGTH.
- 4. THE ANCHOR DOES NOT PULL OUT UNDER REPEATED LOADING OR AT 2.0DL

8D. PROOF TESTS SHALL BE PERFORMED ON ALL PRODUCTION ANCHORS BY INCREMENTALLY LOADING THE GROUND ANCHOR IN ACCORDANCE WITH THE FOLLOWING SCHEDULE. AT LOAD INCREMENTS OTHER THAN MAXIMUM TEST LOAD, THE LOAD SHALL BE HELD LONG ENOUGH TO OBTAIN A STABLE READING.

AL	I MINUTE
.25DL	I MINUTE
.5DL	I MINUTE
.75DL	I MINUTE
1.00DL	I MINUTE
1.33DL	UNTIL STABLI

THE ALIGNMENT LOAD (AL) SHALL BE THE MINIMUM LOAD REQUIRED TO ALIGN THE TESTING APPARATUS AND SHALL NOT EXCEED 0.05DL. DIAL GAUGES SHALL BE SET AT "ZERO" AFTER THE ALIGNMENT LOAD HAS BEEN APPLIED.

THE MAXIMUM TEST LOAD SHALL BE HELD FOR IO MINUTES. THE LOAD SHOULD BE HELD CONSTANT TO WITHIN 50psi AND THE ANCHOR MOVEMENT SHALL BE MEASURED AND RECORDED AT 1, 2, 3, 5, 6, AND 10 MINUTES. IF THE ANCHOR MOVEMENT BETWEEN I AND IO MINUTES EXCEEDS 0.04 INCHES, THE MAXIMUM TEST LOAD SHALL BE HELD FOR AN ADDITIONAL 50 MINUTES. IF THE LOAD HOLD IS EXTENDED, THE ANCHOR MOVEMENTS SHALL BE RECORDED AT 20, 30, 50, AND 60 MINUTES. IF AN ANCHOR FAILS IN CREEP, RETESTING WILL NOT BE ALLOWED.

8E. A PROOF TES WHEN:

3. SATISFIES THE APPARENT FREE TENDON LENGTH CRITERIA: A) MINIMUM APPARENT FREE LENGTH, BASED ON MEASURED ELASTIC AND RESIDUAL MOVEMENT, SHOULD BE GREATER THAN 80% OF THE DESIGNED FREE LENGTH PLUS THE JACK LENGTH; AND B) MAXIMUM APPARENT FREE LENGTH, BASED ON MEASURED ELASTIC AND RESIDUAL MOVEMENT, SHOULD BE LESS THAN 100% OF THE DESIGNED FREE LENGTH PLUS 50% OF THE BOND LENGTH PLUS THE JACK LENGTH.

8F. A PROOF TESTED GROUND ANCHOR WITH A 60 MINUTE LOAD HOLD CREEP TEST IS CONSIDERED ACCEPTABLE WHEN:

. THE GROUND ANCHOR CARRIES THE MAXIMUM TEST LOAD WITH LESS THAN 0.08 INCHES OF MOVEMENT BETWEEN 6 AND 60 MINUTES AND THE CREEP RATE IS LINEAR OR DECREASING. 3. SATISFIES THE APPARENT FREE TENDON LENGTH CRITERIA:

A) MINIMUM APPARENT FREE LENGTH, BASED ON MEASURED ELASTIC AND RESIDUAL MOVEMENT, SHOULD BE GREATER THAN 80% OF THE DESIGNED FREE LENGTH PLUS THE JACK LENGTH; AND B) MAXIMUM APPARENT FREE LENGTH, BASED ON MEASURED ELASTIC AND RESIDUAL MOVEMENT, SHOULD BE LESS THAN 100% OF THE DESIGNED FREE LENGTH PLUS 50% OF THE BOND LENGTH PLUS THE JACK LENGTH.

IN ADDITION TO THE ABOVE, A VERIFICATION TESTED GROUND ANCHOR MUST NOT EXPERIENCE A PULLOUT FAILURE OR TENDENCY TO FAILURE DURING LOADING. A PULLOUT FAILURE IS DEFINED AS THE LOAD AT WHICH ATTEMPTS TO INCREASE THE TEST LOAD RESULT IN CONTINUED PULLOUT MOVEMENT OF THE TEST ANCHOR.

8G. GROUND ANCHORS THAT HAVE A CREEP RATE GREATER THAN SPECIFIED CAN BE INCORPORATED IN THE FINISHED WORK AT A LOAD EQUAL TO ONE-HALF OF THE FAILURE LOAD. THE FAILURE LOAD IS THE MAXIMUM LOAD CARRIED BY THE ANCHOR AFTER THE LOAD HAS BEEN ALLOWED TO STABILIZE FOR TEN MINUTES.

8H. WHEN A GROUND ANCHOR FAILS, THE CONTRACTOR SHALL MODIFY THE ANCHOR DESIGN, THE CONSTRUCTION PROCEDURES, OR BOTH. THESE MODIFICATIONS MAY INCLUDE, BUT ARE NOT LIMITED TO: INSTALLING REPLACEMENT GROUND ANCHORS, MODIFYING THE INSTALLATION METHODS, INCREASING THE BOND LENGTH, OR CHANGING THE GROUND ANCHOR TYPE. ANY MODIFICATION WHICH REQUIRES CHANGES TO THE STRUCTURE SHALL HAVE PRIOR APPROVAL OF THE ENGINEER.

PERMANENT WALL DRAINAGE:

A.	SHOW AMER
B.	GEOC COVE PROT EXTEN
C.	THE G

GEOCOMPOSITE DRAIN STRIPS SHALL BE AT LEAST 16 INCHES WIDE AND SHALL BE SECURED TO THE LAGGED FACE WITH THE GEOTEXTILE SIDE AGAINST THE LAGGING. DRAIN STRIPS SHALL BE MADE CONTINUOUS BY USING THE "SHINGLE" METHOD OF SPLICING WITH A 16 INCH MINMUM OVERLAP SUCH THAT THE FLOW OF WATER IS NOT IMPEDED.

D. THE JOINT BETWEEN THE WEEP HOLE AND THE GEOCOMPOSITE DRAIN STRIP, AND THE DISCHARGE END OF THE WEEP PIPE SHALL BOTH BE SEALED TO PREVENT INTRUSION OF THE CONCRETE/SHOTCRETE PERMANENT FACING. DAMAGE OF THE GEOCOMPOSITE DRAIN STRIP WHICH, IN THE OPINION OF THE OWNER'S REPRESENTATIVE, MAY CAUSE INTERRUPTION IN FLOW SHALL REQUIRE INSTALLATION OF ADDITIONAL WEEP PIPES ABOVE THE DAMAGED SECTION.

MONITORING:

PER THE REQUIREMENTS OF THE GEOTECHNICAL SPECIAL INSPECTOR, THE SHORING MONITORING PROGRAM SHALL CONSIST OF THE FOLLOWING:

• PRE-CONSTRUCTION SURVEY (VIDEO OR PHOTOGRAPHIC SURVEY) OF ADJACENT STREETS, UTILITIES AND BUILDINGS, TO BE SUBMITTED IMMEDIATELY TO CITY OF MERCER ISLAND. OPTICAL SURVEY POINTS SHALL BE INSTALLED ON ALL ADJACENT ROADWAY CENTERLINES WITH SPACING NO GREATER THAN 50 FEET OR AS RECOMMENDED BY THE ENGINEER.

 OPTICAL SURVEY OF MONITORING POINTS TO BE COMPLETED TWICE WEEKLY DURING CONSTRUCTION, AND TWICE PER MONTH (OR AS DETERMINED BY THE GEOTECHNICAL SPECIAL INSPECTOR WITH THE CONCURRENCE OF CITY OF MERCER ISLAND) FOLLOWING COMPLETION OF THE EXCAVATION AND BEFORE THE INTERIOR BUILDING FLOORS REACH THE GROUND SURFACE. MONITORING SHALL INCLUDE VERTICAL AND HORIZONTAL SURVEY MEASUREMENTS TO AN ACCURACY OF O.OI FEET. BASELINE READINGS OF ALL MONITORING POINTS ARE TO BE TAKEN PRIOR TO START OF CONSTRUCTION. ALL RESULTS ARE TO BE SENT TO THE GEOTECHNICAL SPECIAL INSPECTOR WITHIN 24 HOUR AND TO CITY OF MERCER ISLAND WEEKLY. A LICENSED SURVEYOR (NOT THE CONTRACTOR) SHOULD PERFORM THE MONITORING AT LEAST ONCE PER

WEEK. • OPTICAL SURVEY POINTS SHOULD BE ESTABLISHED AT THE TOP OF THE SHORING WALL AROUND THE PERIMETER OF THE EXCAVATION. ESTABLISH MONITORING POINTS ON THE TOP OF EVERY OTHER PILE. MONITORING POINTS SHOULD BE ESTABLISHED ON EXISTING SETTLEMENT-SENSITIVE STRUCTURES LOCATED CLOSER TO THE EXCAVATION THAN A HORIZONTAL DISTANCE EQUAL TO THE EXCAVATION DEPTH, PRIOR TO DEWATERING, EXCAVATION, AND INSTALLATION OF SHORING SYSTEMS.

SPECIAL INSPECTION OF THE SHORING WALLS:

ESTED GROUND	ANCHOR WITH A I	O MINUTE LOAD HO!	LD CREEP TEST IS	CONSIDERED ACCEPTABLE

. THE GROUND ANCHOR CARRIES THE MAXIMUM TEST LOAD WITH LESS THAN 0.04 INCHES OF MOVEMENT BETWEEN THE I AND IO MINUTE READINGS.

> WALL DRAINAGE NETWORK SHALL CONSIST OF GEOCOMPOSITE DRAIN STRIPS AND WEEP PIPES AS WN ON THE PLANS. THE GEOCOMPOSITE DRAIN STRIPS SHALL BE MIRADRAIN 6000 OR RDRAIN 500. WEEP PIPES SHALL BE MINIMUM 2-INCH DIAMETER SCHEDULE 40 PVC.

COMPOSITE DRAIN STRIPS SHALL BE PROVIDED IN ROLLS WRAPPED WITH A PROTECTIVE ERING AND STORED IN A MANNER THAT PROTECTS THE FABRIC FROM MUD, DIRT, AND DEBRIS. TECTIVE WRAPPING SHALL NOT BE REMOVED UNTIL IMMEDIATELY BEFORE INSTALLATION. ENDED EXPOSURE TO ULTRAVIOLET LIGHT SHALL BE AVOIDED.

 SURVEY FREQUENCY CAN BE DECREASED AFTER THE SHORING SYSTEM HAS BEEN INSTALLED AND EXCAVATION IS COMPLETE IF THE DATA INDICATES LITTLE OR NO ADDITIONAL MOVEMENT. SURVEYING MUST CONTINUE UNTIL THE PERMANENT STRUCTURE (INCLUDING FLOOR SLABS AS BRACES) IS COMPLETE UP TO FINAL AND STREET GRADES. THE SURVEY FREQUENCY WILL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AFTER REVIEW AND APPROVAL BY CITY OF MERCER ISLAND.

 ADDITIONAL SURVEY POINTS SHOULD BE ESTABLISHED ALONG THE CURBLINE OF ADJACENT ROADWAYS, AND SPACED AT 20 FEET HORIZONTALLY. THESE POINTS NEED TO BE MONITORED IF SHORING WALL MOVEMENTS REACH 0.5-INCHES, OR AT CITY OF MERCER ISLAND REQUEST.

• THE GEOTECHNICAL ENGINEER SHALL REVIEW SURVEY DATA AND PROVIDE AN EVALUATION OF WALL PERFORMANCE ALONG WITH SURVEY DATA TO CITY OF MERCER ISLAND ON AT LEAST A WEEKLY BASIS. IMMEDIATELY AND DIRECTLY NOTIFY CITY OF MERCER ISLAND IF ANY UNUSUAL OR SIGNIFICANTLY INCREASED MOVEMENT OCCURS.

• IMMEDIATELY AND DIRECTLY NOTIFY THE GEOTECHNICAL AND STRUCTURAL ENGINEERS, WALL DESIGNER, AND CITY OF MERCER ISLAND IF 0.5-INCHES OF MOVEMENT OCCURS BETWEEN TWO CONSECUTIVE READINGS OR WHEN TOTAL MOVEMENTS REACH 0.5-INCHES. 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 I INCH. 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 CITY OF MERCER ISLAND (AS INDICATED ABOVE).

IN ACCORDANCE WITH SECTION 1704 OF IBC (2018), SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING SHORING ITEMS OR PROCESSES: SOLDIER PILE INSTALLATION, AND GROUND ANCHOR INSTALLATION AND TESTING. ALSO SEE SPECIAL INSPECTION REQUIREMENTS FOR SHOTCRETE (SH6.0).

DSN DRW CHK DATE REV DESCRIPTION RJB BFM RJB 11/28/2023 O PERMIT 155UE	
T I I I I I I I I I I I I I I I I I I I	Ground Support PLLC 16932 Woodinville Redmond Rd NE, #210 Woodinville, WA 98072 Ph: (425) 488-1143 Fax: (425) 605-4057
CHESHIRE SHORT PLAT	TEMPORARY SHORING WALL
7615 E. MERCER WAY, MERCER ISLAND, WASHINGTON 98040	COVER & SHORING NOTES
PROJ. NO	. 23-30
SHEE	Et NUMBER

<u>NOTE</u>: INFORMATION SUPPLIED TO GROUND SUPPORT PLLC AT TIME OF SHORING DESIGN INSUFFICIENT TO CHECK FOR ALL POTENTIAL CONFLICTS BETWEEN SHORING ELEMENTS AND UTILITIES. CONTRACTOR IS RESPONSIBLE FOR LOCATION OF ALL UTILITIES WITHIN ZONE OF SHORING ELEMENTS AND FOR CHECKING THAT NO SUCH CONFLICTS EXIST.

<u>NOTE</u>: INFORMATION SUPPLIED TO GROUND SUPPORT PLLC AT TIME OF SHORING DESIGN INSUFFICIENT TO CHECK FOR ALL POTENTIAL CONFLICTS BETWEEN SHORING ELEMENTS AND UTILITIES. CONTRACTOR IS RESPONSIBLE FOR LOCATION OF ALL UTILITIES WITHIN ZONE OF SHORING ELEMENTS AND FOR CHECKING THAT NO SUCH CONFLICTS EXIST.

0 10 20 FEET <u>NOTE</u>: INFORMATION SUPPLIED TO GROUND SUPPORT PLLC AT TIME OF SHORING DESIGN INSUFFICIENT TO CHECK FOR ALL POTENTIAL CONFLICTS BETWEEN SHORING ELEMENTS AND UTILITIES. CONTRACTOR IS RESPONSIBLE FOR LOCATION OF ALL UTILITIES WITHIN ZONE OF SHORING ELEMENTS AND FOR CHECKING THAT NO SUCH CONFLICTS EXIST.

PILE AND ANCHOR SCHEDULE - SOUTH WALL															
							ANCHOR I								
PILE NUMBER	WALL STA	STEEL SECTION	PILE TOP ELEV (FT)	PILE BOT ELEV (FT)	PILE LENGTH (FT)	MIN. DRILL- HOLE DIA (FT)	ANCHOR ELEV (FT)	DECLI- NATION (DEG)	TOTAL LENGTH (FT)	UNBOND LENGTH (FT)	BOND LENGTH (FT)	NO. STRANDS OR BAR SIZE	DESIGN LOAD (K)	LOCKOFF LOAD (K)	PILE EXTENSION TOP ELEV. (FT)
51 52 53 54 55 56	0+02.3 0+10.8 0+19.3 0+27.8 0+35.8 0+43.8	WI4X34 WI4X34 WI4X43 WI4X34 WI4X34 WI4X34	109.5 111.8 114.5 117.5 119.8 122.0	99.0 96.0 92.0 98.3 99.0 99.0	10.5 15.8 22.5 19.2 20.8 23.0	2.0 2.0 2.0 2.0 2.0 2.0 2.0	- - - - - - - - - - - - - - - - - - -	- - 25.0 25.0 25.0	- - - 30.0 30.0 30.0	- - - 15.0 15.0 15.0	- - - 15.0 15.0	- - 2 2 2	- - - 30.0 30.0	- - - 30.0 30.0 30.0	3.8 6.5 9.5 21.8 24.0 25.3

NOTE: EXTENSION IS A WT7x17 SECURED TO PILE TOP AS INDICATED ON PLANS.

	PILE AND ANCHOR SCHEDULE - WEST WALL														
										ANC	HOR				
PILE NUMBER	WALL STA	STEEL SECTION	PILE TOP ELEV (FT)	PILE BOT ELEV (FT)	PILE LENGTH (FT)	MIN. DRILL- HOLE DIA (FT)	ANCHOR ELEV (FT)	DECLI- NATION (DEG)	TOTAL LENGTH (FT)	UNBOND LENGTH (FT)	BOND LENGTH (FT)	NO. STRANDS OR BAR SIZE	DESIGN LOAD (K)	LOCKOFF LOAD (K)	PILE EXTENSION TOP ELEV. (FT)
WI W2 W3	0+02.3 0+09.3 0+16.3	WI4X34 WI4X34 WI4X34	23.3 23.5 23.5	99.0 99.0 99.0	24.3 24.5 24.5	2.0 2.0 2.0	9.0 9.0 9.0	25.0 25.0 25.0	30.0 35.0 35.0	15.0 15.0 15.0	15.0 20.0 20.0	2 2 2	30.0 40.0 40.0	30.0 40.0 40.0	125.5 125.5 125.8
W4 W5 W6	0+23.3 0+30.3 0+38.3	WI4X34 WI4X34 WI4X34	123.8 123.5 123.3	99.0 99.0 99.0	24.8 24.5 24.3	2.0 2.0 2.0	9.0 9.0 9.0	25.0 25.0 25.0	35.0 35.0 35.0	15.0 15.0 15.0	20.0 20.0 20.0	2 2 2 2	40.0 40.0 40.0	40.0 40.0 40.0	125.8 125.8 125.5
W7 W8	0+46.3 0+54.3	WI4X34 WI4X34	123.0 122.3	99.0 99.0	24.0 23.3	2.0 2.0	8.5 8.0	25.0 25.0	35.0 35.0	15.0 15.0	20.0 20.0	2 2	40.0 40.0	40.0 40.0	125.3 125.0

NOTE: EXTENSION IS A WT7x17 SECURED TO PILE TOP AS INDICATED ON PLANS.

PILE AND ANCHOR SCHEDULE - NORTH WALL														
							ANCHOR I							
PILE NUMBER	WALL STA	STEEL SECTION	PILE TOP ELEV (FT)	PILE BOT ELEV (FT)	PILE LENGTH (FT)	MIN. DRILL- HOLE DIA (FT)	ANCHOR ELEV (FT)	DECLI- NATION (DEG)	TOTAL LENGTH (FT)	UNBOND LENGTH (FT)	BOND LENGTH (FT)	NO. STRANDS OR BAR SIZE	DESIGN LOAD (K)	LOCKOFF LOAD (K)
NI N2 N3 N4	0+03.0 0+10.0 0+17.0 0+24.0	WI4X34 WI4X48 WI4X34 WI4X34	123.8 121.3 117.5 116.3	99.0 91.3 92.8 99.0	24.8 30.0 24.7 17.3	2.0 2.0 2.0 2.0	6.5 - - -	25.0 - - -	30.0 - - -	15.0 - - -	5.0 - - -	2 - -	30.0 - - -	30.0 - - -

NOTE: EIGHT WEEKS PRIOR TO ORDERING SHORING PILE BEAMS FROM THE SCHEDULE(S), CONSULT WITH GROUND SUPPORT AND CONFIRM THAT THE CURRENT BUILDING/EXCAVATION CONFIGURATION HAS NOT CHANGED, AND THAT THE SHORING DESIGN STILL APPLIES.

NOTE: THIS METHOD ONLY APPLIES TO INTERIOR CORNERS WITH INCLUDED ANGLE OF 90°±10°.

LAGGING BEARS AGAINST PERPENDICULAR -LAGGING ON ADJACENT SHORING WALL. ALTERNATE BEARING DIRECTION WITH EACH SUCCESSIVE LAYER OF LAGGING

		ANCHOR TO	P
			С
ANCHOR LOAD (KIPS)	PILE SECTION	COVER PLATE DIMENSIONS (IN)	
40.0	WI4x34	1/2 x 3 x 27	

<u>NOTE</u>:

I. WEB STIFFENER PLATES ARE FULL DEPTH, ARE FLUSH AT BEARING ENDS, AND WELDED FULL LENGTH AND ALONG BEARING ENDS ON ONE SIDE ONLY. 2. NO COVER PLATES ON PILES N9 TO N46.

TABLE SH5.0-2 ANCHOR STUBOUT WELD SCHEDULE						
	ANCHOR LOAD (KIPS)					
ANCHOR DECLINATION (DEG)	30	40	50			
25	4/16	4/16	4/16			

NOTES:

I. WELD SIZES IN INCHES. 2. WELD SIZES ASSUME MINIMUM WELD LENGTHS OF 12 INCHES.

HIRE SHORT PLAT MERCER ISLAND, WASHINGTON 98 RY SHORING WALL DETAILS DETAILS
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. TEMPORARY SHOTCRETE 2. PERMANENT SHOTCRETE

I. TEMPORARY SHOTCRETE

I.I GENERAL

A. ALL SHOTCRETE SHALL COMPLY WITH THE REQUIREMENTS OF ACI 506.2-95 EXCEPT AS SPECIFIED OTHERWISE HEREIN. THE OWNER SHALL CONTRACT AN INDEPENDENT TESTING LABORATORY TO CORE AND TEST SHOTCRETE PANELS AND INSPECT ALL SHOTCRETE AND STEEL REINFORCEMENT PLACEMENT IN ACCORDANCE WITH ACI 506.4R-94.

B. ALL WORKERS, INCLUDING FOREMAN, NOZZLEMEN, FINISHERS AND DELIVERY EQUIPMENT OPERATORS, SHALL BE FULLY QUALIFIED TO PERFORM THE WORK. QUALIFICATION OF THE NOZZLEMEN SHALL BE BASED ON THE RESULTS OF TEST PANELS AS REQUIRED HEREIN, UNLESS APPROVED OTHERWISE BY THE ENGINEER.

C. AT LEAST 15 DAYS PRIOR TO INITIATING THE WORK, THE CONTRACTOR SHALL SUBMIT THE FOLLOWING TO THE ENGINEER FOR REVIEM:

I. WRITTEN DOCUMENTATION OF THE NOZZLEMENS QUALIFICATIONS AND PROPOSED METHOD OF SHOTCRETE PLACEMENT. 2. SHOTCRETE MIX DESIGN INCLUDING: BRAND AND TYPE OF PORTLAND CEMENT; SOURCE, GRADATION, AND QUALITY OF AGGREGATES; MIX PROPORTIONS BY WEIGHT; PROPOSED ADMIXTURES AND THEIR MANUFACTURER, DOSAGE, AND TECHNICAL LITERATURE; AND COMPRESSIVE STRENGTH TEST RESULTS FROM THE SUPPLIER NO OLDER THAN 6 MONTHS VERIFYING THE 28-DAY COMPRESSIVE STRENGTH. 3. ONCE AVAILABLE, CERTIFIED MILL TESTS FOR ALL REINFORCING STEEL FROM EACH HEAT SPECIFYING THE MINIMUM ULTIMATE STRENGTH, YIELD STRENGTH, ELONGATION, AND COMPOSITION. 4. SPECIFICATION AND DATA FOR REVIEW ON EQUIPMENT PROPOSED

FOR THE PROJECT INCLUDING SHOTCRETING AND COMPRESSED AIR EQUIPMENT, PROPOSED ACCESS ARRANGEMENTS, AND CAPACITIES. 5. METHODS OF CONTROLLING THE LOCATION OF THE FINISH FACE AND DETERMINING SHOTCRETE THICKNESS.

I.2 MATERIALS

A. ALL MATERIALS FOR SHOTCRETE SHALL CONFORM TO THE FOLLOWING REQUIREMENTS.

I. CEMENT SHALL CONFORM TO ASTM CI50 / AASHTO M85, TYPE I. 2. FINE AGGREGATE SHALL CONFORM TO ASTM C33 / AASHTO M6. 3. COARSE AGGREGATE SHALL CONFORM TO AASHTO M-80, CLASS B. 4. WATER SHALL BE POTABLE, CLEAN, AND FREE FROM SUBSTANCES DELETERIOUS TO CONCRETE AND STEEL, OR THAT WOULD CAUSE STAINING.

5. ACCELERATOR SHALL BE THE FLUID TYPE, APPLIED AT NOZZLE, AND MEET THE REQUIREMENTS HEREIN.

6. WATER-REDUCER AND SUPER-PLASTICIZER SHALL CONFORM TO ASTM C494 / AASHTO MI94, TYPE A, D, F, G.

7. AIR-ENTRAINING AGENT SHALL CONFORM TO ASTM C260 / AASHTO

8. FLY ASH SHALL CONFORM TO ASTM C618 / AASHTO M295, TYPE F OR G, CEMENT REPLACEMENT UP TO 35% BY WEIGHT OF CEMENT. 9. SILICA FUME SHALL CONFORM TO ASTM CI240, 90% MINIMUM SILICON DIOXIDE SOLIDS CONTENT, NOT TO EXCEED 12% BY WEIGHT OF CEMENT. IO. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 / AASHTO M55.

II. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 / AASHTO M3I, GRADE 60. ALL REINFORCING STEEL DETAILS SHALL CONFORM TO ACI 315.

12. CURING COMPOUNDS SHALL CONFORM TO AASHTO MI48, TYPE ID OR

13. FILM PROTECTION FOR CURING SHALL CONFORM TO AASHTO MITI OR POLYETHYLENE FILM.

B. SHOTCRETE ADMIXTURES SHALL NOT BE USED UNLESS APPROVED BY THE ENGINEER. ADMIXTURES USED TO ENTRAIN AIR, TO REDUCE WATER-CEMENT RATIO, TO RETARD OR ACCELERATE SETTING TIME, OR TO ACCELERATE THE DEVELOPMENT OF STRENGTH, SHALL BE THOROUGHLY MIXED INTO THE SHOTCRETE AT THE RATE SPECIFIED BY THE MANUFACTURER UNLESS SPECIFIED OTHERWISE. ACCELERATING ADDITIVES SHALL BE COMPATIBLE WITH THE CEMENT USED, BE NON-CORROSIVE TO STEEL AND SHALL NOT PROMOTE OTHER DETRIMENTAL EFFECTS SUCH AS CRACKING OR EXCESSIVE SHRINKAGE. THE MAXIMUM ALLOWABLE CHLORIDE ION CONTENT OF ALL INGREDIENTS SHALL NOT EXCEED O.IO PERCENT WHEN TESTED PER AASHTO T260.

C. MATERIALS SHALL BE DELIVERED, STORED AND HANDLED TO PREVENT CONTAMINATION, SEGREGATION, CORROSION OR DAMAGE. LIQUID ADMIXTURES SHALL BE STORED TO PREVENT EVAPORATION AND FREEZING.

D. AGGREGATES FOR SHOTCRETE SHALL MEET THE STRENGTH AND DURABILITY REQUIREMENT OF AASHTO MOO AND SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE SIZE	PERCENT PASSING BY WEIGHT	SIEVE SIZE	PERCENT PASSING BY WEIGHT
1/2 INCH	100	NO. 16	35-55
3/8 INCH	90-100	NO. 30	20-35
NO. 4	70-85	NO. 50	8-20
NO. 8	50-70	NO. 100	2-10

E. CEMENT CONTENT SHALL BE AT LEAST 600 POUNDS PER CUBIC YARD. THE WATER/CEMENT RATIO SHALL NOT BE GREATER THAN 0.45. FOR WET-MIX SHOTCRETE EXPOSED TO FREEZING AND THAWING, THE AIR CONTENT AT THE TRUCK SHALL BE BETWEEN 7 TO 10 PERCENT WHEN TESTED IN ACCORDANCE WITH ASTM C231 / AASHTO TI52.

F. SHOTCRETE SHALL BE PROPORTIONED TO ATTAIN A COMPRESSIVE STRENGTH OF 2500 PSI IN 3 DAYS AND 5000 PSI IN 28 DAYS. THE AVERAGE COMPRESSIVE STRENGTH OF EACH SET OF THREE CORES EXTRACTED FROM TEST PANELS OR WALL FACE MUST BE EQUAL TO OR EXCEED 85%, WITH NO INDIVIDUAL CORE LESS THAN 75% OF THE SPECIFIED COMPRESSIVE STRENGTH IN ACCORDANCE WITH ACI 506.2.

1.4.3 DELIVERY AND APPLICATION

A. A CLEAN, DRY, OIL-FREE SUPPLY OF COMPRESSED AIR SUFFICIENT FOR MAINTAINING ADEQUATE NOZZLE VELOCITY FOR ALL PARTS OF THE WORK AND FOR SIMULTANEOUS OPERATION OF A BLOW PIPE FOR CLEANING AWAY REBOUND SHALL BE MAINTAINED AT ALL TIMES. THE EQUIPMENT SHALL BE CAPABLE OF DELIVERING THE PREMIXED MATERIAL ACCURATELY, UNIFORMLY, AND CONTINUOUSLY THROUGH THE DELIVERY HOSE.

VOLUME IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C94 / AASHTO MI57. MIXING EQUIPMENT SHALL BE CAPABLE OF THOROUGHLY MIXING THE MATERIALS IN SUFFICIENT QUANTITY TO MAINTAIN PLACING CONTINUITY. READY-MIX SHOTCRETE SHALL BE DELIVERED AND PLACED WITHIN 1-1/2 HOURS OF THE BATCH TIME UNLESS APPROVED OTHERWISE BY THE ENGINEER.

1.3 TEST PANELS

A. IN GENERAL, PRECONSTRUCTION AND PRODUCTION SHOTCRETE TEST PANELS SHALL BE REQUIRED. HOWEVER, DEPENDING ON THE AMOUNT OF SHOTCRETE WALL REINFORCEMENT, THE ENGINEER MAY WAIVE THE REQUIREMENTS FOR A REINFORCED PRECONSTRUCTION TEST PANEL. PRECONSTRUCTION AND PRODUCTION TEST PANELS SHALL NOT BE DISTURBED OR MOVED WITHIN THE FIRST 24 HOURS AFTER SHOOTING. TEST PANELS SHALL BE FIELD CURED UNDER CONDITIONS SIMILAR TO THOSE ANTICIPATED FOR THE WORK. SHOTCRETING AND CORING OF TEST PANELS SHALL BE PERFORMED BY QUALIFIED PERSONNEL IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE NOT LESS THAN 2 DAYS PRIOR TO THE SHOOTING OF THE PRECONSTRUCTION TEST PANELS.

B. EACH NOZZLEMAN SHALL FURNISH AT LEAST TWO PRECONSTRUCTION TEST PANELS FOR EACH PROPOSED MIXTURE BEING CONSIDERED AND FOR EACH SHOOTING POSITION ENCOUNTERED ON THE JOB. PRECONSTRUCTION TEST PANELS SHALL BE MADE BY EACH APPLICATION CREW USING THE EQUIPMENT, MATERIALS, MIXTURE PROPORTIONS, AND PROCEDURES PROPOSED FOR THE JOB PRIOR TO THE COMMENCEMENT OF WORK.

C. PRECONSTRUCTION TEST PANELS SHALL BE 30 INCHES X 30 INCHES (MINIMUM), IN ACCORDANCE WITH ACI 506.2-95 AND THE FOLLOWING:

I. ONE TEST PANEL SHALL BE THE MAXIMUM SHOTCRETE THICKNESS SHOWN ON THE PLANS AND SHALL INCLUDE THE MAXIMUM ANTICIPATED REINFORCING CONGESTION. CORES EXTRACTED FROM THE REINFORCED TEST PANEL SHALL DEMONSTRATE ENCAPSULATION OF THE REINFORCEMENT IN ACCORDANCE WITH ACI 506.2 EQUAL TO CORE

GRADE 2 OR BETTER. 2. ONE TEST PANEL SHALL BE UNREINFORCED, AT LEAST 6 INCHES THICK, AND USED FOR COMPRESSIVE STRENGTH TESTING. 3. THE SIDES OF THE TEST PANELS SHALL BE CHAMFERED OUTWARD AT 45 DEGREES OVER THE FULL THICKNESS OF THE PANEL.

D. THE CONTRACTOR SHALL FURNISH AT LEAST ONE PRODUCTION TEST PANEL OR, IN LIEU OF PRODUCTION TEST PANELS, SIX 3-INCH DIAMETER CORES FROM THE SHOTCRETE FACE DURING THE FIRST APPLICATION OF SHOTCRETE AND HENCEFORTH FOR EVERY FIFTH APPLICATION OF SHOTCRETE, OR EVERY 5000 SQUARE FEET, OR 50 CUBIC YARDS OF SHOTCRETE PLACED, WHICHEVER IS LESS. THE PRODUCTION TEST PANELS SHALL BE CONSTRUCTED SIMULTANEOUSLY WITH THE SHOTCRETE FACING INSTALLATION AT TIMES DESIGNATED BY THE OWNER'S REPRESENTATIVE. THE PRODUCTION TEST PANELS SHALL HAVE MINIMUM DIMENSIONS OF 18 INCHES X 18 INCHES X 6 INCHES.

E. SHOTCRETE WILL BE ACCEPTED BASED ON THE 28-DAY STRENGTH OF CORES TAKEN FROM THE PRODUCTION TEST PANELS. THE FREQUENCY SPECIFIED FOR THE PRODUCTION TEST PANELS IS APPROXIMATE. A GREATER NUMBER OF PANELS MAY BE REQUIRED BY THE ENGINEER.

AT LEAST SIX CORES WILL BE CUT FROM EACH PRECONSTRUCTION AND PRODUCTION TEST PANEL FOR COMPRESSIVE STRENGTH TESTING. CORES SHALL BE SOAKED IN WATER FOR AT LEAST 40 HOURS IN ACCORDANCE WITH AASHTO T24 OR ACI 506.2. CORES SHALL BE AT LEAST 3 INCHES IN DIAMETER AND SHALL HAVE A MINIMUM LENGTH TO DIAMETER RATIO OF ONE. WHEN THE LENGTH OF A CORE IS LESS THAN TWICE THE DIAMETER, APPLY THE CORRECTION FACTORS GIVEN IN ASTM C42 TO OBTAIN THE COMPRESSIVE STRENGTH OF INDIVIDUAL CORES. THREE CORES SHALL BE TESTED AT 3-DAYS, AND THREE CORES SHALL BE TESTED AT 28-DAYS FOR COMPRESSIVE STRENGTH. CORE HOLES IN THE WALL SHALL BE FILLED WITH PATCHING MORTAR AFTER CLEANING AND THOROUGH DAMPENING.

1.4 EXECUTION OF PRODUCTION SHOTCRETE WORK

1.4.1 ALIGNMENT CONTROL A. ALIGNMENT WIRES AND/OR THICKNESS CONTROL PINS SHALL BE PROVIDED AS NECESSARY TO ESTABLISH AND MAINTAIN THE MINIMUM SHOTCRETE THICKNESS SHOWN ON THE PLANS. THE MAXIMUM DISTANCE BETWEEN THE WIRES AND/OR THICKNESS CONTROL PINS ON ANY CONTRACTOR SHALL ENSURE THAT ALIGNMENT WIRES ARE TIGHT, TRUE TO LINE, AND PLACED TO ALLOW FURTHER TIGHTENING.

1.4.2 SURFACE PREPARATION

A. PRIOR TO SHOTCRETING THE UNGROUTED ZONE, THE CONTRACTOR SHALL REMOVE ALL LOOSE MATERIALS FROM THE SURFACE OF THE GROUT.

B. THE CONTRACTOR SHALL REMOVE ALL LOOSE MATERIALS AND LOOSE DRIED SHOTCRETE FROM PREVIOUS PLACEMENT OPERATIONS AND FROM ALL RECEIVING SURFACES BY METHODS ACCEPTABLE TO THE OWNER'S REPRESENTATIVE. THE REMOVAL SHALL BE ACCOMPLISHED IN SUCH A MANNER AS NOT TO LOOSEN, CRACK, OR SHATTER THE SURFACES TO RECEIVE THE SHOTCRETE. ANY SURFACE MATERIAL THAT, IN THE OPINION OF THE OWNER'S REPRESENTATIVE, IS SO LOOSENED OR DAMAGED SHALL BE REMOVED TO SUFFICIENT DEPTH TO PROVIDE A BASE THAT IS SUITABLE TO RECEIVE THE SHOTCRETE. MATERIAL THAT LOOSENS AS THE SHOTCRETE IS APPLIED SHALL BE REMOVED. SHOTCRETE SHALL NOT BE PLACED ON FROZEN SURFACES.

B. THE SHOTCRETE SHALL BE APPLIED FROM THE LOWER PART OF THE WORK AREA UPWARDS TO PREVENT ACCUMULATION OF REBOUND ON UNCOVERED SURFACES. THICKNESS, METHODS OF SUPPORT, AIR PRESSURE, AND RATE OF PLACEMENT OF SHOTCRETE SHALL BE CONTROLLED TO PREVENT SAGGING OR SLOUGHING OF FRESHLY APPLIED SHOTCRETE. WHERE SHOTCRETE IS USED TO FILL THE BIRD'S BEAK, THE NOZZLE SHALL BE POSITIONED INTO THE MOUTH OF THE DRILLHOLE TO COMPLETELY FILL THE VOID. REBOUND SHALL NOT BE WORKED BACK INTO THE PLACEMENT NOR SHALL THE REBOUND BE SALVAGED. REBOUND THAT DOES NOT FALL CLEAR OF THE WORKING AREA SHALL BE REMOVED. THE NOZZLE SHALL BE HELD AT A DISTANCE AND AT AN ANGLE APPROXIMATELY PERPENDICULAR TO THE WORKING FACE SO THAT REBOUND WILL BE MINIMAL AND COMPACTION WILL BE MAXIMIZED. THE NOZZLE SHOULD BE ROTATED STEADILY IN A SMALL CIRCULAR PATTERN.

C. SHOTCRETE PLACEMENT SHALL BE BY THE BENCH GUNNING METHOD WHEN THE THICKNESS OF THE SHOTCRETE LAYER IS 6 INCHES OR GREATER. THE GUNNING METHOD SHALL CONSIST OF BUILDING UP A THICK LAYER OF SHOTCRETE FROM THE BOTTOM OF THE LIFT AND MAINTAINING THE TOP SURFACE AT APPROXIMATELY A 45-DEGREE SLOPE.

1.4.4 VISUAL OBSERVATION

A. A CLEARLY DEFINED PATTERN OF CONTINUOUS HORIZONTAL OR VERTICAL RIDGES OR DEPRESSIONS AT THE REINFORCING ELEMENTS AFTER THEY ARE COVERED WILL BE CONSIDERED INDICATION OF INSUFFICIENT COVER OF REINFORCEMENT OR POOR APPLICATION AND PROBABLE VOID. IN THIS CASE, THE WORK SHALL BE IMMEDIATELY SUSPENDED AND THE WORK CAREFULLY INSPECTED BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL IMPLEMENT AND COMPLETE CORRECTIVE MEASURES PRIOR TO RESUMING THE SHOTCRETE OPERATIONS.

B. THE SHOTCRETING PROCEDURE MAY BE CORRECTED BY ADJUSTING THE NOZZLE DISTANCE AND ORIENTATION PERPENDICULAR TO THE SURFACE, ADJUSTING THE WATER CONTENT OF THE SHOTCRETE MIX, OR OTHER MEANS ACCEPTABLE TO THE OWNER'S REPRESENTATIVE. ALL OVERSPRAY AND REBOUND SHALL BE REMOVED FROM THE SURFACE.

C. SURFACE DEFECTS SHALL BE REPAIRED AS SOON AS POSSIBLE AFTER INITIAL PLACEMENT OF SHOTCRETE. ALL SHOTCRETE THAT LACKS UNIFORMITY, EXHIBITS SEGREGATION, SAGGING, HONEYCOMBING, OR LAMINATION, OR CONTAINS ANY VOIDS OR SAND POCKETS SHALL BE REMOVED AND REPLACED WITH FRESH SHOTCRETE BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.

1.4.5 CONSTRUCTION JOINTS

A. CONSTRUCTION JOINTS SHALL BE TAPERED TOWARD THE EXCAVATION FACE OVER A MINIMUM DISTANCE EQUAL TO THE THICKNESS OF THE SHOTCRETE LAYER. THE SURFACE OF THE JOINTS SHALL BE ROUGH AND CLEANED OF ALL LAITANCE AND FOREIGN SUBSTANCES PRIOR TO SHOTCRETE PLACEMENT.

1.4.6 FINISHING AND CURING REQUIREMENTS

A. TEMPORARY SHOTCRETE MAY BE LEFT WITH AN AS-SHOT GUN FINISH.

B. THERE ARE NO SPECIFIC CURING REQUIREMENTS FOR TEMPORARY

1.4.7 WEATHER LIMITATIONS

SHOTCRETE.

A. SHOTCRETE SHALL NOT BE PLACED IN COLD WEATHER UNLESS ADEQUATELY PROTECTED WHEN THE AMBIENT TEMPERATURE IS BELOW 40° F AND FALLING AND/OR WHEN THE SHOTCRETE IS LIKELY TO BE SUBJECTED TO FREEZING TEMPERATURES BEFORE REACHING A MINIMUM STRENGTH OF 750 PSI. COLD WEATHER PROTECTION SHALL BE MAINTAINED UNTIL THE STRENGTH OF THE SHOTCRETE IS GREATER THAN 750 PSI. COLD WEATHER PROTECTION SHALL INCLUDE HEATING UNDER TENTS, BLANKETS OR OTHER MEANS ACCEPTABLE TO THE OWNER'S REPRESENTATIVE. THE TEMPERATURE OF THE SHOTCRETE, WHEN DEPOSITED, SHALL BE NOT LESS THAN 50 DEGREES F NOR MORE THAN 80 DEGREES F. THE AIR IN CONTACT WITH SHOTCRETE SURFACES SHALL BE MAINTAINED AT TEMPERATURES ABOVE 32 DEGREES F FOR A MINIMUM OF 7 DAYS.

B. SHOTCRETE APPLICATION SHALL ALSO BE SUSPENDED DURING HIGH WINDS AND HEAVY RAINS WHEN IN THE OPINION OF THE OWNER'S REPRESENTATIVE THE QUALITY OF THE APPLICATION IS NOT ACCEPTABLE. NEWLY-PLACED SHOTCRETE EXPOSED TO RAIN THAT WASHES OUT CEMENT OR OTHERWISE MAKES THE SHOTCRETE UNACCEPTABLE TO THE OWNER'S REPRESENTATIVE SHALL BE REMOVED AND REPLACED. THE CONTRACTOR SHALL PROVIDE ADEQUATELY SECURED POLYETHYLENE SHEETING OR EQUIVALENT WHEN ADVERSE EXPOSURE TO WEATHER IS ANTICIPATED.

1.4.8 TOLERANCES

A. THE TOLERANCES FOR SHOTCRETE FACINGS SHALL BE AS FOLLOWS:

. THE VERTICAL LOCATION OF A HORIZONTAL SHOTCRETE JOINT SHALL BE WITHIN I FOOT OF THE ELEVATION SHOWN ON THE PLANS.

2. THE SHOTCRETE WALL THICKNESS SHALL BE NO LESS THAN THAT SHOWN ON THE PLANS MINUS 0.5 INCHES. 3. THE HORIZONTAL AND VERTICAL LOCATIONS OF REINFORCING BARS

SHALL BE WITHIN I INCH OF THE LOCATIONS SHOWN ON THE PLANS. 4. REINFORCING BAR LAP LENGTHS SHALL BE NO LESS THAN THAT

SHOWN ON THE PLANS MINUS | INCH.

5. REINFORCING BAR SPACING SHALL NOT EXCEED THAT SHOWN ON THE PLANS PLUS | INCH.

2. PERMANENT SHOTCRETE

2.1 GENERAL

A. IN ADDITION TO THE REQUIREMENTS OF SECTION I, PERMANENT SHOTCRETE SHALL SATISFY THE REQUIREMENTS OF SECTION 2.

2.2 SUBMITTALS

A. AT LEAST 15 DAYS PRIOR TO INITIATING THE WORK, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW:

. WRITTEN DOCUMENTATION OF THE FINISHERS QUALIFICATIONS. 2. SHOP DRAWINGS OF THE REINFORCING LAYOUT AND SCHEDULES.

2.3 EXECUTION OF PRODUCTION SHOTCRETE WORK

2.3.1 CONSTRUCTION JOINTS

A. CONSTRUCTION JOINTS SHALL BE WATERTIGHT AND UNIFORMLY TAPERED TOWARD THE EXCAVATION FACE OVER A MINIMUM DISTANCE EQUAL TO THE THICKNESS OF THE SHOTCRETE LAYER. THE SURFACE OF THE JOINTS SHALL BE ROUGH, CLEAN, SOUND AND DAMP. THE HARDENED SURFACE SHALL BE CLEANED OF ALL LAITANCE, FOREIGN SUBSTANCES, WASHED WITH CLEAN WATER, AND WETTED THOROUGHLY IMMEDIATELY PRIOR TO PLACEMENT OF FRESH SHOTCRETE.

2.3.2 FINISHING AND CURING REQUIREMENTS

A. SHOTCRETE FINISH SHALL BE EITHER A WOOD FLOAT OR STEEL TROWELLED FINISH, AS SHOWN ON THE PLANS.

B. THE SHOTCRETE SHALL BE PROTECTED FROM LOSS OF MOISTURE FOR AT LEAST 7 DAYS AFTER PLACEMENT. WHEN SHOTCRETE IS BEING PROTECTED FROM LOW TEMPERATURES, CURING SHALL BE TERMINATED NO SOONER THAN ONE DAY AFTER THE REMOVAL OF LOW TEMPERATURE PROTECTION. CURING OF SHOTCRETE SHALL BE BY METHODS THAT WILL KEEP SHOTCRETE SURFACES ADEQUATELY WET AND PROTECTED DURING THE SPECIFIED PERIOD. CURING SHALL COMMENCE WITHIN ONE HOUR OF SHOTCRETE APPLICATION. WHEN THE AMBIENT TEMPERATURE EXCEEDS 80 DEGREES FAHRENHEIT, THE CONTRACTOR SHALL PLAN THE WORK SUCH THAT CURING CAN COMMENCE IMMEDIATELY AFTER FINISHING. THE CURING SHALL BE COMPLETED USING WATER, MEMBRANE, OR FILM CURING METHODS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

C. FOR WATER CURING, THE RATE OF WATER APPLICATION SHALL BE REGULATED TO PROVIDE COMPLETE SURFACE COVERAGE WITH A MINIMUM OF RUNOFF.

D. FOR MEMBRANE CURING, CURING COMPOUNDS SHALL NOT BE USED ON ANY SURFACES AGAINST WHICH ADDITIONAL SHOTCRETE OR OTHER FINISHING MATERIALS ARE TO BE BONDED UNLESS THE SURFACE IS SANDBLASTED IN A MANNER ACCEPTABLE TO THE OWNER'S REPRESENTATIVE. MEMBRANE CURING COMPOUNDS SHALL BE SPRAY APPLIED AS QUICKLY AS PRACTICAL AFTER INITIAL SHOTCRETE SET AT A COVERAGE OF NOT LESS THAN 40 SQUARE FEET PER GALLON.

E. FOR FILM CURING, POLYETHYLENE SHEETING MAY BE USED TO SUPPLEMENT WATER CURING ON SHOTCRETE THAT WILL BE COVERED LATER WITH ADDITIONAL SHOTCRETE OR CONCRETE. THE SHEETING SHALL COMPLETELY COVER ALL SURFACES, AND HAVE EDGES OVERLAPPED FOR PROPER SEALING AND ANCHORAGES.

2.3.4 TOLERANCES	
 A. THE TOLERANCES FOR SHOTCRETE FACINGS SHALL BE AS FOLLOWS: I. THE VERTICAL LOCATION OF A HORIZONTAL SHOTCRETE JOINT SHALL BE WITHIN 0.5 FEET OF THE ELEVATION SHOWN ON THE PLANS. 2. THE SHOTCRETE WALL THICKNESS SHALL BE NO LESS THAN THAT SHOWN ON THE PLANS MINUS 0.5 INCHES. 3. THE HORIZONTAL AND VERTICAL LOCATIONS OF REINFORCING BARS SHALL BE WITHIN I INCH OF THE LOCATIONS SHOWN ON THE PLANS. 4. REINFORCING BAR LAP LENGTHS SHALL BE NO LESS THAN THAT SHOWN ON THE PLANS MINUS I INCH. 5. REINFORCING BAR SPACING SHALL NOT EXCEED THAT SHOWN ON THE PLANS PLUS I INCH. 	DESCRIPTION PERMIT ISSUE
6. THE DEVIATION IN PLANARITY OF THE FINISHED WALL SURFACE SHALL NOT EXCEED 0.5 INCHES IN 10 FEET.	
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	CHESHIRE SHORT PLAT 7615 E. MERCER WAY, MERCER ISLAND, WASHINGTON 98040 PERMANENT RETAINING WALL SPECIFICATIONS
	PROJ. NO. 23-30 SHEET NUMBER
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