

T-Mobile

MERCER ISLAND WT

4350 88TH AVE SE
MERCER ISLAND, WA 98040

SITE NUMBER: SE02629A

LATITUDE 47° 34' 06.17" N (47.568381)

LONGITUDE 122° 13' 14.71" W (-122.220753)

NOTE:

STRUCTURAL UPGRADES
REQUIRED FOR THIS PROJECT

RFDS: VER: 2.5



PROJECT INFORMATION:

**MERCER ISLAND WT
SE02629A**

4350 88TH AVE SE
MERCER ISLAND, WA 98040

ISSUED FOR:

BUILDING PERMIT

REVISION HISTORY:

NO.	DATE:	DESCRIPTION:	CHK. BY:
5			
4	4/12/2019	STRUCTURAL UPGRADE SHEETS ADDED	BJT
3	2/11/2019	REVISED PER RFDS	BJT
2	9/12/2018	REVISED PER REDLINES	BJT
1	7/6/2018	ISSUED DESIGN REVIEW	BJT

PLANS PREPARED BY:

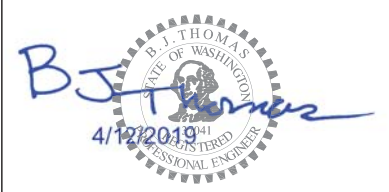
B. J. THOMAS, P.E.
7607 80TH AVE NE
MARYSVILLE, WA 98270
206-851-1106

DRAWN BY: CHK. BY:

JL

BJ

LICENSURE:



DRAWING INFORMATION:

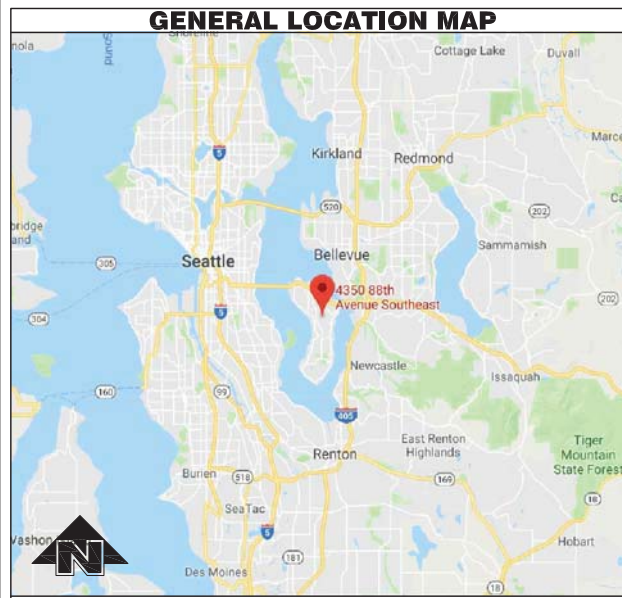
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DRAWING TITLE:

TITLE SHEET

DRAWING NUMBER:

T-1



DRIVING DIRECTIONS

FROM T-MOBILE BOTHELL 4 OFFICE:

- DEPART NORTH CREEK PKWY TOWARD NORTH CREEK TRAIL 0.3 MI
- TURN RIGHT ONTO NE 195TH ST 0.3 MI
- TAKE RAMP LEFT FOR I-405 SOUTH TOWARD RENTON 12.9 MI
- AT EXIT 11, TAKE RAMP RIGHT FOR I-90 WEST TOWARD SEATTLE 1.6 MI
- AT EXIT 8, TAKE RAMP RIGHT AND FOLLOW SIGNS FOR E. MERCER WAY 0.2 MI
- TURN LEFT ONTO E MERCER WAY 344 FT
- TURN RIGHT ONTO SE 36TH ST 0.4 MI
- ROAD NAME CHANGES TO GALLAGHER HILL RD 0.3 MI
- TURN LEFT ONTO SE 40TH ST 0.1 MI
- TURN RIGHT ONTO 92ND AVE SE 0.2 MI
- TURN RIGHT ONTO SE 42ND ST 0.3 MI
- TURN LEFT ONTO 88TH AVE SE 0.2 MI

ARRIVE AT 4350 88TH AVE SE, MERCER ISLAND, WA 98040

PROJECT TEAM

PROPERTY OWNER: CITY OF MERCER ISLAND
911 SE 36TH ST
MERCER ISLAND, WA

PROJECT MANAGER: TAEC
TJ ELWEL
650 SOUTH ORCAS ST #R-103
SEATTLE, WA 98108
PHONE: 206-819-4727

CONSTRUCTION MANAGER: TAEC
BRADLEY JACOBSON
4122 FACTORIA BLVD, #303
BELLEVUE, WA 98006

SITE ACQUISITION: TAEC
GARY ABRAHAMS
650 SOUTH ORCAS ST #R-103
SEATTLE, WA 98108
PHONE: (206) 349-4279
gary2@gmanetworkservices.com

ZONING: TAEC
GARY ABRAHAMS
650 SOUTH ORCAS ST #R-103
SEATTLE, WA 98108
PHONE: (206) 349-4279
gary2@gmanetworkservices.com

CONSULTING ENGINEER: B.J. THOMAS, P.E.
7607 80TH AVE NE
MARYSVILLE, WA 98270
PHONE: 206-851-1106
bjthomas@bjthomaspe.comcastbiz.net

PROJECT DESCRIPTION

ADD 3 FFHH-65C ANTENNAS, 3 AHFIBS AND 3 AHL0AS ON TOWER. REMOVE 6 STYLE 4 TMAS AND REUSE 6 STYLE 4 TMAS (ON TOWER) FOR GSM ON GROUND. REMOVE 6 FEEDERS AND REUSE 6 FEEDERS (2 PER SECTOR). REMOVE 6 AWS/PCS DIPLEXERS, KEEP 6 AWS/PCS DIPLEXERS, 2 FRIAS, AND 1 FSME FOR U21, 1 ESMB AND 1 FXFB FOR GSM. ADD 2 AMOBS, 1 ASIA, 3 ABIAS. ADD 1 ASIK AND 1 ABIL INSTALL IN FCOA @ GROUND. REPLACE ULTRASITE W/ FCOA. ADD (3) NEW ANTENNA MOUNT @ EACH SECTOR (SITEPRO #CWT01)

PROJECT INFORMATION

THIS IS UNSTAFFED AND RESTRICTED EQUIPMENT AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNALS FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE. T-MOBILE CERTIFIES THAT THIS TELEPHONE EQUIPMENT FACILITY WILL BE SERVICED ONLY BY T-MOBILE EMPLOYEES AND THE WORK ASSOCIATED WITH ANY EQUIPMENT CANNOT BE PERFORMED BY HANDICAPPED PERSONS. THIS FACILITY WILL BE FREQUENTED ONLY BY SERVICE PERSONNEL FOR REPAIR PURPOSES. PURSUANT TO THE AMERICANS WITH DISABILITIES ACT (ADA), APPENDIX B SECTION 4.11. (5)(b), THIS FACILITY IS EXEMPT FROM THAT ACT. NO POTABLE WATER SUPPLY IS TO BE PROVIDED AT THIS LOCATION. NO WASTE WATER OR SOLID WASTE WILL BE GENERATED AT THIS LOCATION. T-MOBILE MAINTENANCE CREW (ONE PERSON) WILL MAKE AN AVERAGE OF ONE TRIP PER MONTH AT ONE HOUR PER TRIP.

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A-1.2	PROPOSED ENLARGED SITE PLAN
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ZONING INFORMATION

SITE NUMBER: SE02629A
SITE NAME: MERCER ISLAND WT
SITE ADDRESS: 4350 88TH AVE SE
MERCER ISLAND, WA 98040

PARCEL #: 4457300325
CURRENT ZONING: R-9.6
JURISDICTION: KING COUNTY
GOV CODE: 2015 IBC, STANDARDS & AMENDMENTS, WAC 51-50
BUILDING TYPE: -
SITE TYPE: UNSTAFFED TELECOMM FACILITY

UTILITY PURVEYOR

POWER COMPANY: N/A

TELCO COMPANY: N/A

LEGAL DESCRIPTION

ABBREVIATED PER ASSESSOR RECORDS:
LUCAS HEIGHTS ADD

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING ON THESE PLANS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

2015 IBC, STANDARDS & AMENDMENTS, WAC 51-50
2015 IMC, STANDARDS & AMENDMENTS, WAC 51-52
2015 IFC, STANDARDS & AMENDMENTS, WAC 51-54
2015 NFPA 54 - NATIONAL FUEL GAS CODE (PROPANE INSTALLATIONS ONLY)
2014 NFPA 58 - LIQUEFIED PETROLEUM GAS CODE (PROPANE INSTALLATIONS ONLY)
2015 INTERNATIONAL FIRE CODE
2015 UPC, STANDARDS & AMENDMENTS, WAC 51-56, 51-57
2017 NATIONAL ELECTRICAL CODE
2012 NATIONAL ELECTRIC SAFETY CODE
LOCAL BUILDING CODE ORDINANCES
ANSI / TIA / EIA - 222 - G
NFPA-101 - LIFE SAFETY CODE

APPROVAL/SIGN OFF OF CONST DRAWINGS

REVIEWERS SHALL CLEARLY PLACE INITIALS ADJACENT TO EACH REDLINE NOTE AS DRAWINGS ARE BEING REVIEWED.

CONSULTANT GROUP SIGN OFF

LANDLORD'S REPRESENTATIVE:	DATE:
CONSTRUCTION MANAGER:	DATE:
CONSTRUCTION PROJECT MANAGER:	DATE:
PROJECT MANAGER:	DATE:
SITE ACQUISITION:	DATE:
ZONING:	DATE:
RF ENGINEER:	DATE:

CALL TWO WORKING DAYS BEFORE YOU DIG

811

NATIONAL UTILITIES UNDERGROUND LOCATE

ELECTRIC - RED	TEL/CATV - ORANGE
SEWER - GREEN	PROPOSED - WHITE
GAS/OIL - YELLOW	WATER - BLUE
SURVEY - PINK	

SAFETY PRECAUTION SHALL BE IMPLEMENTED BY CONTRACTOR(S) AT ALL TRENCHING IN ACCORDANCE WITH CURRENT OSHA STANDARDS

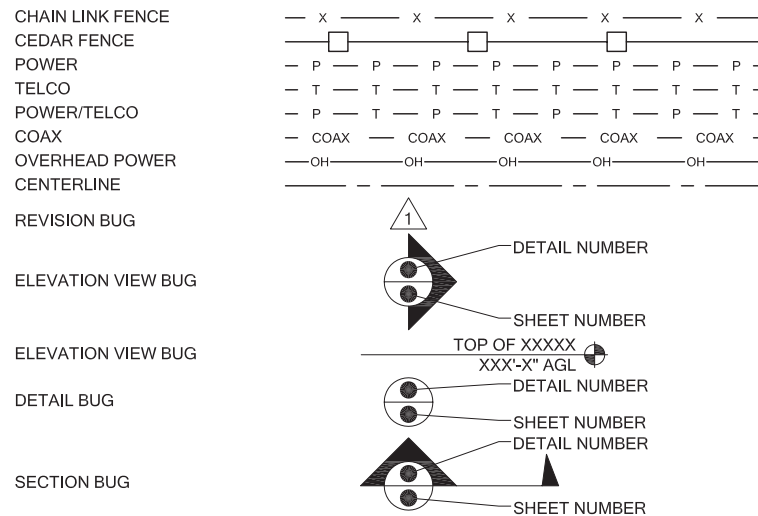
GENERAL NOTES:

- DRAWINGS ARE NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE, THIS SET OF DOCUMENTS IS INTENDED TO BE USED FOR DIAGRAMMATIC PURPOSES ONLY, UNLESS NOTED OTHERWISE. THE GENERAL CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ANY REQUIREMENTS DEEMED NECESSARY TO COMPLETE INSTALLATION AS DESCRIBED IN THE DRAWINGS AND OWNER'S PROJECT MANUAL.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS AND STANDARDIZED DETAILS THAT REQUIRE MODIFICATIONS DUE TO ACTUAL FIELD CONDITIONS AND REQUIREMENTS MUST BE SUBMITTED TO AND APPROVED BY, T-MOBILE WIRELESS REPRESENTATIVE PRIOR TO START OF WORK.
- PRIOR TO THE SUBMISSION OF BIDS, CONTRACTORS INVOLVED SHALL VISIT THE JOB SITE TO FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. CONTRACTORS SHALL VISIT THE CONSTRUCTION SITE WITH THE CONSTRUCTION/CONTRACT DOCUMENTS TO VERIFY FIELD CONDITIONS AND CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN. PRIOR TO PROCEEDING WITH CONSTRUCTION, ANY ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER VERBALLY AND IN WRITING.
- THE GENERAL CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, SAFETY, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
- ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.
- GENERAL CONTRACTOR SHALL PROVIDE, AT THE PROJECT SITE, A FULL SET OF CONSTRUCTION DOCUMENTS UPDATED WITH THE LATEST REVISIONS INVOLVED WITH THE PROJECT. THIS SET IS A VALID CONTRACT DOCUMENT ONLY IF THE TITLE SHEET IS STAMPED IN RED INK "FOR CONSTRUCTION" AND EACH SUCCESSIVE SHEET BEARS THE ARCHITECT'S/ENGINEER'S SIGNED WET STAMP.
- THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAGE, COLLAPSE, ETC. ACCORDING TO APPLICABLE CODES, STANDARDS, AND GOOD CONSTRUCTION PRACTICES.
- THE CONTRACTOR SHALL MEET ALL OSHA REQUIREMENTS FOR ALL INSTALLATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING CONSTRUCTION AND REPAIR ALL DAMAGES TO BETTER THAN NEW CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE CONSULTANT OF ANY DAMAGE TO THE BUILDING SITE OR ANY ADJACENT STRUCTURES AROUND THE PROJECT. THE T-MOBILE REPRESENTATIVE SHALL BE SOLE AND FINAL JUDGE AS TO THE QUALITY OF THE REPAIRED CONSTRUCTION. ANY ADDITIONAL MODIFICATIONS WHICH MUST BE MADE SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.
- WHERE NEW PAVING, CONCRETE SIDEWALKS OR PATHS MEET EXISTING CONSTRUCTION, THE CONTRACTOR SHALL MATCH THE EXISTING PITCH, GRADE, AND ELEVATION SO THE ENTIRE STRUCTURE SHALL HAVE A SMOOTH TRANSITION.
- THE CONTRACTOR SHALL MODIFY THE EXISTING FLOORS, WALL, CEILING, OR OTHER CONSTRUCTION AS REQUIRED TO GAIN ACCESS TO AREAS FOR ALL MECHANICAL, PLUMBING, ELECTRICAL, OR STRUCTURAL MODIFICATIONS. WHERE THE EXISTING CONSTRUCTION DOORS, PARTITIONS, CEILING, ETC., ARE TO BE REMOVED, MODIFIED, OR REARRANGED OR WHERE THE EXPOSED OR HIDDEN MECHANICAL, ELECTRICAL, SYSTEMS ARE ADDED OR MODIFIED, THE GENERAL CONTRACTOR SHALL REPAIR, PATCH AND MATCH ALL EXISTING CONSTRUCTION AND FINISHES OF ALL FLOORS WALLS AND CEILINGS. WHERE CONCRETE MASONRY CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL TOOTH IN ALL NEW CONSTRUCTION TO MATCH THE EXISTING BOND. WHERE CONCRETE CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL VERIFY THE EXACT DETAILS TO BE USED FOR CONSTRUCTION. ALL WORK SHALL BE COVERED UNDER THE GENERAL CONTRACT.
- IF CONTRACTOR OR SUBCONTRACTOR FIND IT NECESSARY TO DEVIATE FROM ORIGINAL APPROVED PLANS, THEN IT IS THE CONTRACTOR'S AND THE SUBCONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CONSULTANT WITH 4 COPIES OF THE PROPOSED CHANGES FOR HIS APPROVAL BEFORE PROCEEDING WITH THE WORK. IN ADDITION THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY APPROVALS FROM THE BUILDING AUTHORITIES FOR THE PROPOSED CHANGES BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY INSPECTIONS AND APPROVALS FROM BUILDING AUTHORITIES DURING THE EXECUTION OF THE WORK.
- CONTRACTOR TO PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.
- THE CONTRACTOR SHALL PERFORM WORK DURING OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.
- SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHAL APPROVED MATERIALS AS APPLICABLE TO THIS FACILITY AND OR PROJECT SITE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR UTILITY LOCATES, SCHEDULING, COORDINATING SPECIAL AND BUILDING DEPARTMENT INSPECTIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND UTILIZING ORIGINAL ROOFING CONTRACTOR AS REQUIRED TO MAINTAIN ANY EXISTING ROOFING WARRANTY.
- ROUTING OF ALL CONDUITS, CABLES, CABLE TRAYS ETC ARE INDICATED AS PROPOSED LOCATION ONLY. CONFIRM THE EXACT LOCATION AND ROUTING WITH THE ON SITE T-MOBILE CONSTRUCTION MANAGER PRIOR TO STARTING WORK.

ABBREVIATIONS

AC	AIR CONDITIONER	JT	JOINT
AFF	ABOVE FINISHED FLOOR	LAM	LAMINATED
AFG	ABOVE FINISHED GRADE	LF	LINEAL FOOT
AFS	ABOVE FINISHED SLAB	MANUF	MANUFACTURER
ALUM	ALUMINUM	MAX	MAXIMUM
	ANCHOR BOLT	MECH	MECHANICAL
	ANGLE	MH	MANHOLE
ARCH	ARCHITECTURAL	MM	MILLIMETER
BTS	BASE TRANSMISSION SYSTEM	MIN	MINIMUM
BLDG	BUILDING	MISC	MISCELLANEOUS
BM	BEAM	MPH	MILES PER HOUR
BOT	BOTTOM	MTL	METAL
B.O.	BOTTOM OF	NIC	NOT IN CONTRACT
BOC	BOTTOM OF CONCRETE	NOM	NOMINAL
BOS	BOTTOM OF STEEL	NTS	NOT TO SCALE
	CONTROL JOINT	OC	ON CENTER
	CENTER LINE	OD	OUTSIDE DIAMETER
CLG	CEILING	OH	OVERHEAD
CLR	CLEAR	OPNG	OPENING
CMU	CONCRETE MASONRY UNIT	OPP	OPPOSITE
COL	COLUMN	(P)	PROPOSED
CONC	CONCRETE	PCS	PERSONAL COMMUNICATION SYSTEM
CONST	CONSTRUCTION	P	PLATE
CONT	CONTINUOUS	PR	PAIR
CTR	CENTER	PSI	POUNDS PER SQUARE INCH
DIA / ∅	DIAMETER	PSF	POUNDS PER SQUARE FOOT
DTL	DETAIL	PT	PRESSURE TREATED
	EXISTING	RAD	RADIUS
EA	EACH	RD	ROOF DRAIN
	EXPANSION JOINT	REINF	REINFORCED/REINFORCING
ELEC	ELECTRIC/ELECTRICAL	REQ'D	REQUIRED
	ELEVATION	RM	ROOM
EQ	EQUAL	R/W	RIGHT OF WAY
EW	EACH WAY	SCHED	SCHEDULE
EXP	EXPANSION	SECT	SECTION
EXT	EXTERIOR	SF	SQUARE FOOT
	FLOOR DRAIN	SIM	SIMILAR
FIN	FINISH	SQ FT	SQUARE FOOT
FIN FLR	FINISH FLOOR	SS	STAINLESS STEEL
FLR	FLOOR	STD	STANDARD
FTG	FOOTING	STL	STEEL
GA	GAUGE	STRUC	STRUCTURAL
GALV	GALVANIZED	TEMP	TEMPORARY
GYP	GYPSPUM	THK	THICK
GB	GYPSPUM BOARD	T.O.	TOP OF
HM	HOLLOW METAL	TOS	TOP OF STEEL
HOR	HORIZONTAL	TOC	TOP OF CONCRETE
HR	HOUR	TYP	TYPICAL
	HEIGHT	UNO	UNLESS NOTED OTHERWISE
HVAC	HEATING VENTILATION AIR CONDITIONING	VCT	VINYL COMPOSITION TILE
INSUL	INSULATION	VERT	VERTICAL
INT	INTERIOR	W/	WITH
		WWW	WELDED WIRE MESH

LEGENDS & SYMBOLS



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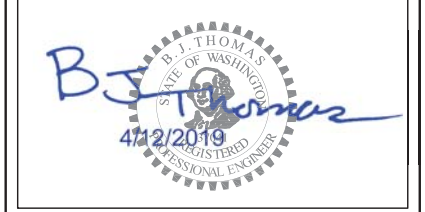
PLANS PREPARED BY:

B. J. THOMAS, P.E.
7607 80TH AVE NE
MARYSVILLE, WA 98270
206-851-1106

DRAWN BY: CHK. BY:

JL BJ

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GENERAL NOTES

DRAWING NUMBER:

G-1



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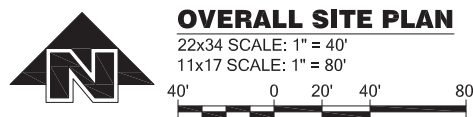
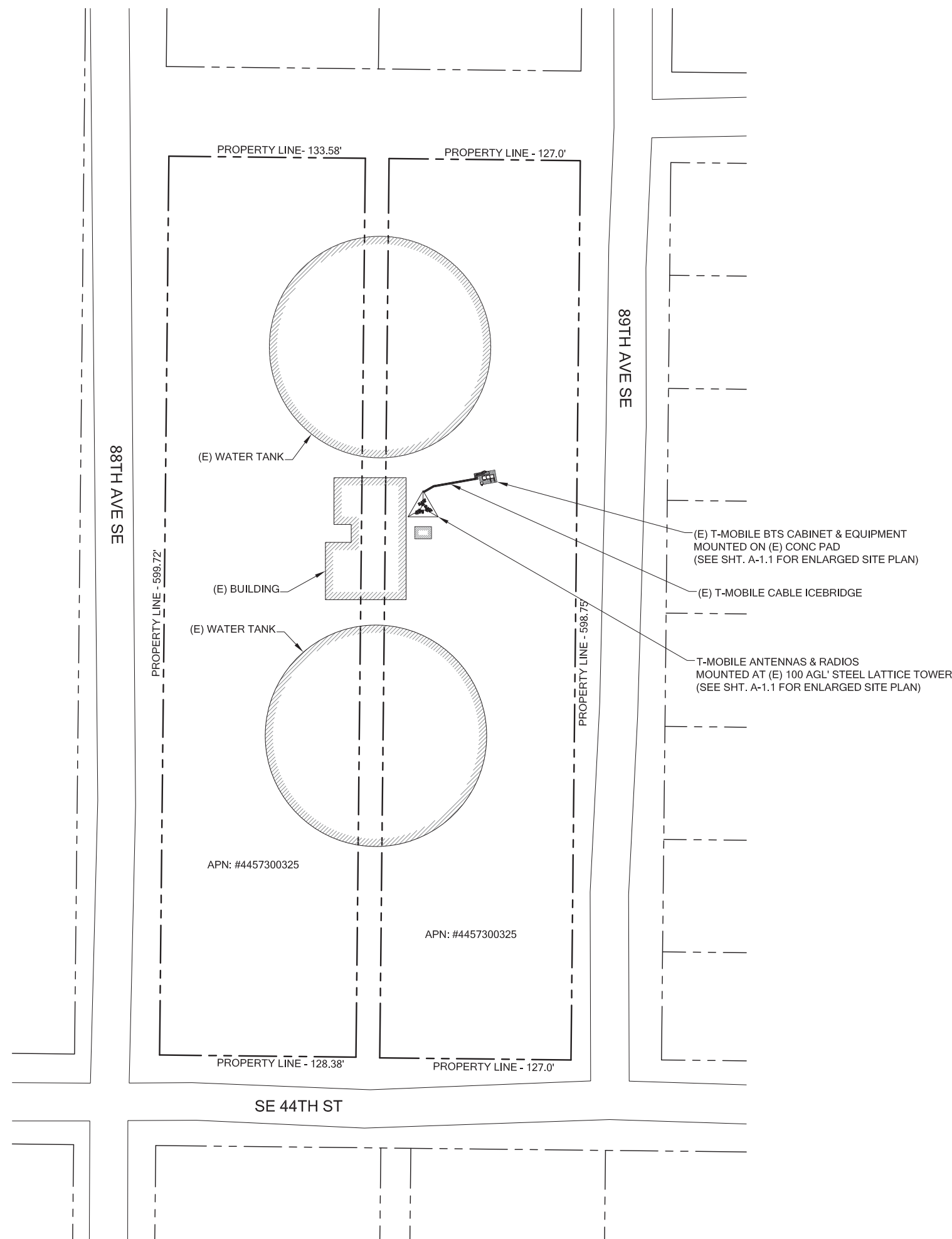
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DRAWING TITLE:

**OVERALL
SITE PLAN**

DRAWING NUMBER:

A-1



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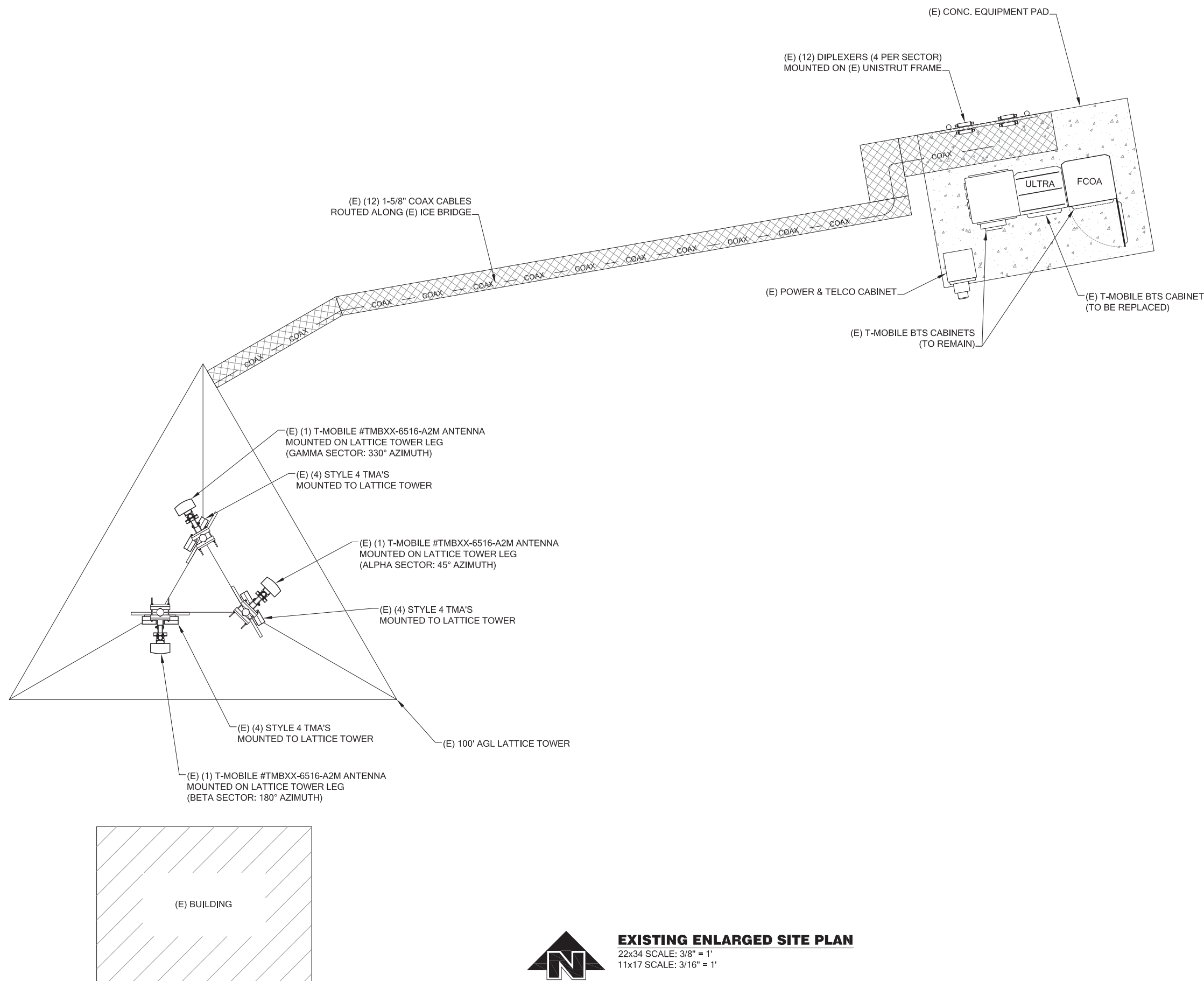
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DRAWING TITLE:

**EXISTING
ENLARGED
SITE PLAN**

DRAWING NUMBER:

A-1.1



EXISTING ENLARGED SITE PLAN

22x34 SCALE: 3/8" = 1'
11x17 SCALE: 3/16" = 1'

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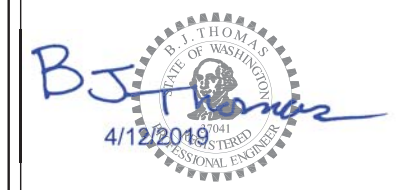
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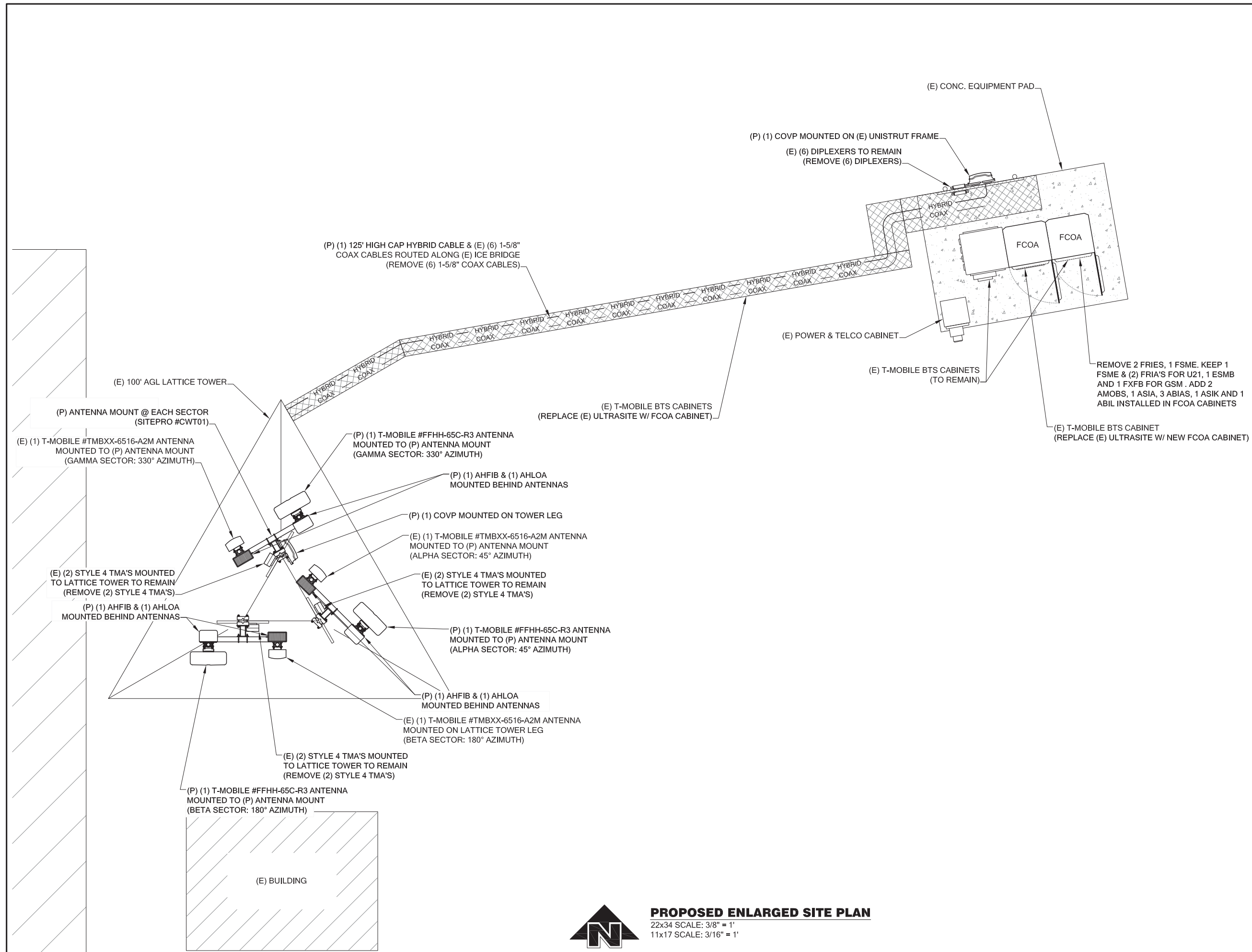
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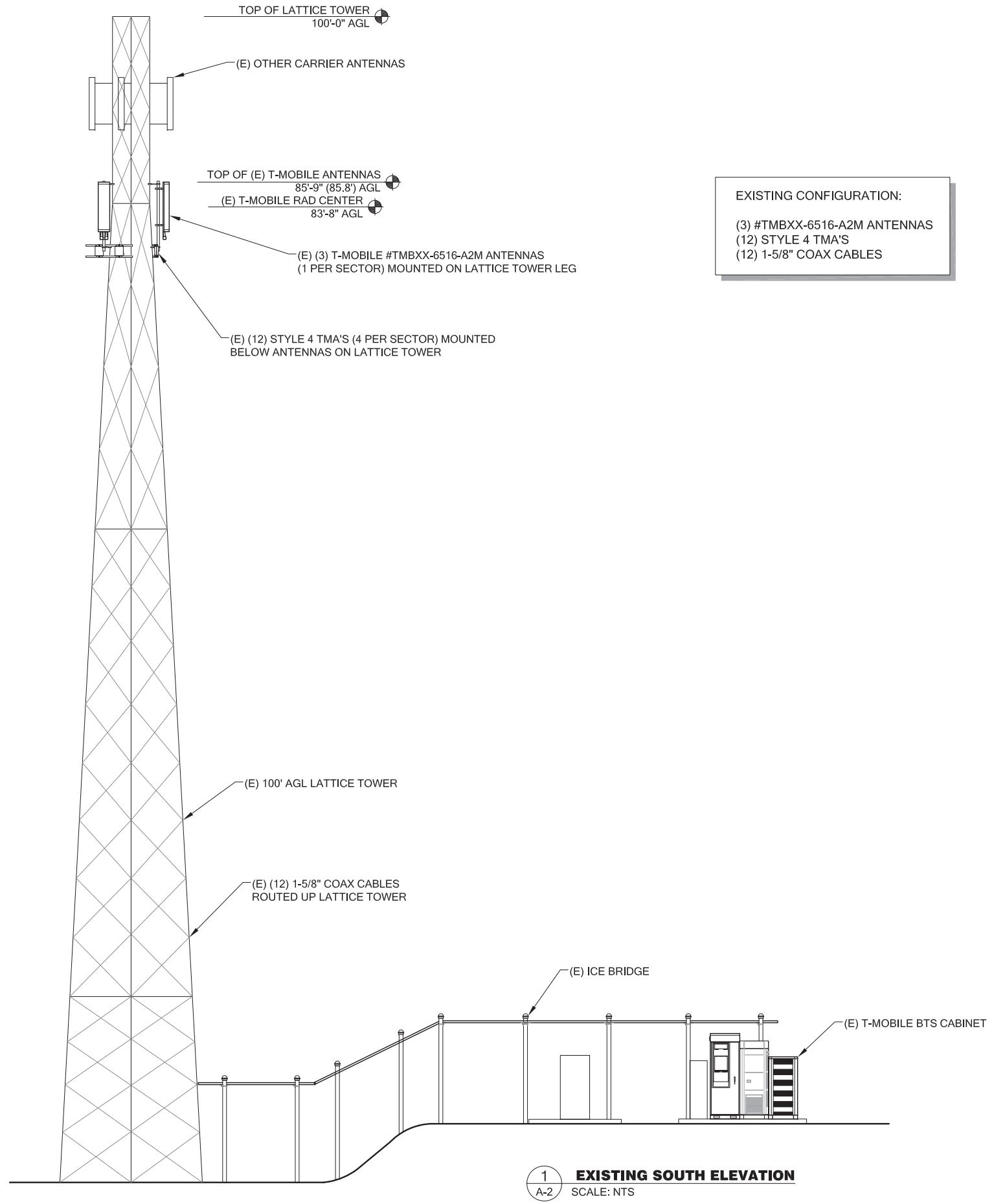
**PROPOSED
ENLARGED
SITE PLAN**

DRAWING NUMBER:

A-1.2



PROPOSED ENLARGED SITE PLAN
22x34 SCALE: 3/8" = 1'
11x17 SCALE: 3/16" = 1'



EXISTING CONFIGURATION:
 (3) #TMBXX-6516-A2M ANTENNAS
 (12) STYLE 4 TMA'S
 (12) 1-5/8" COAX CABLES

1
 A-2 **EXISTING SOUTH ELEVATION**
 SCALE: NTS



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2	9/12/2018	REVISED PER REDLINES	BJT
1	7/6/2018	ISSUED DESIGN REVIEW	BJT

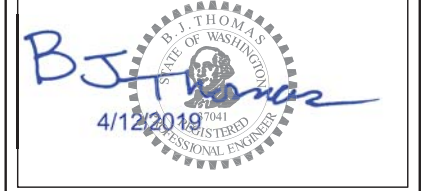
PLANS PREPARED BY:

B. J. THOMAS, P.E.
 7607 80TH AVE NE
 MARYSVILLE, WA 98270
 206-851-1106

DRAWN BY: CHK. BY:

JL BJ

LICENSURE:



DRAWING INFORMATION:

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DRAWING TITLE:

**EXISTING SITE
 ELEVATION**

DRAWING NUMBER:

A-2

PROJECT INFORMATION:

**MERCER ISLAND WT
SE02629A**

**4350 88TH AVE SE
MERCER ISLAND, WA 98040**

ISSUED FOR:

BUILDING PERMIT

REVISION HISTORY:

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PLANS PREPARED BY:

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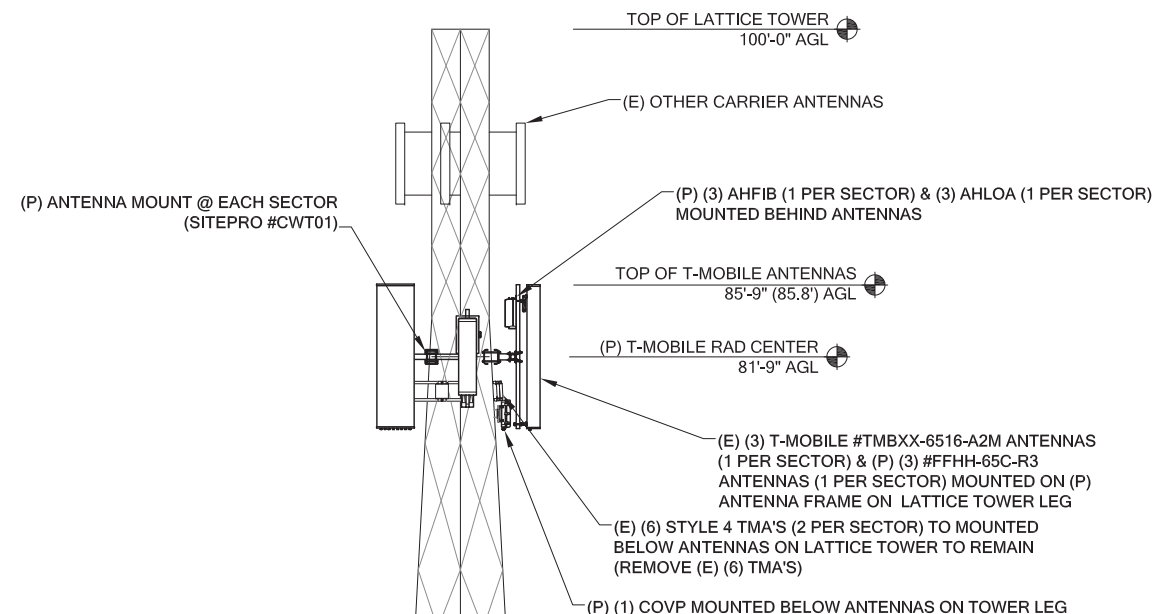
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DRAWING TITLE:

**PROPOSED SITE
ELEVATION**

DRAWING NUMBER:

A-2.1



FINAL CONFIGURATION:

- (3) #TMBXX-6516-A2M ANTENNAS
- (3) #FFHH-65C-R3 ANTENNAS
- (6) STYLE 4 TMA'S
- (3) AHFIB
- (3) AHLOA
- (1) COVP
- (3) T-ARM ANTENNA MOUNTS (SITEPRO #CWT01)
- (1) 125' HI-CAP HYBRID CABLE
- (6) 1-5/8" COAX CABLES

(E) 100' AGL LATTICE TOWER

(P) (1) 125' HIGH CAP HYBRID CABLE & (E) (6) 1-5/8" COAX CABLES ROUTED UP LATTICE TOWER (REMOVE (E) 1-5/8" COAX CABLES)

(E) ICE BRIDGE

(E) T-MOBILE BTS CABINET (REPLACE (E) ULTRASITE W/ (P) FCOA)

1 **PROPOSED SOUTH ELEVATION**
A-2.1 SCALE: NTS

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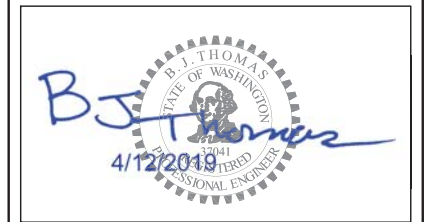
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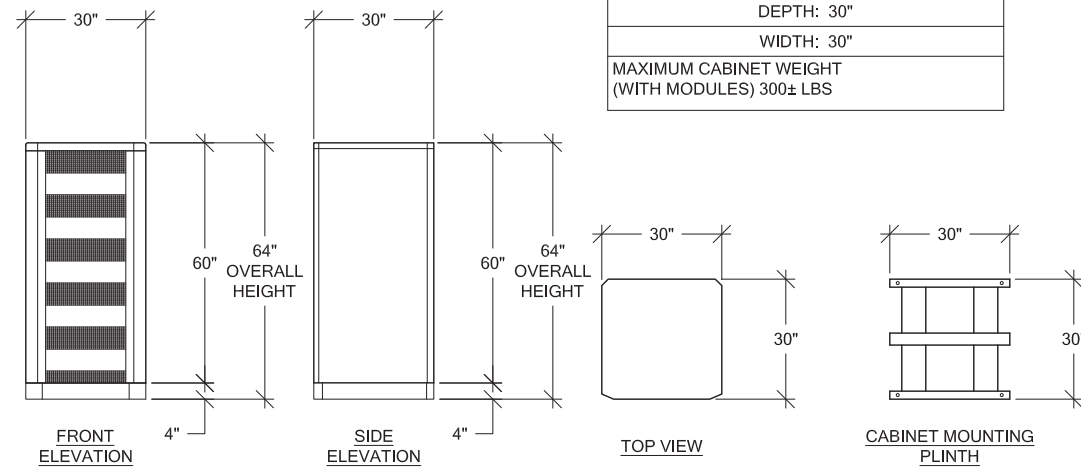
DRAWING TITLE:

**BTS EQUIPMENT
DETAILS**

DRAWING NUMBER:

A-3

FCOA DIMENSIONS	
MANUFACTURER:	NOKIA SIEMENS
HEIGHT:	60"
DEPTH:	30"
WIDTH:	30"
MAXIMUM CABINET WEIGHT (WITH MODULES) 300± LBS	



1 **NOKIA SIEMENS FLEXI FCOA SPECIFICATION**
A-3 SCALE: NTS

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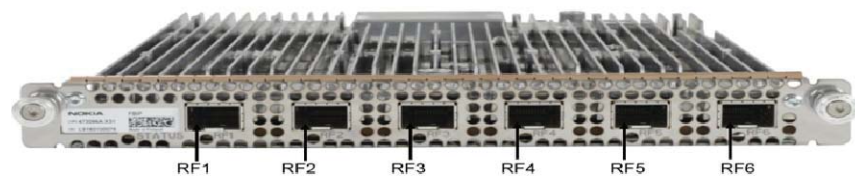
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GENERAL DETAILS

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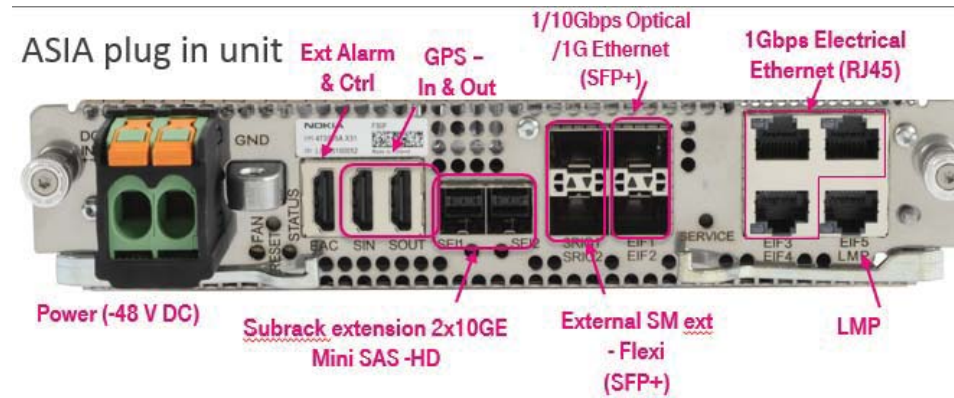
A-4

MANUFACTURER: NOKIA
MODEL: ABIA AIR SCALE
DIMENSION (HxWxD) 1.9" x 8.3" x 14.8"
WEIGHT: 4.63 LBS



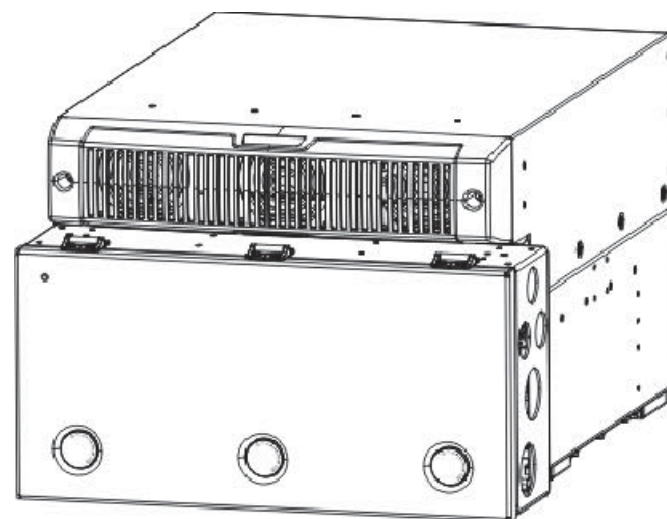
1 ABIA DETAIL
A-4 SCALE: NTS

MANUFACTURER: NOKIA
MODEL: ASIA AIR SCALE
DIMENSION (HxWxD) 1.9" x 8.3" x 14.8"
WEIGHT: 6.83 LBS



2 ASIA DETAIL
A-4 SCALE: NTS

MANUFACTURER: NOKIA
MODEL: AMOB AIRSCALE SUBRACK
POWER INPUT: -48 V DC
DIMENSION (HxWxD) 12.2" x 17.6" x 23.8"
WEIGHT: 50.7 LBS



3 AMOB DETAIL
A-4 SCALE: NTS



AMOB/FCOA install

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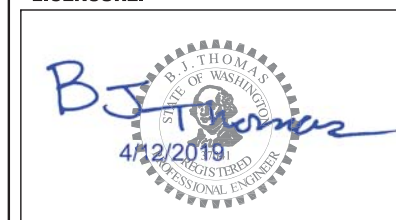
PLANS PREPARED BY:

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206-851-1106

DRAWN BY: CHK. BY:

JL BJ

LICENSURE:



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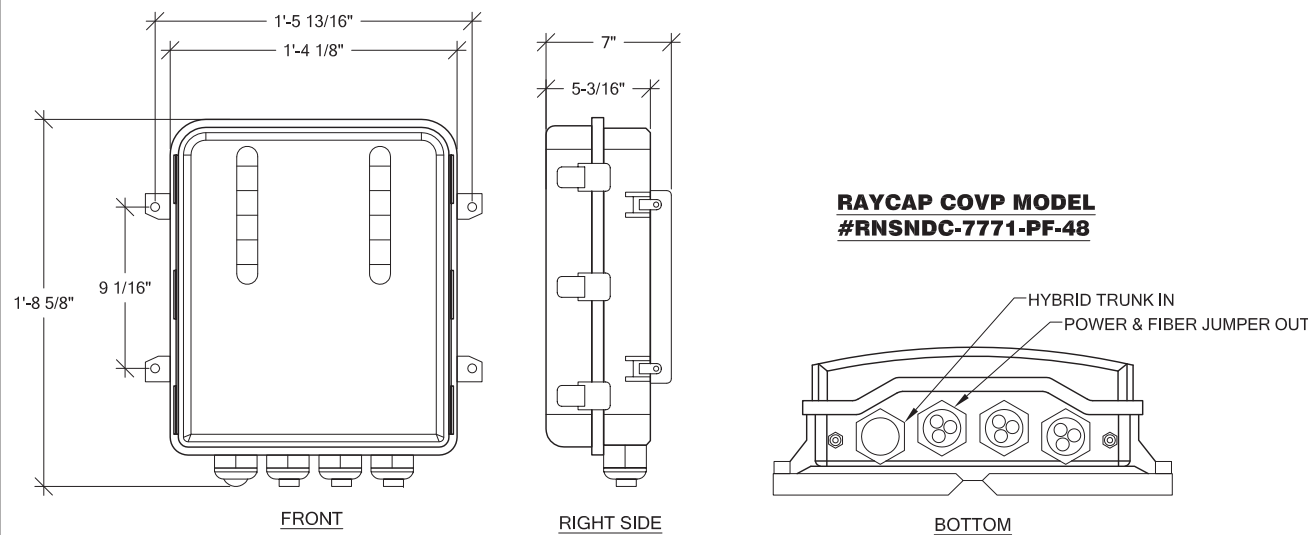
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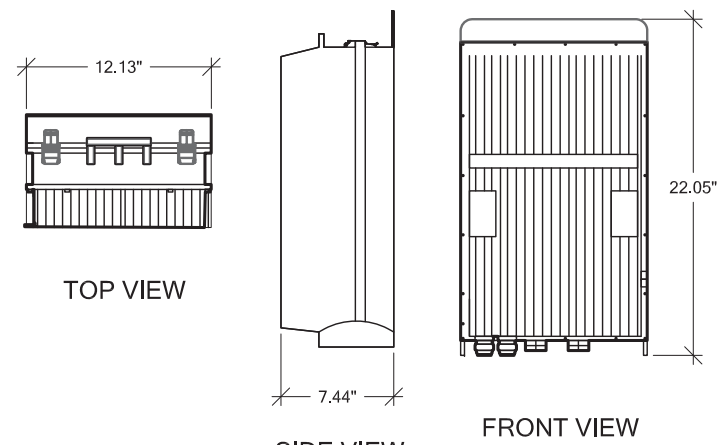
A-5



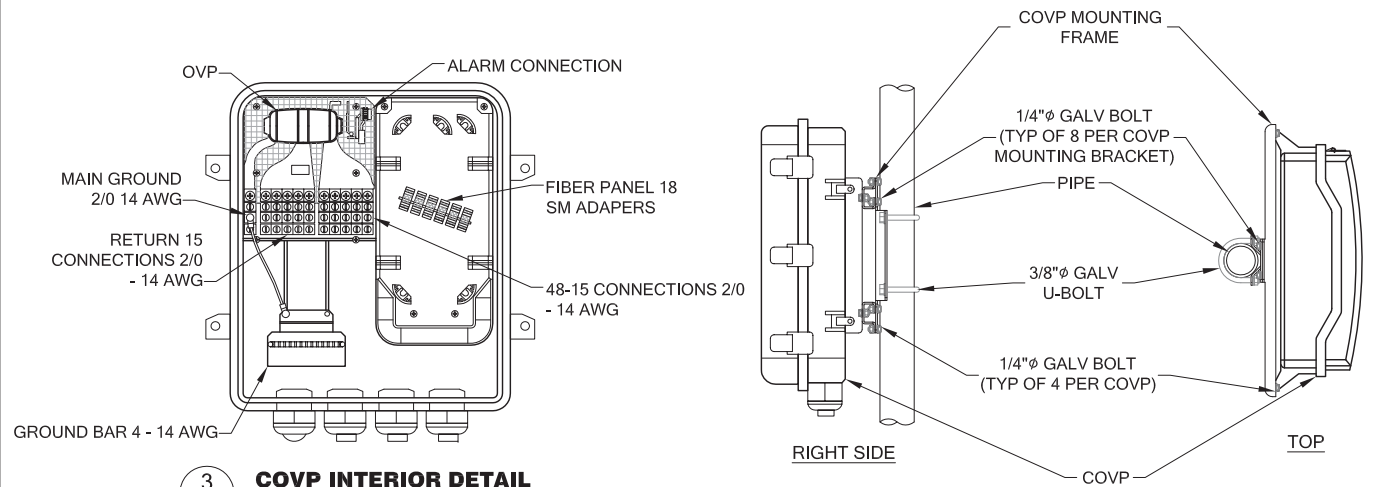
1 RAYCAP COVP DETAIL
A-5 SCALE: NTS

RADIO MODULE FOR 600/700MHz RRH

MANUFACTURER:	NOKIA
MODEL:	AHLOA
FREQUENCY RANGE:	TBD
POWER CONNECTOR:	TBD
SUPPLY VOLTAGE:	TBD
INPUT VOLTAGE RANGE:	TBD
EXTENDED INPUT VOLTAGE:	TBD
NET WEIGHT:	83.78 LBS
DIMENSION (LxWxD)	22.05" x 12.13" x 7.44"

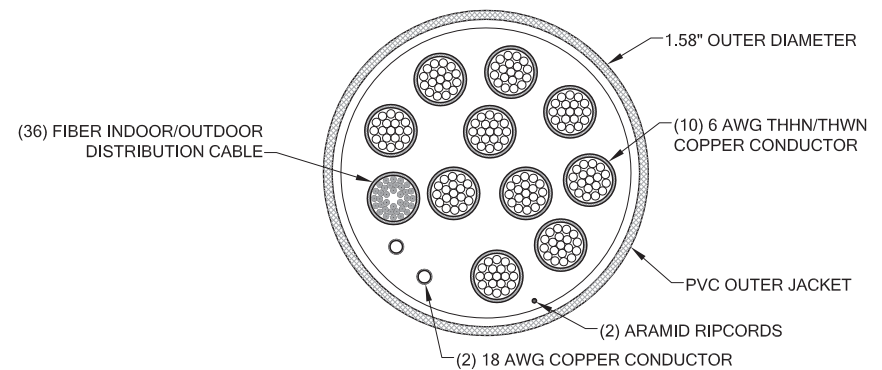


2 AHLOA DETAIL
A-5 SCALE: NTS



HYBRID CABLE

STRUCTURE	# OF CABLES	LENGTH
LATTICE TOWER	1	125'



5 HYBRID CABLE DETAIL
A-5 SCALE: NTS



Product name	AirScale Dual RRH 4T4R B25/66 320W, AHFIB - 474216A
Supported Frequency bands	3GPP Bands 25 and 66
Frequencies	Band 25: DL 1930-1995MHz, UL 1850-1915MHz Band 66: DL 2110-2200MHz, UL 1710-1780MHz
Number of TX/RX ports	4/4
Instantaneous Bandwidth IBW	Band 25/ Band 66 - full band
Occupied Bandwidth OBW	Band 25: full band, Band 66: 80MHz
Output Power	40W per band, 80W per TX
Supply Voltage/ Voltage Range	DC-48 V / -36V to -60V
Typical Power Consumption	525W (ETSI 24h Avg - 4x20W per band, 40W per TX port)
Antenna Ports	4 ports, 4.3-10+
Optical Ports	2 x CPRI 9.8 Gbps
ALD Control Interfaces	AISG3.0 from ANT 1,2,3,4 and RET (Power supply ANT1 and ANT3)
Other Interfaces	External Alarm MDR-26 Serial connector (4 inputs, 1 Output) DC Circular Power Connector
Operational Temperature Range	-40°C to 55°C (with no solar load)
Dimensions (mm) HxWxD	560x308x149 mm (without covers or mounting bracket)
Volume (liters)	< 26 (without covers or mounting bracket)
Weight (kg)	< 30 (without covers or mounting bracket)
Ingress protection class	IP65
Installation options	Pole, Wall, Book mount, Vertical wall/pole, Horizontal wall
Surge protection	Class II 5kA

6 AHFIB DETAIL
A-5 SCALE: NTS

PROJECT INFORMATION:

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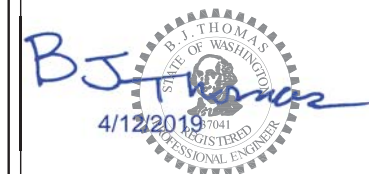
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MARYSVILLE, WA 98270
206-851-1106

DRAWN BY: CHK. BY:

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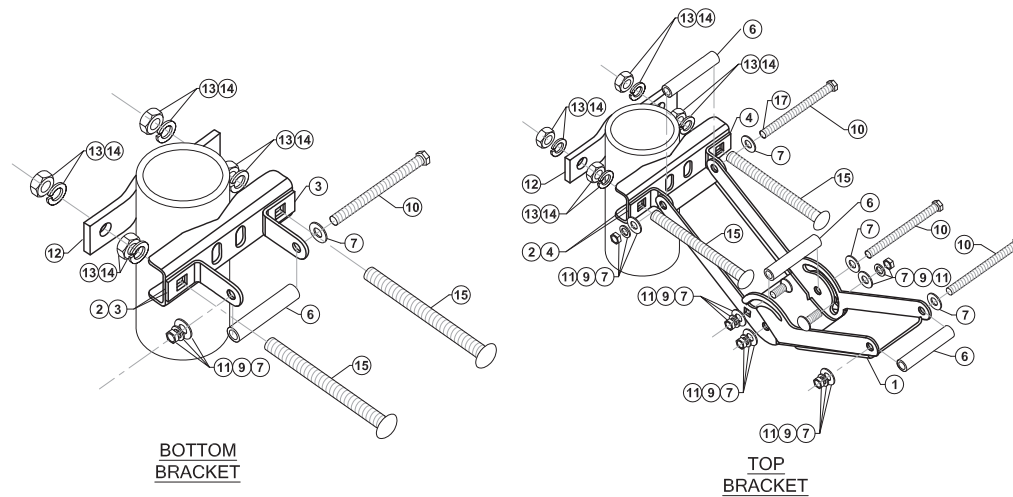
DRAWING TITLE:

GENERAL DETAILS

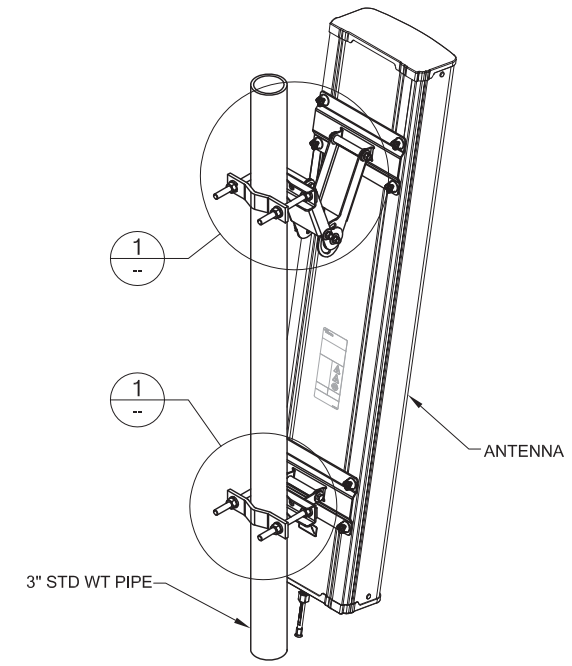
DRAWING NUMBER:

A-6

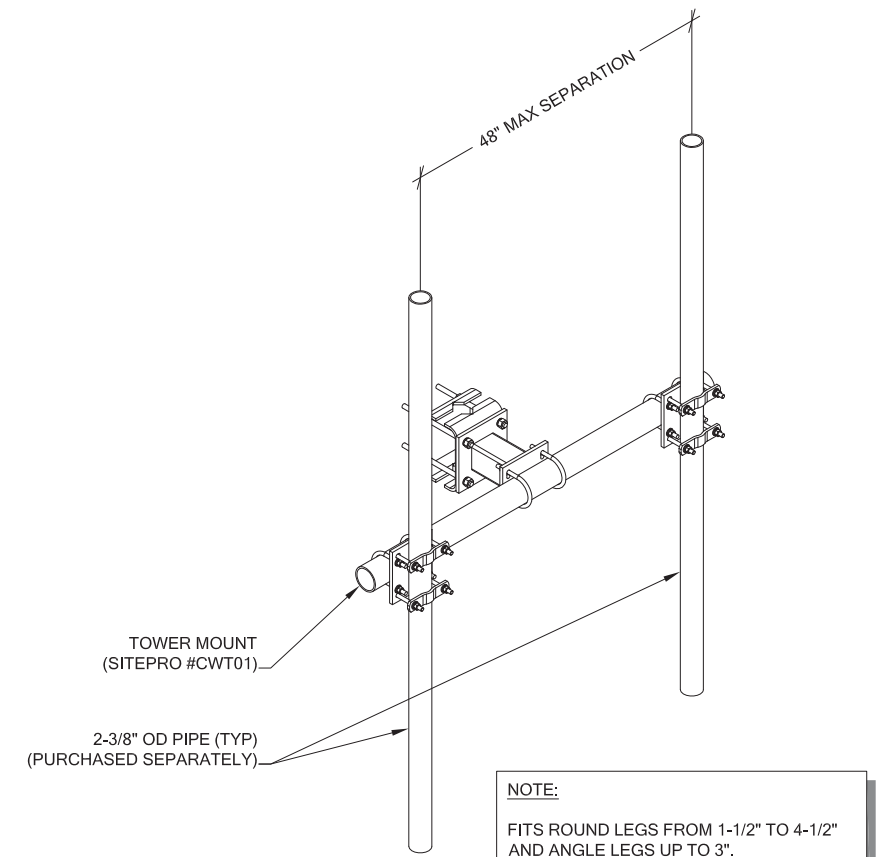
ITEM #	QUANTITY	PART NUMBER	DESCRIPTION
1	2	601257	ANGLE ARM
2	2	601256	MOUNTING CLAMP
3	2	601235-1	BRACKET
4	2	601235-2	BRACKET
5	1	601258	LABEL, ANGLE
6	4	600679-3	SPACER TUBE
7	14	100525-24	ME FLAT WASHER (STAINLESS STEEL)
8	2	600419-8	M8x1.25x25mm LARGE CARRIAGE BOLT (STAINLESS STEEL)
9	6	6/1/7395	M8 LOCK WASHER (STAINLESS STEEL)
10	4	600419-10	M8x1.25x110mm LARGE HEX HEAD SCREW (STAINLESS STEEL)
11	6	204001-15	M8x1.25 HEX NUT (STAINLESS STEEL)
12	2	225244	CLAMP PLATE
13	8	600419-24	LARGE LOCK WASHER (STAINLESS STEEL)
14	8	204001-21	M12x1.75 HEX NUT (STAINLESS STEEL)
15	4	600419-12	M12x1.75x150mm LARGE CARRIAGE BOLT (STAINLESS STEEL)
17	1	601584	MOLYBDENUM DISULFIDE GREASE



1 ANTENNA BRACKET ATTACHMENT DETAIL
A-6 SCALE: NTS



2 ANTENNA ATTACHMENT DETAIL
A-6 SCALE: NTS



3 DUAL ANTENNA TOWER MOUNT ASSEMBLY DETAIL
A-6 SCALE: NTS

NOTE:
FITS ROUND LEGS FROM 1-1/2" TO 4-1/2" AND ANGLE LEGS UP TO 3". (LARGE LEG ADAPTER KIT AVAILABLE FOR LARGER LEGS, #CWT01-LL)
16-1/2" FROM ANTENNA MOUNTING PIPES TO TOWER LEG FOR STANDARD KIT AND 32-1/2" FOR LONG VERSION.
WEIGHT OF KIT IS 123 LBS.

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DRAWING TITLE:

**ELECTRICAL
GROUNDING PLAN**

DRAWING NUMBER:

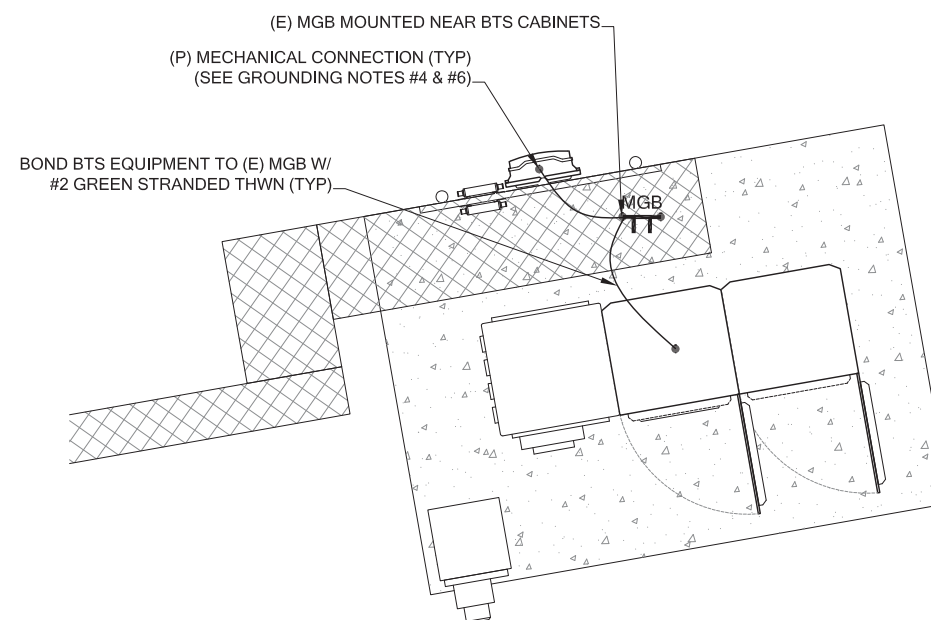
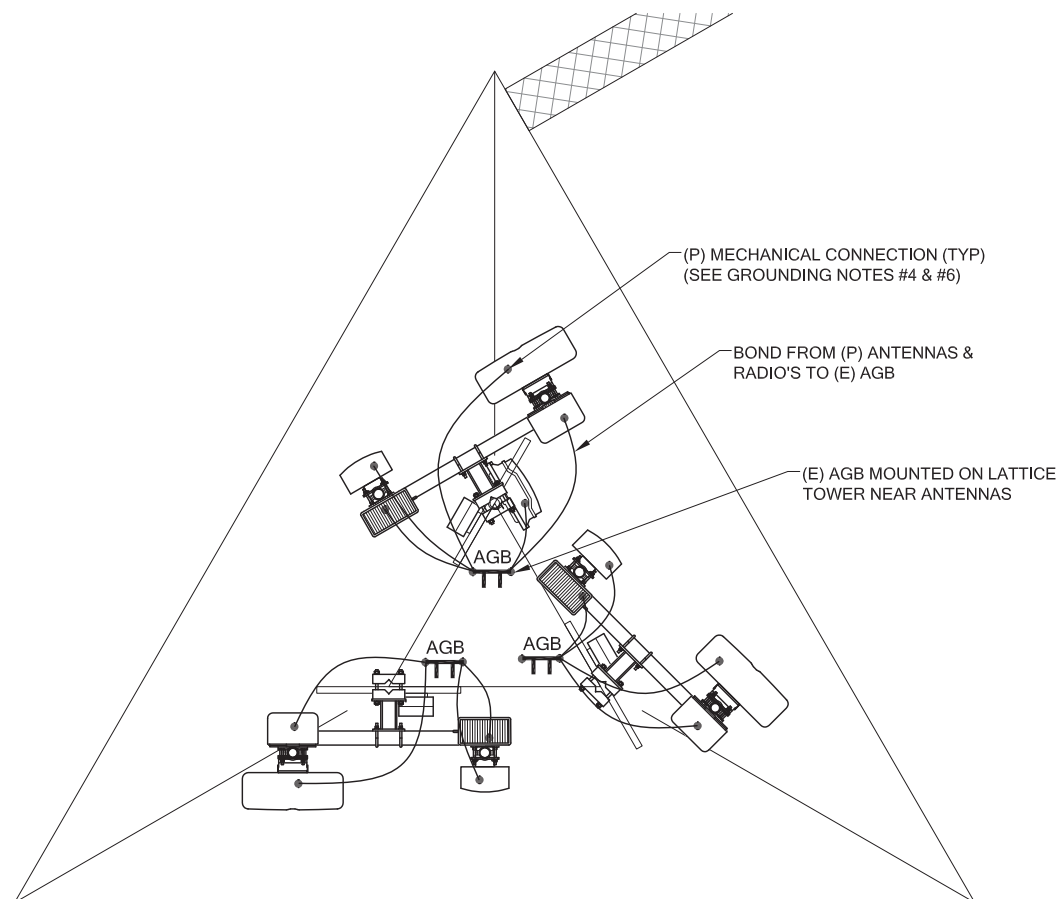
E-1

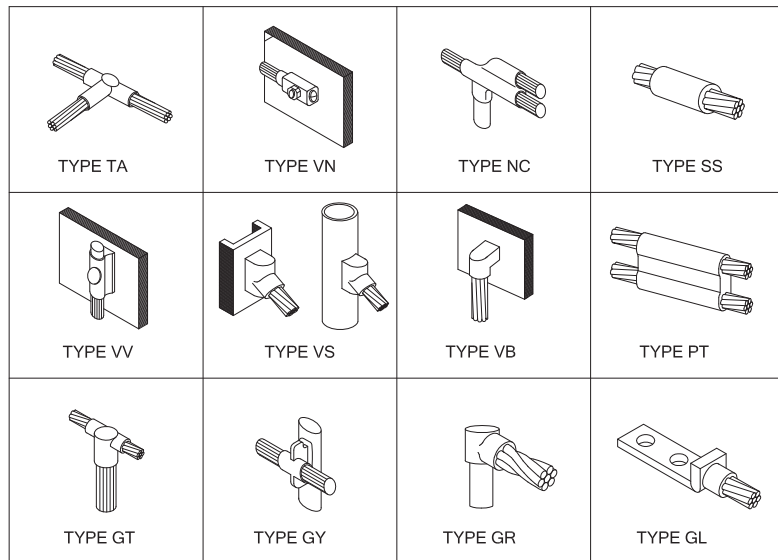
SYMBOL LEGEND:

- MGB
TT MASTER GROUND BAR 1/4"x4"x24" COPPER
- AGB
TT ACCESSORY GROUND BAR 1/4"x4"x12" OR 1/4"x4"x20" COPPER
- EXPOSED WIRING
- - - UNDERGROUND WIRING
- CADWELD
- MECHANICAL CONNECTION

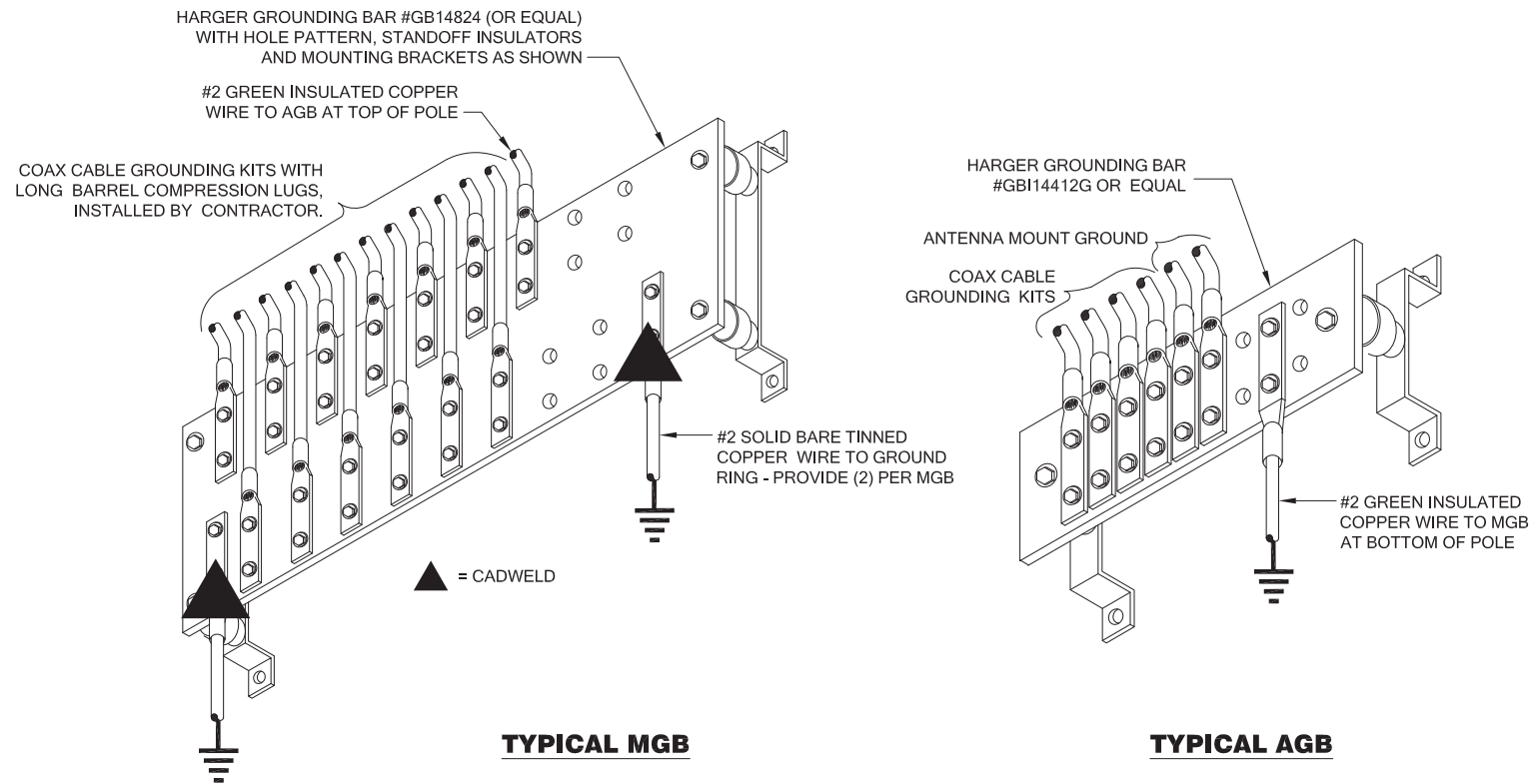
GROUNDING NOTES:

- GROUNDING SHALL COMPLY WITH LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
- MINIMUM BENDING RADIUS FOR GROUND CONDUCTOR IS 8".
- NO SPLICES PERMITTED IN GROUND CONDUCTORS.
- ALL GROUNDING CONNECTORS TO BE CLEAN AND FREE OF PAINT AT THEIR MATING SURFACES AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. USE PENETROX OR EQUIVALENT ANTIOXIDANT GREASE.
- ALL GROUND BAR CONNECTIONS ARE TO BE 2 HOLE LUG COMPRESSION TYPE. STACKED CONNECTIONS ARE NOT ACCEPTABLE. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BAR WILL BE PERMITTED.
- ENSURE ALL MECHANICAL CONNECTORS ARE TORQUED TO THE MANUFACTURER'S SPECIFIED VALUES.
- MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED A RESISTANCE OF 5 OHMS TO EARTH.
- GROUND WIRES SHALL NOT BE INSTALLED THROUGH HOLES IN ANY METAL OBJECTS OR SUPPORTS; TO PRECLUDE ESTABLISHING A "CHOKE" POINT.
- GROUND BARS SHALL NOT BE FIELD MODIFIED.
- A CERTIFIED CONTRACTOR WILL MAKE ALL MEASUREMENTS REQUIRED TO TEST THE GROUNDING SYSTEM USING A MEGGER OR EQUIVALENT. THE ACCEPTABLE RESISTANCE MEASURED FOR THE GROUNDING SYSTEM WILL NOT EXCEED 5 OHMS RESISTANCE. THREE DISTANCES SHALL BE USED: 1 AT 100 FEET, 1 AT 70 FEET, AND 1 AT 35 FEET. THESE DISTANCES ARE SUBJECT TO A SITE BY SITE BASIS. T-MOBILE-WTS SHALL BE GIVEN 24 HOURS NOTICE. ALL COSTS ASSOCIATED WITH GROUND TESTING WILL BE AT THE EXPENSE OF THE CONTRACTOR.

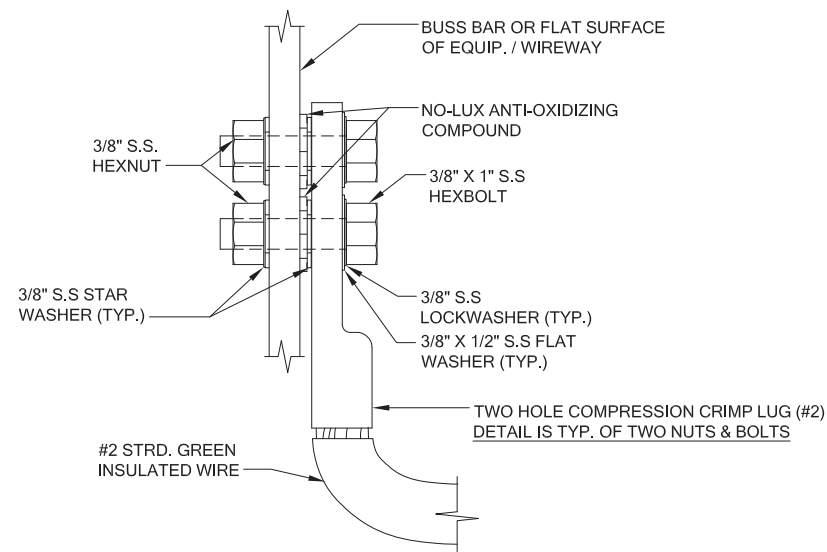




1
E-2 **TYPICAL CADWELD CONNECTIONS**
N.T.S.



2
E-2 **GROUND BAR DETAILS**
N.T.S.



- NOTES**
1. TYP. ALL GROUND WIRES FOR ELECT. AND OTHER EQUIPMENT.
 2. THE ENTIRE LUG AND AREA TO BE SPRAYED WITH CLEAR LAQUER OR COLD GALVANIZING SPRAY
 3. GROUND LEADS TO BE CADWELDED TO GROUND RING.

3
E-2 **TYPICAL CABINET GROUNDING DETAIL**
N.T.S.

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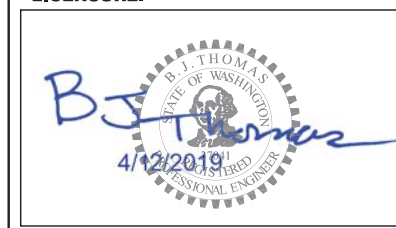
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DRAWING TITLE:

**ELECTRICAL
GROUNDING
DETAILS**

DRAWING NUMBER:

E-2

SITE LOADING CHART

SECTOR	COLOR	ANTENNA MODEL #	VENDOR	AZIMUTH (TN)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	RADIATION CENTER	HYBRID CABLE LENGTH	COAX CABLES
ALPHA	RED	TMBXX-6516-A2M FFHH-65C-R3	ANDREW COMMSCOPE	45°	0° 0°	TBD	81'-9" AGL	(1) 125' HI-CAP	(2) 1-5/8"
BETA	GREEN	TMBXX-6516-A2M FFHH-65C-R3	ANDREW COMMSCOPE	180°	0° 0°	TBD	81'-9" AGL		(2) 1-5/8"
GAMMA	BLUE	TMBXX-6516-A2M FFHH-65C-R3	ANDREW COMMSCOPE	330°	0° 0°	TBD	81'-9" AGL		(2) 1-5/8"

ANTENNA AND COAX GENERAL NOTES:

- ALL ANTENNA AND COAXIAL ANTENNA CABLE TO BE FURNISHED BY T-MOBILE AND INSTALLED BY CONTRACTOR.
- COAX COLOR CODING: ANTENNAS TO BE NUMBERED IN A CLOCKWISE MANNER FROM TRUE NORTH AND COLOR CODED AS FOLLOWS:
- THE ABOVE COAX COLOR CODING APPLIES TO SECTORIZED SITES. FOR OMNI SITES, USE THE AT0, BT0, & GT0 COLOR CODES ONLY.
- COAX SHALL BE TAGGED WITH COLOR CODING AT (2) PLACES USING 1" WIDE WEATHER PROOF COLORED VINYL TAPE AT THE FOLLOWING LOCATIONS:
 - #1 - AT ANTENNA CONNECTION
 - #2 - AT ENTRY TO EQUIPMENT CABINET
- RUN COAXIAL CABLE WITH MINIMUM 12" SLACK & 12" FROM EDGE OF EQUIPMENT CABINETS, ACROSS WAVE GUIDE BRIDGE (IF APPLICABLE), UP TO TOWER LEG (IF APPLICABLE), & DISTRIBUTE TO EACH ANTENNA DEVICE. FURNISH AND INSTALL A MINIMUM OF (3) GROUND KITS PER COAXIAL CABLE ACCORDING TO ELECTRICAL DRAWINGS. VERIFY NUMBER OF ANTENNAS, CABLE, & CABLE DIAMETER WITH PROJECT MANAGER.



PROJECT INFORMATION:

**MERCER ISLAND WT
SE02629A**

4350 88TH AVE SE
MERCER ISLAND, WA 98040

ISSUED FOR:

BUILDING PERMIT

REVISION HISTORY:

NO.	DATE:	DESCRIPTION:	CHK. BY:
5			
4	4/12/2019	STRUCTURAL UPGRADE SHEETS ADDED	BJT
3	2/11/2019	REVISED PER RFDS	BJT
2	9/12/2018	REVISED PER REDLINES	BJT
1	7/6/2018	ISSUED DESIGN REVIEW	BJT

PLANS PREPARED BY:

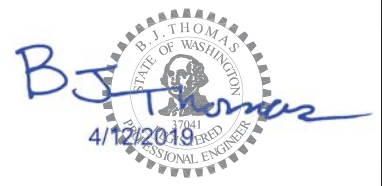
B. J. THOMAS, P.E.
7607 80TH AVE NE
MARYSVILLE, WA 98270
206-851-1106

DRAWN BY: CHK. BY:

JL

BJ

LICENSURE:



DRAWING INFORMATION:

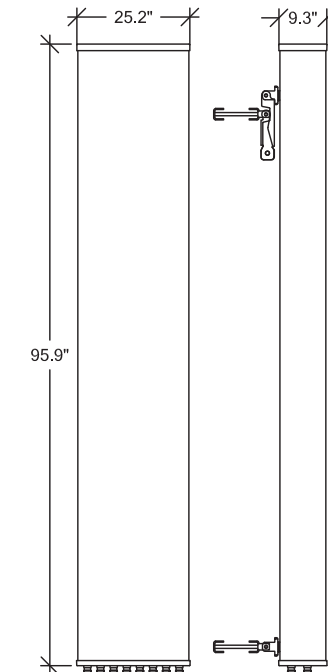
DO NOT SCALE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ADVISE CONSULTANTS OF ANY ERRORS AND OMISSIONS. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN WHICH IS RELATED TO NAMED CLIENT IS STRICTLY PROHIBITED.

DRAWING TITLE:

RF DETAILS

DRAWING NUMBER:

RF-1

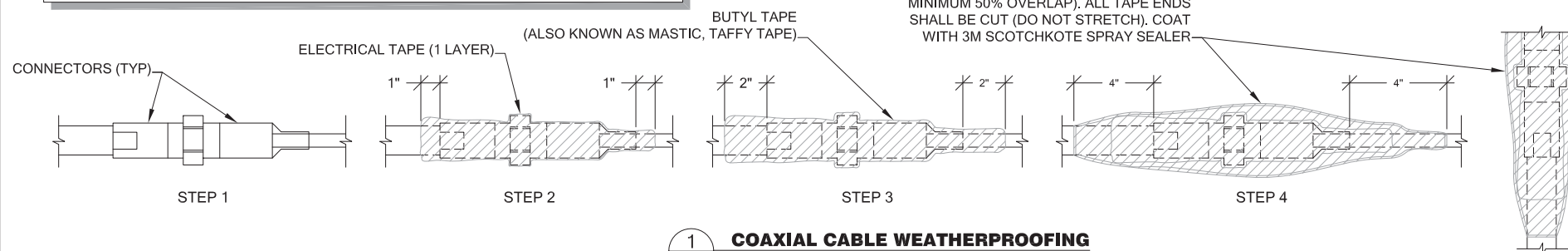


COMMSCOPE ANTENNA DATA				
MECHANICAL SPECIFICATIONS				
PART NUMBER	HEIGHT	WIDTH	DEPTH	WEIGHT
FFHH-65C-R3	95.9 in	25.2 in	9.3 in	127.6 lbs
CONNECTORS	STANDARD MOUNTING HARDWARE			
(8) 7-16 DIN	INCLUDED			
ELECTRICAL SPECIFICATIONS				
FREQUENCY	POLARIZATION	GAIN	AZIMUTH B.W.	
617-2360 MHz	±45°	15.8-19.6 dBi	55° - 67°	
	VSWR	MAX INPUT POWER	ELEVATION B.W.	
	<1.5:1	300 WATTS	4.4° - 10.2°	

NOTE:

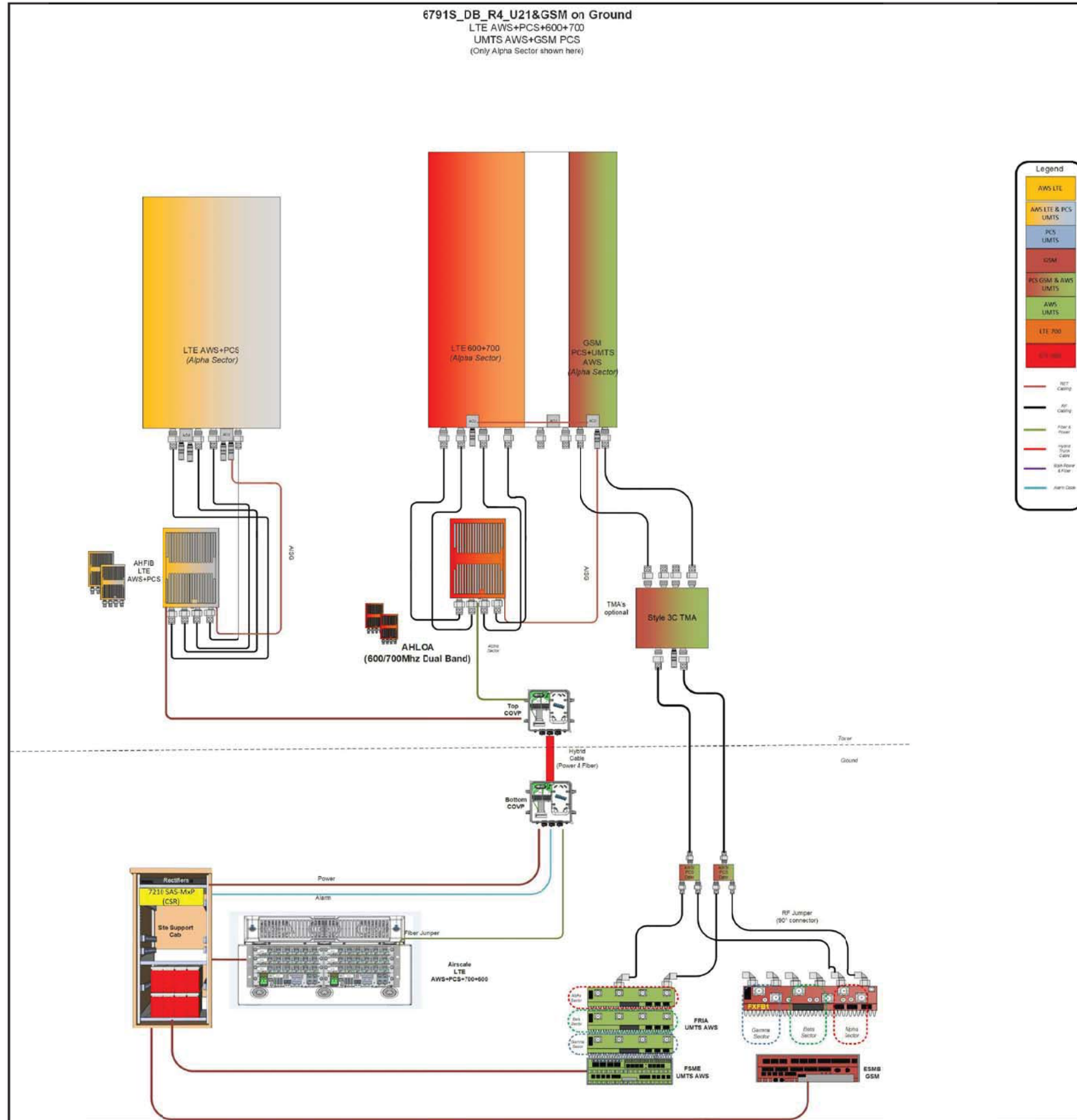
- ALL COAXIAL CABLE CONNECTIONS TO BE WEATHER PROOFED.
- CONTRACTOR TO DIP CABLES AND JUMPERS WHERE NECESSARY.
- TAGGING:
 - ALL COAXIAL CABLES TO BE MARKED WITH COLOR CODED TAPE TO INDICATE THE ANTENNA SECTOR.
 - COLORED ELECTRICAL TAPE SHALL MARK EACH END OF CABLE AND EACH END OF JUMPERS AS CLOSE TO EACH END AS POSSIBLE. (NOT TO INTERFERE WITH WEATHERPROOFING.)
- COAXIAL CABLE SPECIFICATIONS REQUIRE CABLE SUPPORT EVERY 3'-0" ON CENTER. CONTRACTOR SHALL SUPPLY SUPPORTS AS REQUIRED TO MEET THIS REQUIREMENT.
- VERTICAL CONNECTIONS SHALL BE TAPED FROM THE BOTTOM UP SO OVERLAP MOVES WATER AWAY FROM CONNECTION. (SEE STEP 4.)
- PROVIDE HEAT SHRINK IN PLACE OF TAPE FOR QUAD POLES AND TMA'S. HEAT SHRINK SHALL BE "CANUSA" WITH ADHESIVE.

ELECTRICAL TAPE: 3 LAYERS WITH 2" TAPE AND 3 LAYERS IN 3/4" TAPE (ALL WITH MINIMUM 50% OVERLAP). ALL TAPE ENDS SHALL BE CUT (DO NOT STRETCH). COAT WITH 3M SCOTCHKOTE SPRAY SEALER



1 COAXIAL CABLE WEATHERPROOFING
RF-1 SCALE: NTS

6791S_DB_R4_U21_GSM on Ground.jpg



Notes:



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PLANS PREPARED BY:

B. J. THOMAS, P.E.
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DRAWING TITLE:

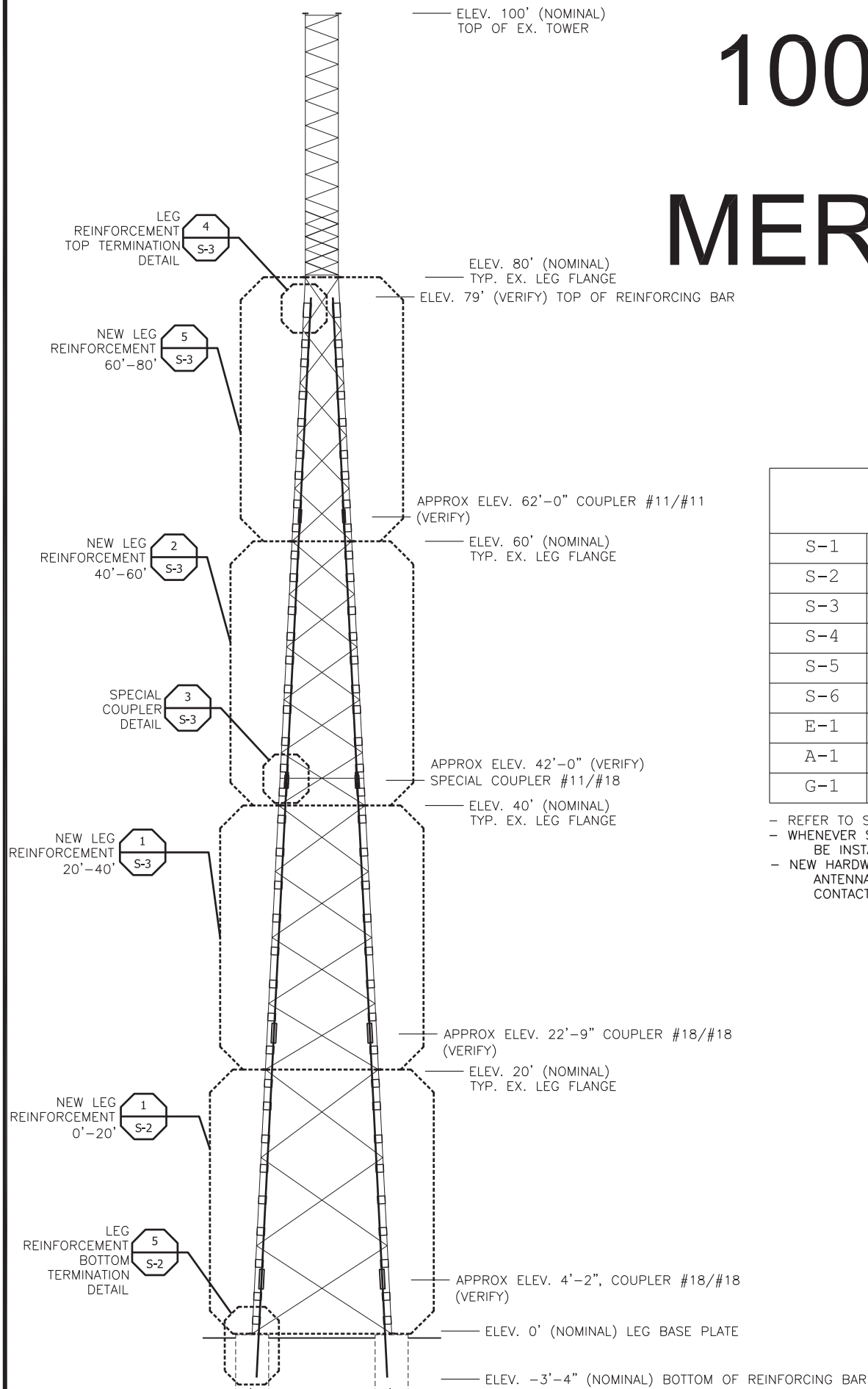
RF DETAILS

DRAWING NUMBER:

RF-2

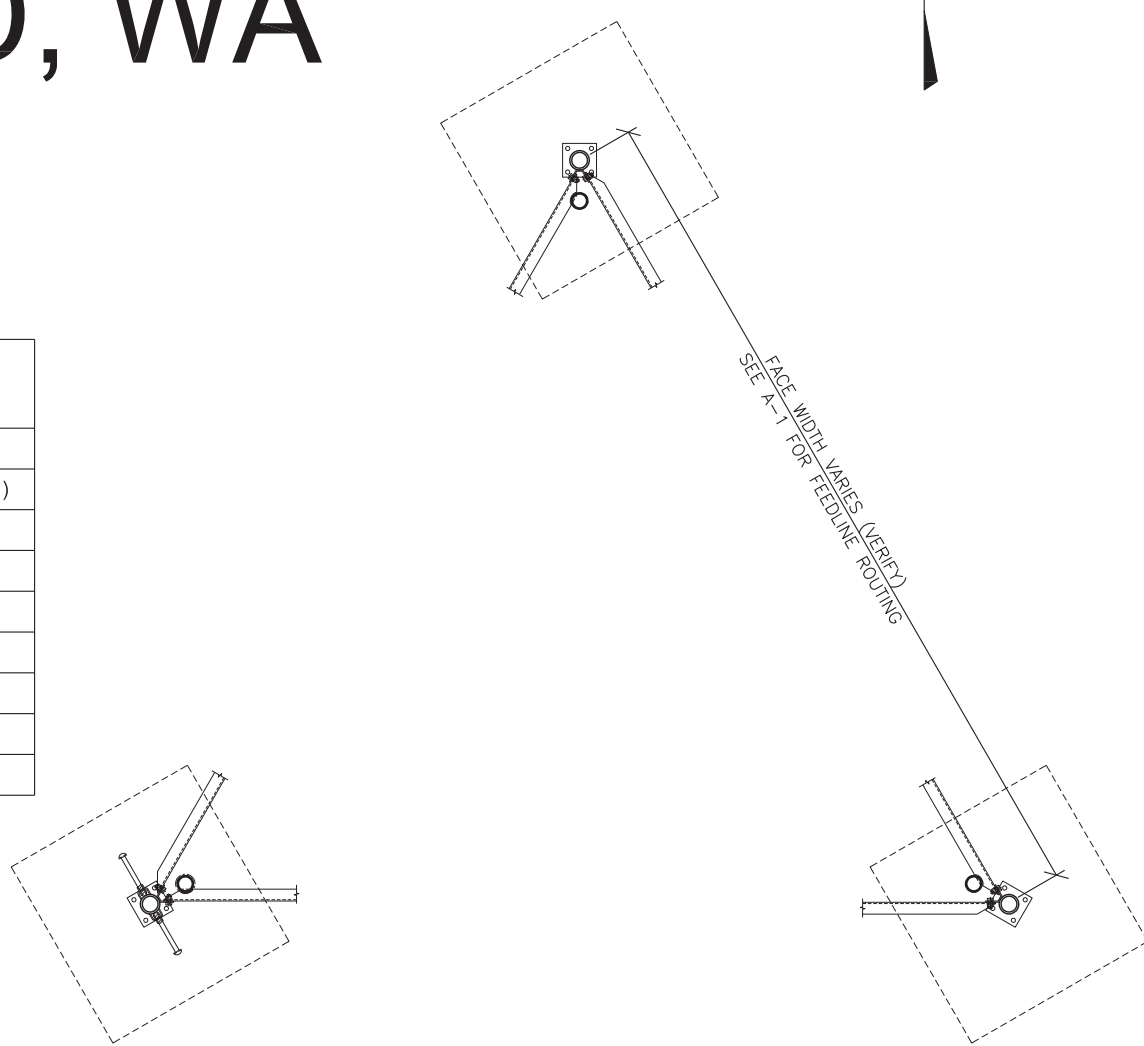
100-FT SS TOWER SE02629A MERCER ISLAND, WA

TAEC / T-MOBILE



SHEET INDEX	
S-1	COVER SHEET, PLAN & ELEVATION
S-2	LEG REINFORCEMENT ASSEMBLY (0'-20' & 20'-40'SIM.)
S-3	LEG REINFORCEMENT ASSEMBLY (40'-60 & 60'-80')
S-4	LEG REINFORCEMENT PART DETAILS
S-5	NEW MEMBERS PART CHARTS
S-6	SPECIAL INSPECTIONS AND STRUCTURAL OBSERVATIONS
E-1	TOWER MEMBERS AND EQUIPMENT (RISATOWER M.T.O.)
A-1	FEED LINE CROSS SECTION (8.5" x 11")
G-1	GENERAL NOTES

- NOTE:
- REFER TO STRUCTURAL ANALYSIS REPORT No. 191538.05 REV1
 - WHENEVER STRUCTURAL MODIFICATIONS ARE PERFORMED, TEMPORARY SUPPORTS MUST ALWAYS BE INSTALLED FIRST BEFORE STRUCTURAL MEMBERS ARE REMOVED.
 - NEW HARDWARE MAY REQUIRE MODIFICATIONS TO EXISTING WAVEGUIDE LADDER, CLIMB LADDER, ANTENNAS, MOUNTS AND OTHER SUPPORTS DUE TO CONFLICTS DURING INSTALLATION. CONTACT ENGINEER IF CONFLICTS ARE ENCOUNTERED.



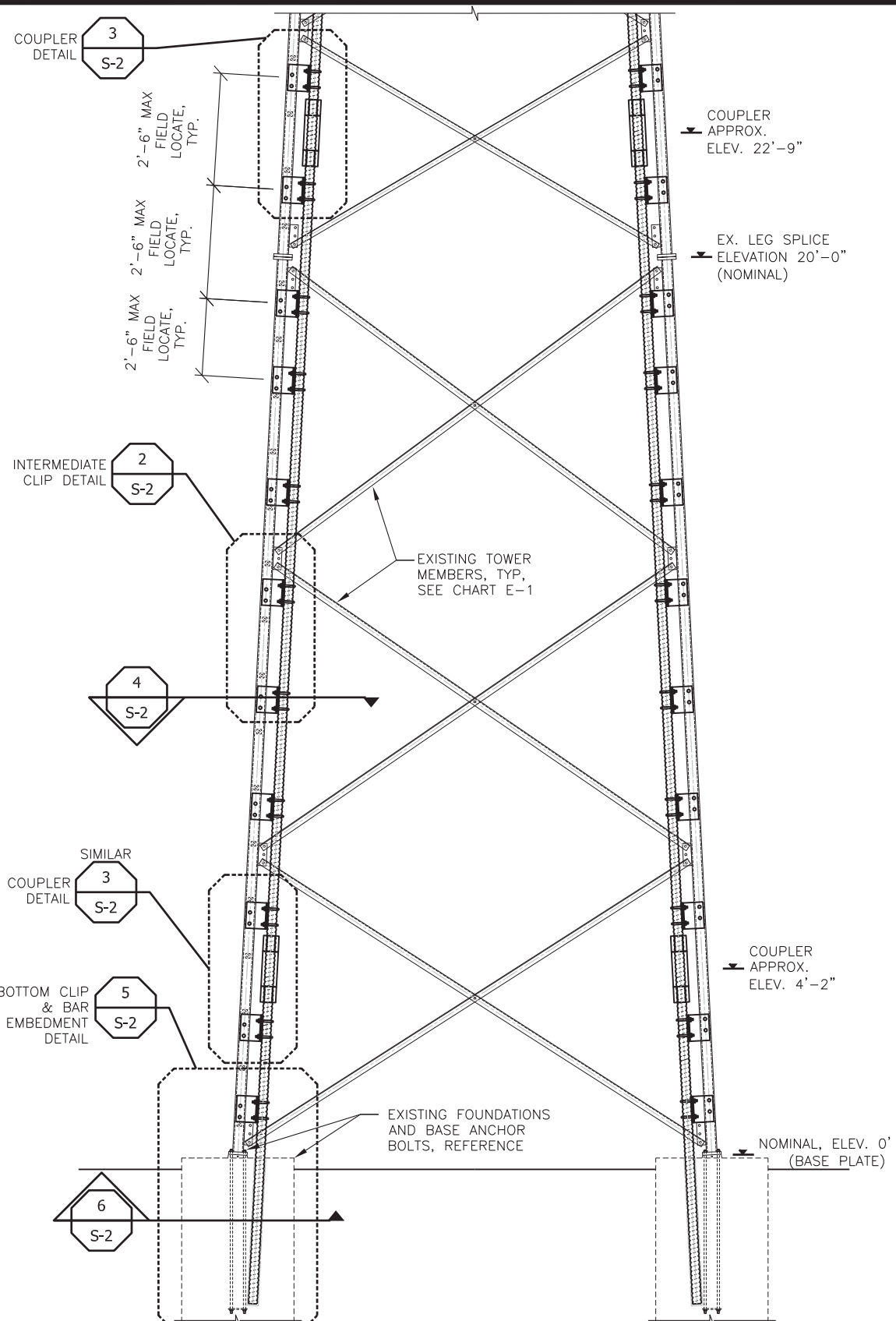
NOTE:
 - EXISTING COAX LINES & SUPPORTS, SHELTER, COMPOUND FENCE & UTILITIES NOT SHOWN, FIELD VERIFY.
 - REFER TO A-1 FOR FEED LINE ROUTING

TOWER PLAN	2
SCALE: NOT TO SCALE	S-1

TOWER ELEVATION	1
SCALE: NOT TO SCALE	S-1



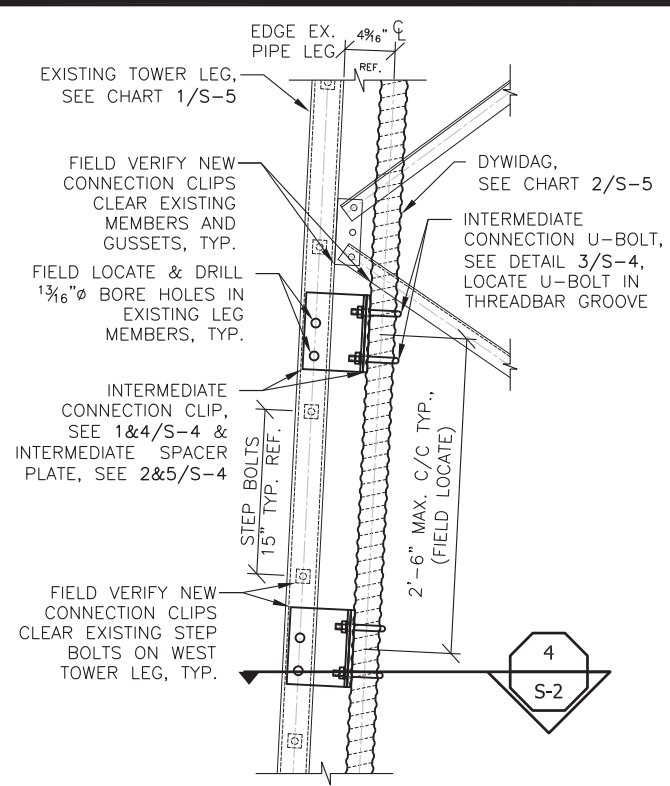
 NorthWest Tower Engineering 3426 BROADWAY, SUITE 302 EVERETT, WA 98201 PHONE: 425.258.4248 FAX: 425.258.4289	ISSUE DATE	REV NO.	REVISION DESCRIPTION	BY	
	04-08-19	0	ISSUE FINAL MODIFICATION DRAWINGS	K.P.W.	
	SHEET TITLE				
	COVER SHEET, PLAN & ELEVATION				
PROJECT TITLE & LOCATION		100-FT SELF-SUPPORTING TOWER SE02629A MERCER ISLAND, WA			
CLIENT NAME		TAEC T-MOBILE			
NOTICE NOT TO BE COPIED OR DISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF NORTHWEST TOWER ENGINEERING					
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04-08-19	K.P.W.	S.A.D.	H.S.C.	191538.06	S-1



NOTES:
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 - ALL HOLES, INCLUDING FIELD DRILLED HOLES SHALL BE DRILLED AND NOT BURNED.
 - BLIND BOLTS SHALL BE HOLLO-BOLT, MANUFACTURED BY LINDAPTER.
 - AREAS ON STRUCTURAL MEMBERS WITH FIELD DRILLED HOLES SHALL BE CLEANED AND TOUCHED UP WITH TWO COATS OF ZINC-RICH PAINT.
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LEG REINFORCEMENT ASSEMBLY, ELEVATION, 0'-20'
 SCALE: NOT TO SCALE

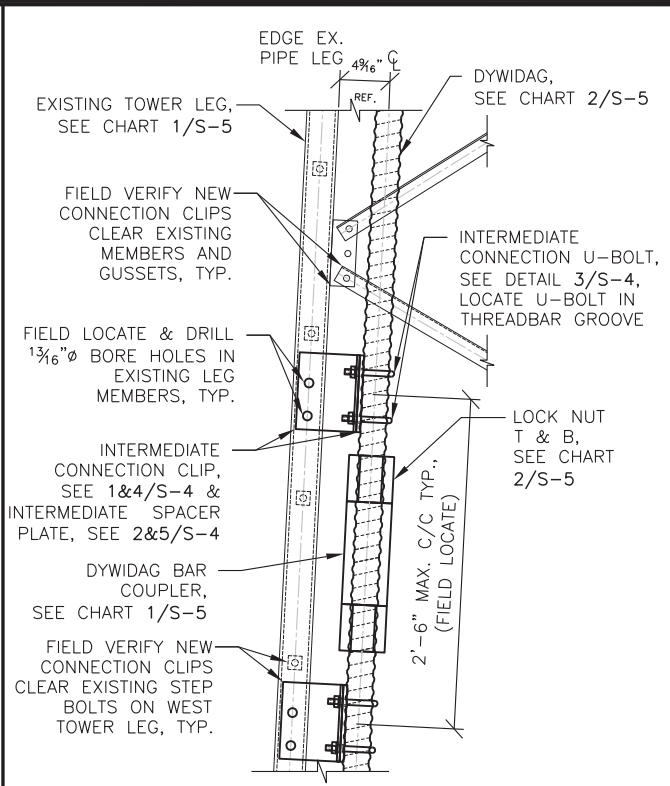
1
S-2



NOTE, FIELD MATCH ASSEMBLED CLIPS AND REINFORCING BAR TO PIPE LEG MEMBER TO LOCATE BORE HOLE LOCATIONS.

INTERMEDIATE CLIP, ELEVATION
 SCALE: NOT TO SCALE

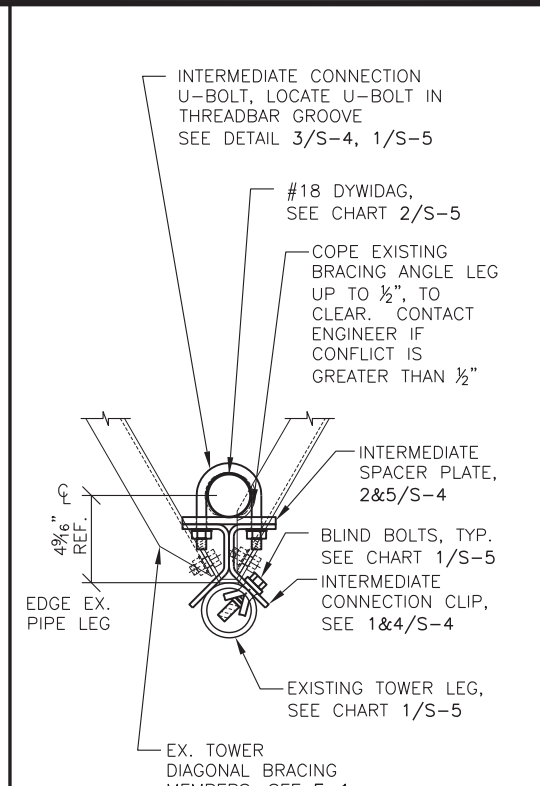
2
S-2



NOTE, FIELD MATCH ASSEMBLED CLIPS AND REINFORCING BAR TO PIPE LEG MEMBER TO LOCATE BORE HOLE LOCATIONS.

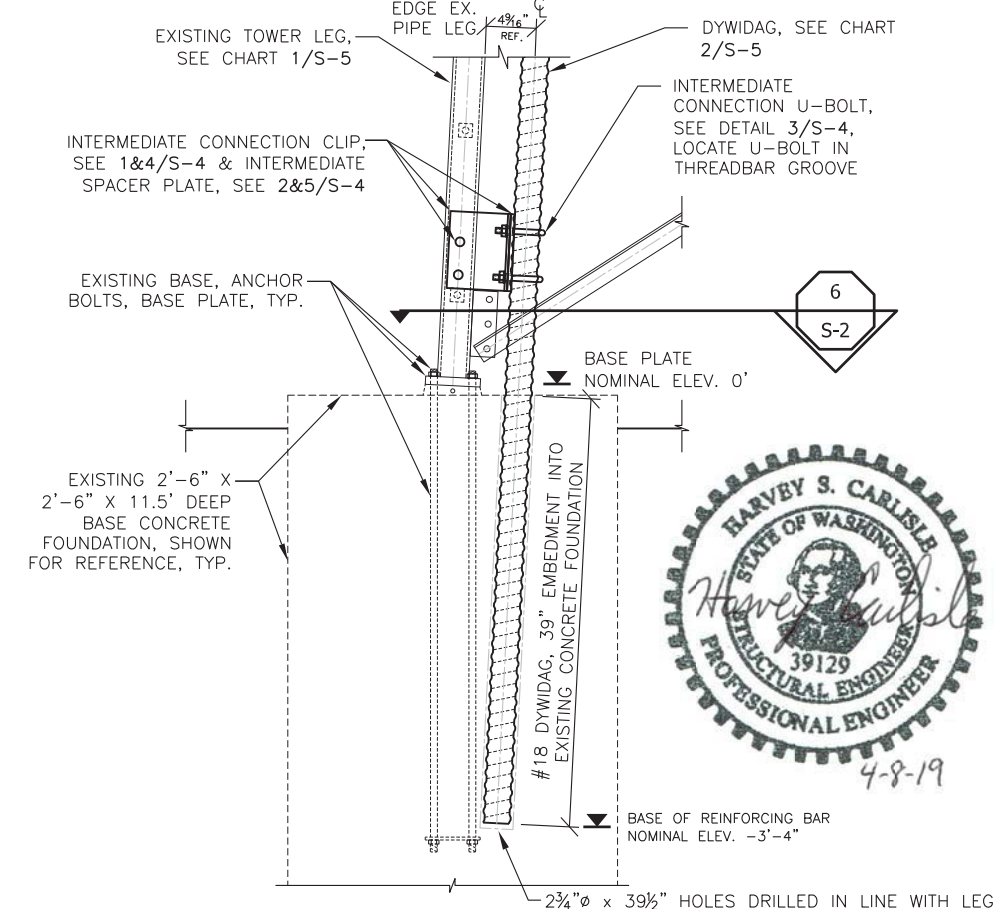
COUPLER, ELEVATION
 SCALE: NOT TO SCALE

3
S-2



INTERMEDIATE CLIP, SECTION
 SCALE: NOT TO SCALE

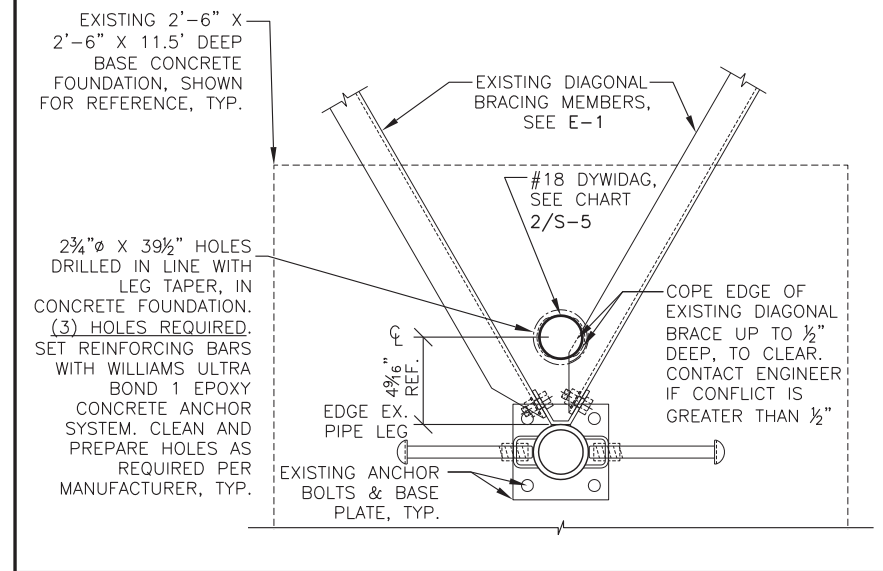
4
S-2



NOTE:
 - SOME DETAILS OMITTED FOR CLARITY

BOTTOM CLIP & BAR EMBEDMENT, DETAIL
 SCALE: NONE

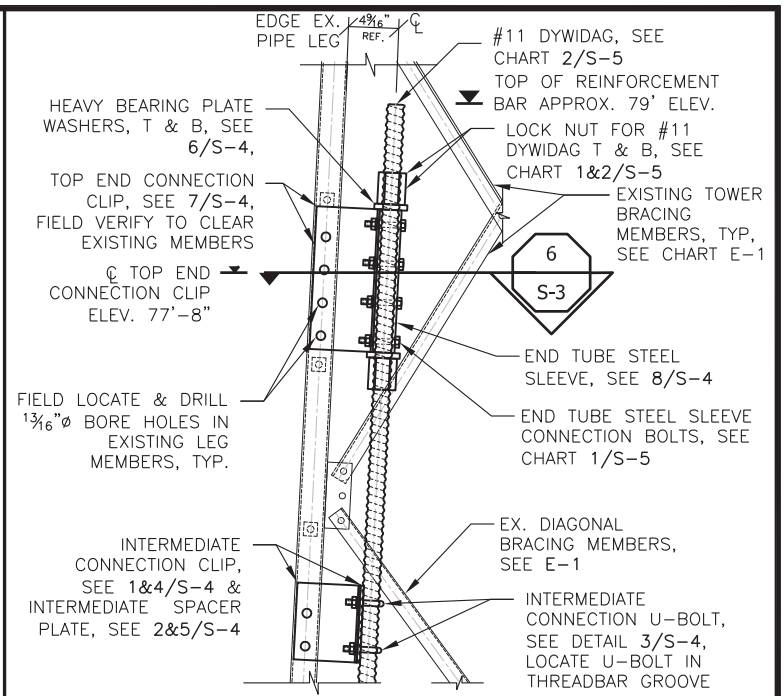
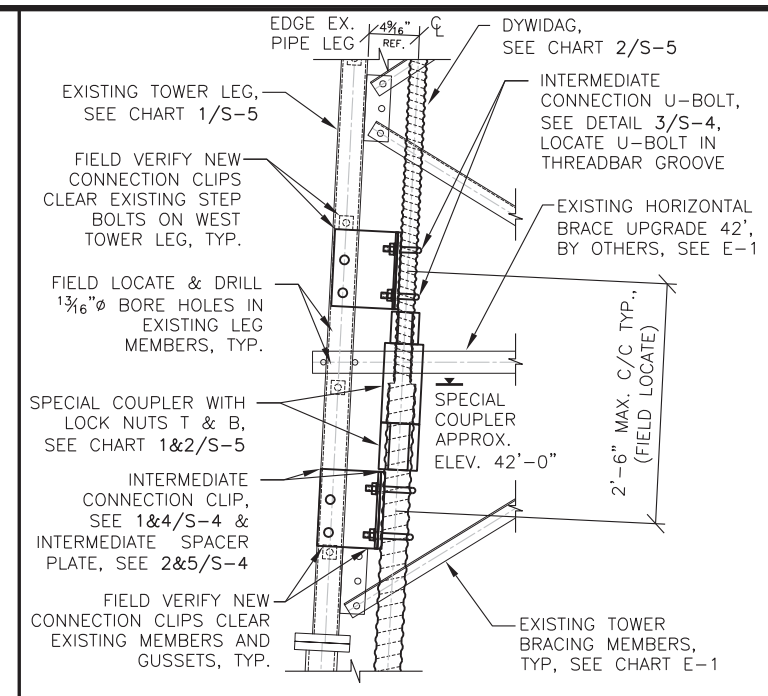
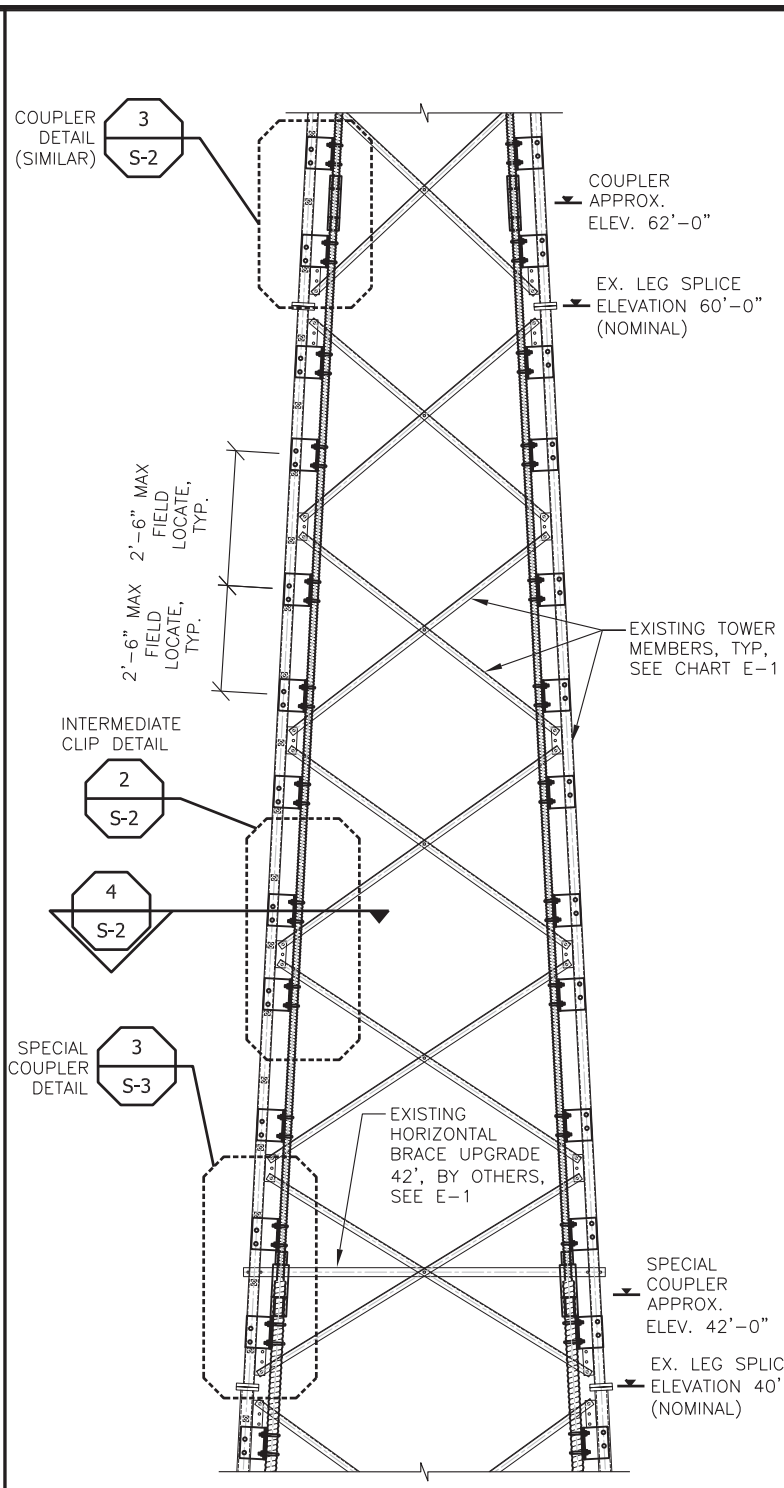
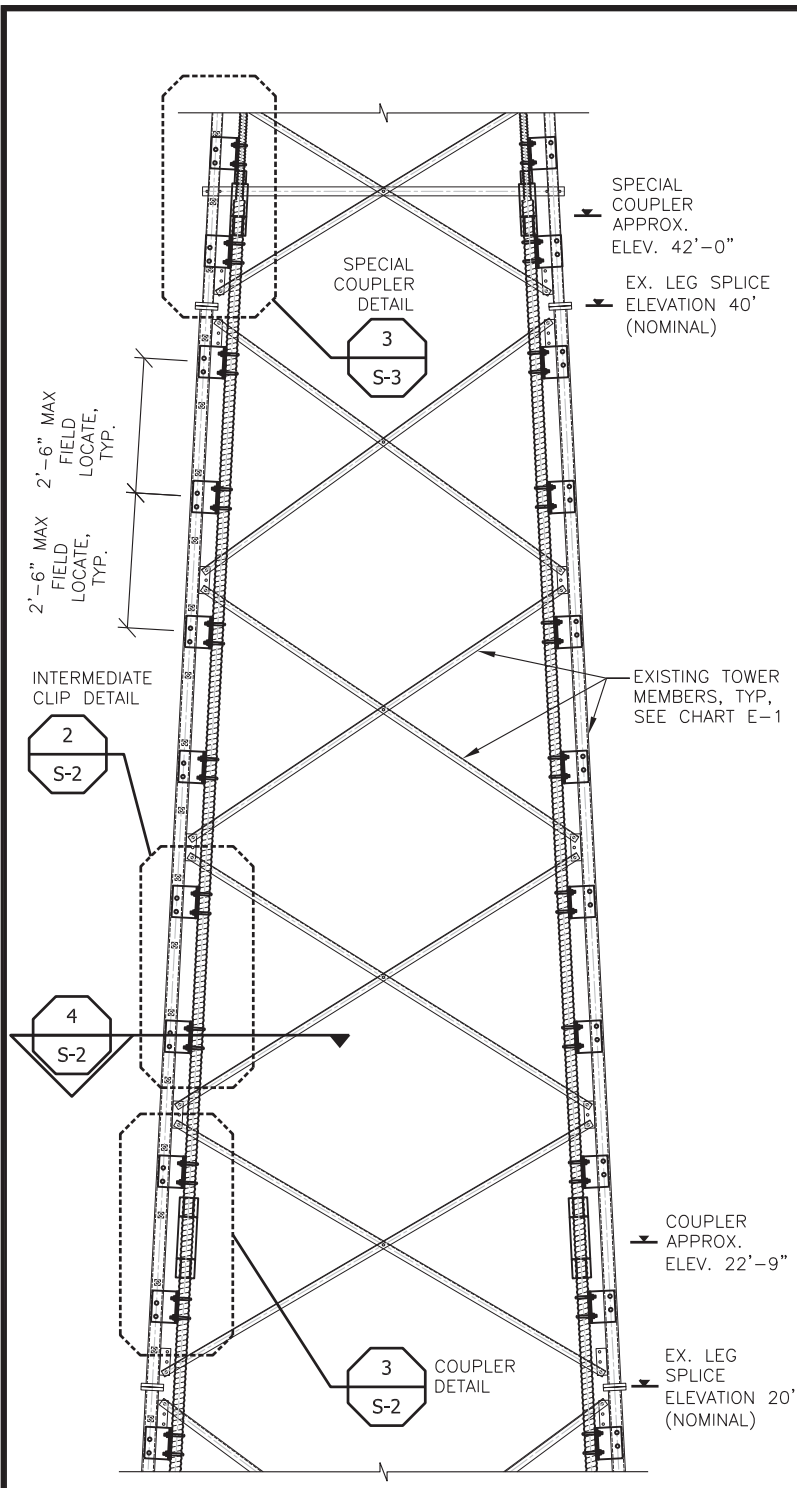
5
S-2



BASE PLATE, SECTION
 SCALE: NOT TO SCALE

6
S-2

 NorthWest Tower Engineering 3426 BROADWAY, SUITE 302 EVERETT, WA 98201 PHONE: 425.258.4248 FAX: 425.258.4289	ISSUE DATE	REV NO.	REVISION DESCRIPTION	BY
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SHEET TITLE	LEG REINFORCEMENT ASSEMBLY			
PROJECT TITLE & LOCATION	100-FT SELF-SUPPORTING TOWER SE02629A MERCER ISLAND, WA			
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04-08-19	K.P.W.	S.A.D.	H.S.C.	191538.06
				SHEET NUMBER:
				S-2



NOTES:
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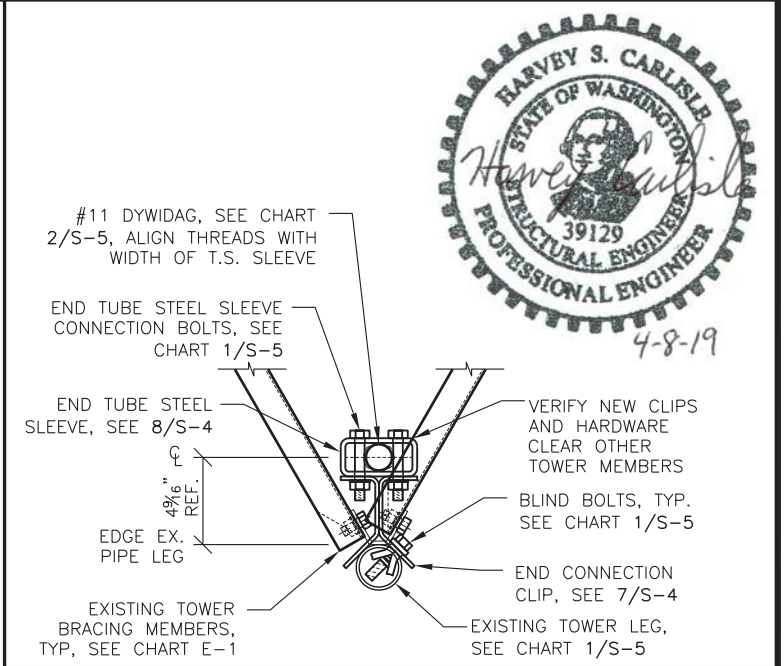
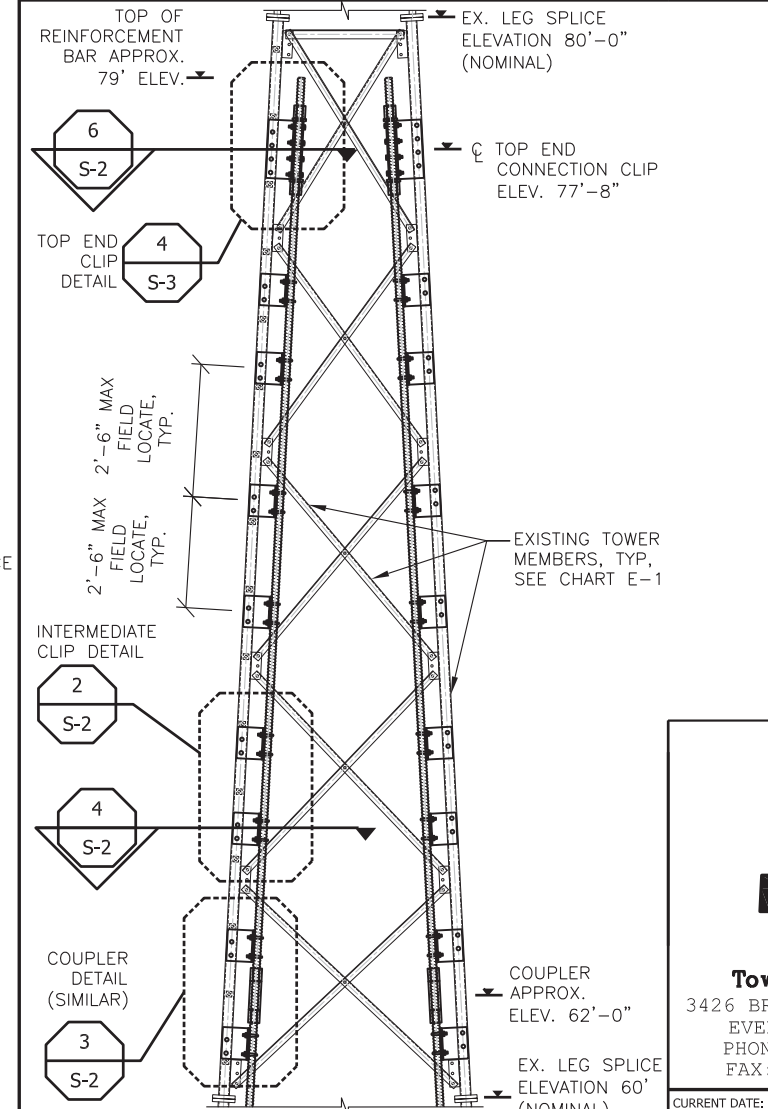
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 - WHENEVER STRUCTURAL MODIFICATIONS ARE PERFORMED, TEMPORARY SUPPORTS MUST ALWAYS BE INSTALLED FIRST BEFORE STRUCTURAL MEMBERS ARE REMOVED.

SPECIAL COUPLER, ELEVATION
 SCALE: NOT TO SCALE

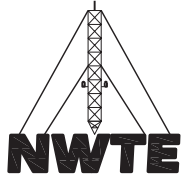
TOP END CLIP, DETAIL
 SCALE: NOT TO SCALE

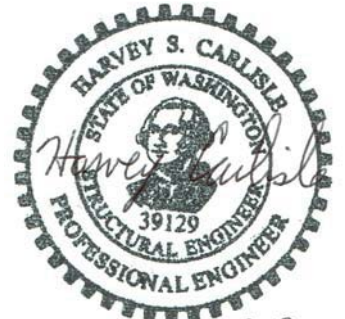
LEG REINFORCEMENT ASSEMBLY, ELEVATION, 20'-40'
 SCALE: NOT TO SCALE

LEG REINFORCEMENT ASSEMBLY, ELEVATION, 40'-60'
 SCALE: NOT TO SCALE

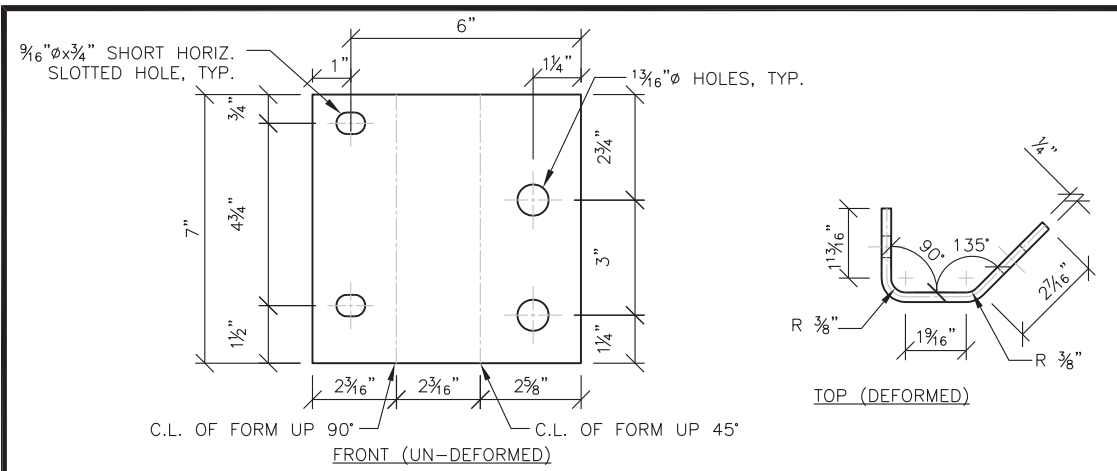


END TUBE STEEL SLEEVE, SECTION
 SCALE: NOT TO SCALE

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				SHEET NUMBER:
				S-3



4-8-19

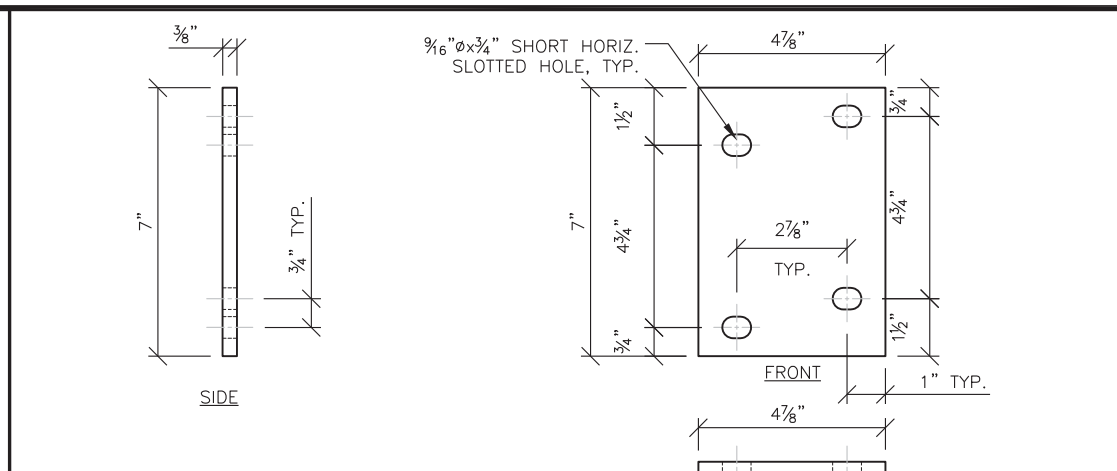


(2) 1/4" BENT PLATES REQUIRED FOR EACH #18 THREADBAR CONNECTION. APPROX. UN-DEFORMED LENGTH (C.L.) = 7" LONG, SEE CHART 1/S-5

INTERMEDIATE CLIP, FOR #18 THREADBAR, DETAIL

SCALE: NOT TO SCALE

1
S-4

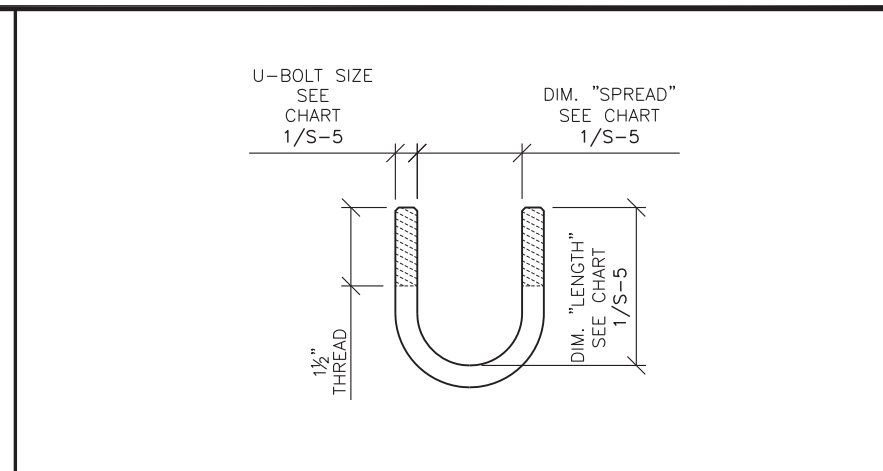


(1) 3/8" SPACER PLATE REQUIRED FOR EACH #18 THREADBAR INTERMEDIATE CONNECTION. SEE CHART 1/S-5

INTERMEDIATE SPACER, FOR #18 THREADBAR, DETAIL

SCALE: NOT TO SCALE

2
S-4

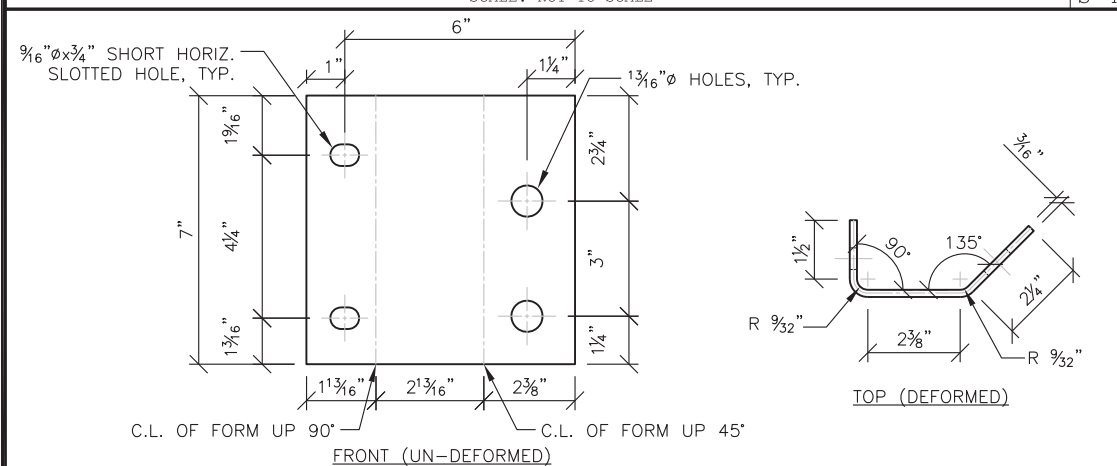


(2) U-BOLTS REQUIRED FOR EACH TYPICAL INTERMEDIATE CONNECTION. SEE CHART 1/S-5

INTERMEDIATE CONNECTION U-BOLT

SCALE: NOT TO SCALE

3
S-4

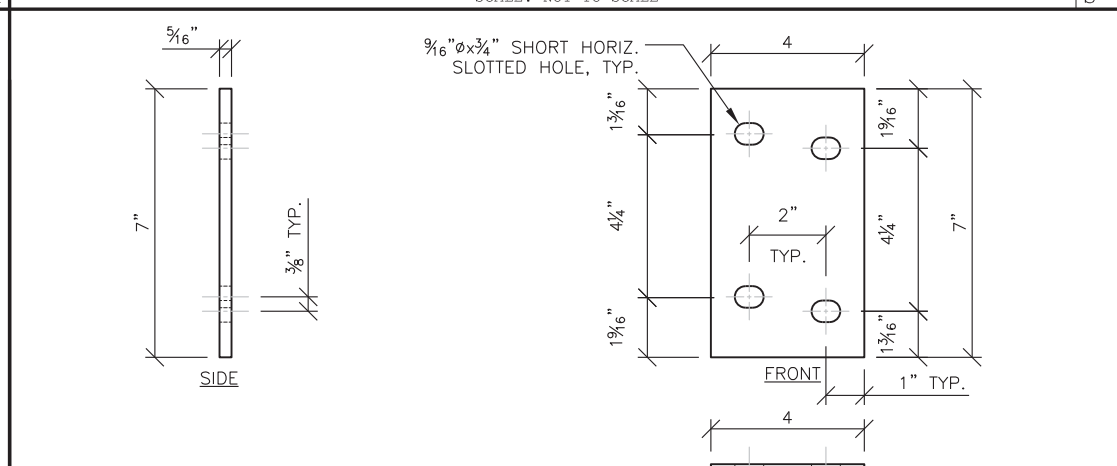


(2) 3/16" BENT PLATES REQUIRED FOR EACH #11 THREADBAR CONNECTION. APPROX. UN-DEFORMED LENGTH (C.L.) = 7" LONG, SEE CHART 1/S-5

INTERMEDIATE CLIP, FOR #11 THREADBAR, DETAIL

SCALE: NOT TO SCALE

4
S-4

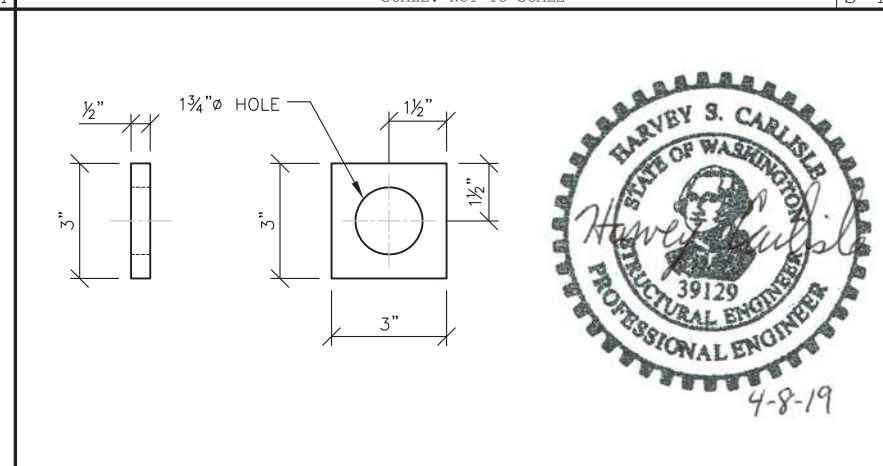


(1) 5/16" SPACER PLATE REQUIRED FOR EACH #11 THREADBAR INTERMEDIATE CONNECTION. SEE CHART 1/S-5

INTERMEDIATE SPACER, FOR #11 THREADBAR, DETAIL

SCALE: NOT TO SCALE

5
S-4

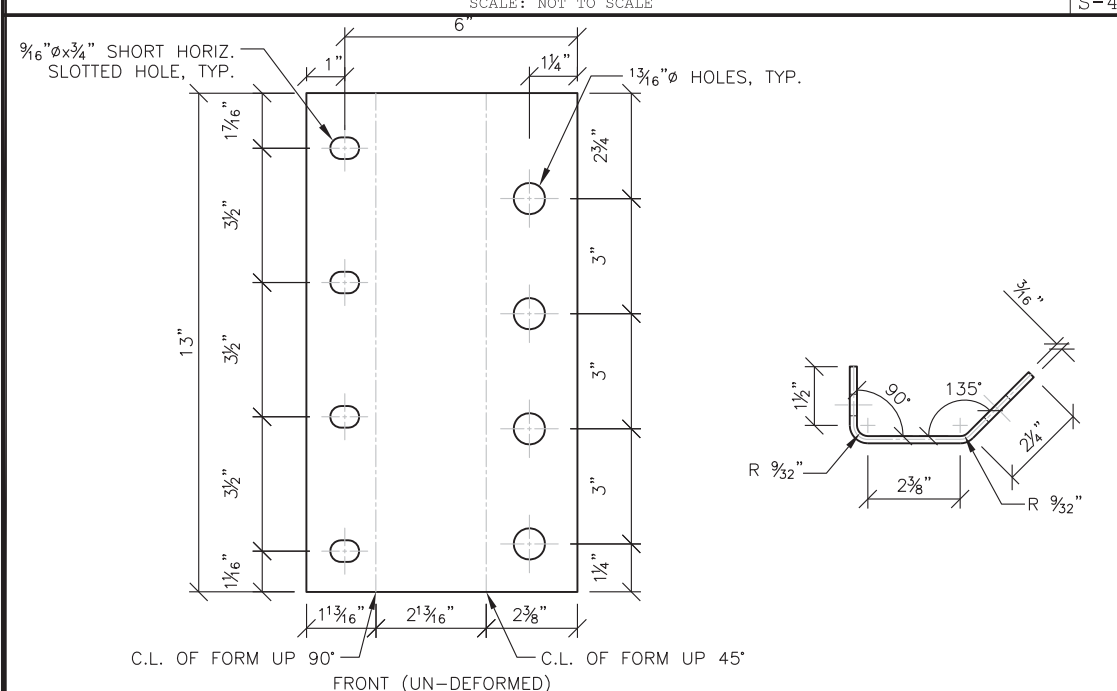


(2) SPACER PLATE AND (2) COUPLER LOCK NUTS REQUIRED FOR EACH TOP END #11 THREADBAR TUBE-STEEL SLEEVE. SEE CHART 1/S-5

HEAVY BEARING PLATE WASHER, FOR #11 THREADBAR, DETAIL

SCALE: NOT TO SCALE

6
S-4

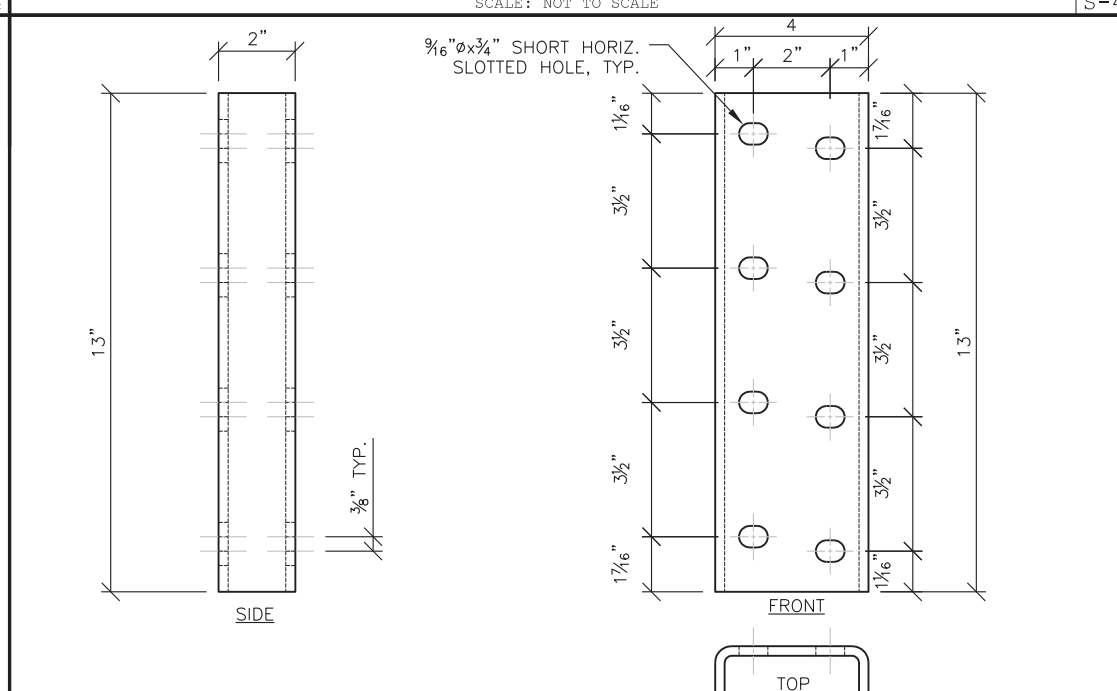


(2) 3/16" BENT PLATES REQUIRED FOR EACH #11 THREADBAR END CONNECTION. APPROX. UN-DEFORMED LENGTH (C.L.) = 7" LONG, SEE CHART 1/S-5

END TERMINATION CLIP (TOP), FOR #11 THREADBAR, DETAIL

SCALE: NOT TO SCALE

7
S-4



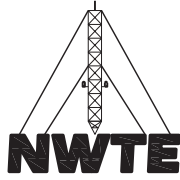
(1) T.S. END SLEEVE REQUIRED FOR EACH #11 THREADBAR END CONNECTION. SEE CHART 1/S-5

END TUBE-STEEL SLEEVE, FOR #11 THREADBAR, DETAIL

SCALE: NOT TO SCALE

8
S-4

NOTES:
 - CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION AND ERECTION OF ANY MATERIALS.
 - ALL HOLES, INCLUDING FIELD DRILLED HOLES SHALL BE DRILLED AND NOT BURNED.
 - ALL HIGH STRENGTH BOLTS TO BE INSTALLED WITH EITHER; STANDARD WASHER AND LOCKING NUTS, OR LOCKING WASHERS AND STANDARD NUTS, OR IF NO LOCKING DEVICES ARE INSTALLED, BOLTS SHALL BE TIGHTENED USING TURN-OF-NUT METHOD.
 - AREAS ON STRUCTURAL MEMBERS WITH FIELD DRILLED HOLES SHALL BE CLEANED AND TOUCHED UP WITH TWO COATS OF ZINC-RICH PAINT.
 - EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153
 - MODIFICATION TO EXISTING WAVEGUIDE LADDER AND SUPPORTS MAY BE REQUIRED DUE TO CONFLICTS DURING CONSTRUCTION AND WITH REDUNDANTS.
 SEE E-1 FOR EXISTING TOWER GEOMETRY & G-1 FOR MORE NOTES

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				S-4

LEG REINFORCEMENT PARTS KEY											
APPROX. ELEV.	PIPE LEG O.D.	REINFORCEMENT ATTACHMENT PARTS						REINFORCEMENT ATTACHMENT BOLTS			
		INTERMEDIATE CLIP QUANTITY, PL DIMENSIONS (THICKNESS x HEIGHT x UN-DEFORMED LENGTH) MATERIAL & GRADE	TYPICAL INTERMEDIATE SPACER PLATE QUANTITY, PL DIMENSIONS (THICKNESS x HEIGHT x WIDTH) MATERIAL & GRADE	END CLIP QUANTITY, PL DIMENSIONS (THICKNESS x HEIGHT x UN-DEFORMED LENGTH) MATERIAL & GRADE	END TUBE-STEEL SLEEVE QUANTITY, DIMENSIONS (WIDTH x DEPTH x THICKNESS x LENGTH) MATERIAL & GRADE	HEAVY BEARING PLATE WASHERS, QUANTITY, SIZE & GRADE	DYWIDAG THREADBAR COUPLER ASSEMBLIES SEE 2/S-6 FOR COUPLER LOCK NUTS	BLIND BOLTS INTERMEDIATE CONNECTIONS, TO TOWER LEG, QUANTITY, DIAMETER x CORE LENGTH & TYPE	INTERMEDIATE CONNECTION U-BOLT ASSEMBLIES, QUANTITY, SIZE (DIAMETER x SPREAD x LENGTH) & GRADE	BLIND BOLTS END CONNECTIONS, TO TOWER LEG, QUANTITY, DIAMETER x CORE LENGTH & TYPE	END TUBE-STEEL SLEEVE CONNECTION BOLT, QUANTITY, SIZE & GRADE
60'-80'	2 3/8"	(48) PL 3/16"x7"x7", A36	(24) PL 5/16"x7"x4", A36	(6) PL 3/16"x13"x7", A36	(3) HSS 4"x2"x1/4"x13", A500-B	(6) PL 1/2"x3"x3", A36	(3) #11/#11 COUPLER	(96) 1/2"Øx2 3/16", HOLLO-BOLT, LHBM12#1	(48) 1/2"Ø x 1 1/2" x 3", A193-B7	(24) 1/2"Øx2 3/8", HOLLO-BOLT, LHBM12#1	(24) 1/2"Øx3 1/4" LONG, A325
40'-60'	2 3/8"	(54) PL 3/16"x7"x7", A36 (6) PL 1/4"x7"x7", A36	(27) PL 5/16"x7"x4", A36 (3) PL 3/8"x7"x4 7/8", A36	N/A	N/A	N/A	(3) #11/#18 SPECIAL COUPLER	(108) 1/2"Øx2 3/16", HOLLO-BOLT, LHBM12#1 (12) 1/2"Øx2 3/16", HOLLO-BOLT, LHBM12#1	(54) 1/2"Ø x 1 1/2" x 3", A193-B7 (6) 1/2"Ø x 2 3/8" x 4", A193-B7	N/A	N/A
20' to 40'	2 7/8"	(48) PL 1/4"x7"x7", A36	(24) PL 3/8"x7"x4 7/8", A36	N/A	N/A	N/A	(3) #18/#18 COUPLER	(96) 1/2"Øx2 3/16", HOLLO-BOLT, LHBM12#1	(48) 1/2"Ø x 2 3/8" x 4", A193-B7	N/A	N/A
0' to 20'	2 7/8"	(54) PL 1/4"x7"x7", A36	(27) PL 3/8"x7"x4 7/8", A36	N/A	N/A	N/A	(3) #18/#18 COUPLER	(108) 1/2"Øx2 3/16", HOLLO-BOLT, LHBM12#1	(54) 1/2"Ø x 2 3/8" x 4", A193-B7	N/A	N/A

-(2) COUPLER LOCK NUTS AT EACH TOP END TUBE STEEL CONNECTION
 -EACH COUPLER ASSEMBLY REQUIRES (1) COUPLER AND (2) COUPLER LOCK NUTS.
 -QUANTITY OF COUPLER ASSEMBLIES MAY VARY BASED ON DYWIDAG THREADBAR LENGTHS
 -BOLTS AND U-BOLTS TO BE SUPPLIED WITH SPLIT RING WASHERS AND NUTS

LEG REINFORCEMENT PARTS KEY
SCALE: NOT TO SCALE

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DYWIDAG THREADBAR PARTS KEY			
APPROX. ELEV.	PIPE LEG O.D.	LEG REINFORCEMENT	
		TOTAL APPROX. LENGTH (FILED VERIFY), SIZE & GRADE	END HARDWARE QUANTITY & DESCRIPTION
42'-0" to 79'-0"	2 3/8"	± 120 L.F., #11 (L.H) DYWIDAG THREADBAR, A615 GR. 75	(15) #11 DYWIDAG COUPLER LOCK NUTS (VERIFY)
-3'-4" to 42'-0"	2 7/8"	± 140 L.F., #18 (R.H) DYWIDAG THREADBAR, A615 GR. 75	(15) #18 DYWIDAG COUPLER LOCK NUTS (VERIFY)

DYWIDAG THREADBAR PARTS KEY
SCALE: NOT TO SCALE

2
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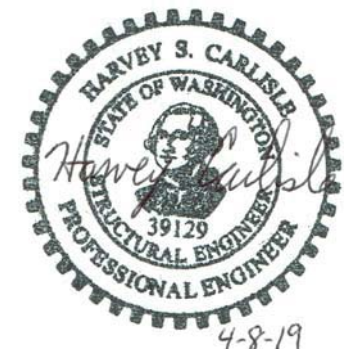
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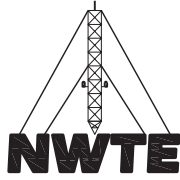
3
S-5

FOR INFORMATION ON DYWIDAG THREADBAR AND INSTALLATION PROCEDURES PLEASE CONTACT:
 BRYAN J. LAMPE
 PROJECT MANAGER, POST-TENSIONING & REINFORCING UNIT
 DYWIDAG-SYSTEMS INTERNATIONAL USA INC.
 2154 SOUTH STREET
 LONG BEACH, CA 90805
 PHONE: +1-562-531-6161 X159
 FAX: +1-562-529-2225
 BRYAN.LAMPE@DSIAMERICA.COM
 WWW.DSIAMERICA.COM

FOR INFORMATION ON LINDAPTER HOLLO-BOLTS PRODUCT AND INSTALLATION PROCEDURES PLEASE CONTACT:
 TEL: (866) 566-2658
 WWW.LINDAPTERUSA.COM

FOR INFORMATION ON WILLIAMS FORM PRODUCTS AND INSTALLATION PROCEDURES PLEASE CONTACT:
 25232 74TH AVE. SOUTH
 KENT, WA 98032
 PHONE: (253) 854-2268
 FAX: (253) 854-2318
 WILLIAMS@WILLIAMSFORM.COM




NorthWest Tower Engineering
 3426 BROADWAY, SUITE 302
 EVERETT, WA 98201
 PHONE: 425.258.4248
 FAX: 425.258.4289

ISSUE DATE	REV NO.	REVISION DESCRIPTION	BY
04-08-19	Δ	ISSUE FINAL MODIFICATION DRAWINGS	K.P.W.
SHEET TITLE: NEW MEMBERS PARTS KEY CHARTS			
PROJECT TITLE & LOCATION		100-FT SELF-SUPPORTING TOWER SE02629A MERCER ISLAND, WA	
CLIENT NAME		TAEC T-MOBILE	
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CURRENT DATE:	DRAWN BY:	CHECKED BY:	APPROVED BY:

**TABLE N5.4-1
Inspection Tasks Prior to Welding**

Inspection Tasks Prior to Welding	QC	QA
Welding procedure specifications (WPSs) available	P	P
Manufacturer certifications for welding consumables available	P	P
Material identification (type/grade)	O	O
Welder identification system ¹	O	O
Fit-up of groove welds (including joint geometry)		
- Joint preparation		
- Dimensions (alignment, root opening, root face, bevel)	O	O
- Cleanliness (condition of steel surfaces)		
- Tacking (tack weld quality and location)		
- Backing type and fit (if applicable)		
Configuration and finish of access holes	O	O
Fit-up of fillet welds		
- Dimensions (alignment, gaps at root)	O	O
- Cleanliness (condition of steel surfaces)		
- Tacking (tack weld quality and location)		
Check welding equipment	O	-

¹ The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low stress type.

**TABLE N5.4-2
Inspection Tasks During Welding**

Inspection Tasks During Welding	QC	QA
Use of qualified welders	O	O
Control and handling of welding consumables		
- Packaging	O	O
- Exposure control		
No welding over cracked tack welds	O	O
Environmental conditions		
- Wind speed within limits	O	O
- Precipitation and temperature		
WPS followed		
- Settings on welding equipment	O	O
- Travel speed		
- Selected welding materials		
- Shielding gas type/flow rate		
- Preheat applied		
- Interpass temperature maintained (min./max.)		
- Proper position (F, V, H, OH)		
Welding techniques		
- Interpass and final cleaning	O	O
- Each pass within profile limitations		
- Each pass meets quality requirements		

**TABLE N5.4-3
Inspection Tasks After Welding**

Inspection Tasks After Welding	QC	QA
Welds cleaned	O	O
Size, length and location of welds	P	P
Welds meet visual acceptance criteria		
- Crack prohibition		
- Weld/base-metal fusion	P	P
- Crater cross section		
- Weld profiles		
- Weld size		
- Undercut		
- Porosity		
Arc strikes	P	P
k-area ¹	P	P
Backing removed and weld tabs removed (if required)	P	P
Repair activities	P	P
Document acceptance or rejection of welded joint or member	P	P

¹ When welding of doubler plates, continuity plates or stiffeners has been performed

AISC TABLE N5.4-1
INSPECTION TASKS PRIOR TO WELDING

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AISC TABLE N5.4-2
INSPECTION TASKS DURING WELDING

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AISC TABLE N5.4-3
INSPECTION TASKS AFTER WELDING

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**TABLE N5.6-1
Inspection Tasks Prior to Bolting**

Inspection Tasks Prior to Bolting	QC	QA
Manufacturer's certifications available for fastener materials	O	P
Fasteners marked in accordance with ASTM requirements	O	O
Proper fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	O	O
Proper bolting procedure selected for joint detail	O	O
Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	O	O
Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used	P	O
Proper storage provided for bolts, nuts, washers and other fastener components	O	O

**TABLE N5.6-2
Inspection Tasks During Bolting**

Inspection Tasks During Bolting	QC	QA
Fastener assemblies, of suitable condition, placed in all holes and washers (if required) are positioned as required	O	O
Joint brought to the snug-tight condition prior to the pretensioning operation	O	O
Fastener component not turned by the wrench prevented from rotating	O	O
Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges	O	O

**TABLE N5.6-3
Inspection Tasks After Bolting**

Inspection Tasks After Bolting	QC	QA
Document acceptance or rejection of bolted connections	P	P

AISC TABLE N5.6-1
INSPECTION TASKS PRIOR TO BOLTING

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AISC TABLE N5.6-2
INSPECTION TASKS DURING BOLTING

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AISC TABLE N5.6-3
INSPECTION TASKS AFTER BOLTING

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DEFINITIONS:

QC - QUALITY CONTROL PROVIDED BY THE FABRICATOR AND ERECTOR
 QA - QUALITY ASSURANCE PROVIDED BY OTHERS QUALIFIED TO PERFORM SPECIAL INSPECTIONS
 O - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.
 P - PERFORM THESE TASKS FOR EACH WELDED JOINT OR MEMBER OR FOR EACH BOLTED CONNECTION.

NOTES:

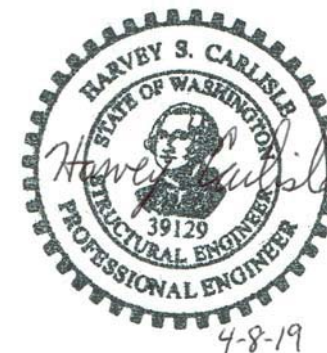
PER AISC N5.6 (1), FOR SNUG-TIGHT JOINTS, PRE-INSTALLATION VERIFICATION TESTING AS SPECIFIED IN TABLE N5.6-1 AND MONITORING OF THE INSTALLATION PROCEDURES AS SPECIFIED IN TABLE N5.6-2 ARE NOT APPLICABLE. THE QC AND QA INSPECTORS NEED NOT BE PRESENT DURING THE INSTALLATION OF FASTENERS IN SNUG-TIGHT JOINTS. SNUG-TIGHT JOINTS ARE ALLOWED IF LOCKING DEVICES ARE INSTALLED. OTHERWISE BOLTS SHALL BE TIGHTENED USING THE TURN-OF-THE-NUT METHOD AS DESCRIBED IN SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS.

PER AISC N7, QUALITY ASSURANCE (QA) INSPECTIONS, EXCEPT NONDESTRUCTIVE TESTING (NDT), MAY BE WAIVED WHEN THE WORK IS PERFORMED IN A FABRICATING SHOP OR BY AN ERECTOR APPROVED BY THE AUTHORITY HAVING JURISDICTION (AJH) TO PERFORM THE WORK WITHOUT QA.

STRUCTURAL OBSERVATION BY NWTE SHALL BE CARRIED OUT AT THE TIME THE STRUCTURAL WORK IS COMPLETED. CONTRACTOR SHALL COORDINATE WITH NWTE IN ORDER TO SCHEDULE A SITE VISIT WITH CONTRACTOR PRESENT. NWTE WILL CLIMB THE TOWER AND VISUALLY OBSERVE THE STRUCTURAL MODIFICATION WORK AND VERIFY THAT THE WORK HAS BEEN DONE IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS. VISUAL OBSERVATIONS WILL BE MADE OF THE NEW STRUCTURAL MEMBERS AND CONNECTIONS. NWTE WILL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT SUMMARIZING THE OBSERVATIONS MADE, INCLUDING ANY DEFICIENCIES WHICH, TO THE BEST OF NWTE'S KNOWLEDGE, HAVE BEEN RESOLVED.

OTHER INSPECTION NOTES:

REFER TO G-1 FOR INSPECTION AND OBSERVATIONS REQUIRED FOR OTHER THAN BOLTING AND WELDING



ISSUE DATE	REV NO.	REVISION DESCRIPTION	BY								
04-08-19	0	ISSUE FINAL MODIFICATION DRAWINGS	K.P.W.								
<table border="1"> <tr> <td>SHEET TITLE</td> <td>SPECIAL INSPECTIONS AND STRUCTURAL OBSERVATIONS</td> </tr> <tr> <td>PROJECT TITLE & LOCATION</td> <td>100-FT SELF-SUPPORTING TOWER SE02629A MERCER ISLAND, WA</td> </tr> <tr> <td>CLIENT NAME</td> <td>TAEC T-MOBILE</td> </tr> <tr> <td>NOTICE</td> <td>NOT TO BE COPIED OR DISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF NORTHWEST TOWER ENGINEERING</td> </tr> </table>				SHEET TITLE	SPECIAL INSPECTIONS AND STRUCTURAL OBSERVATIONS	PROJECT TITLE & LOCATION	100-FT SELF-SUPPORTING TOWER SE02629A MERCER ISLAND, WA	CLIENT NAME	TAEC T-MOBILE	NOTICE	NOT TO BE COPIED OR DISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF NORTHWEST TOWER ENGINEERING
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CURRENT DATE:	DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT NUMBER:	SHEET NUMBER:						
04-08-19	K.P.W.	S.A.D.	H.S.C.	191538.06	S-6						

DEFINITIONS/NOTES - SPECIAL INSPECTIONS & STRUCTURAL OBSERVATIONS
SCALE: NONE

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NOT USED
SCALE: NONE

8
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GENERAL

- ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TOWER AND FOUNDATION CONSTRUCTION.
- ALL DIMENSIONS AND DETAILS SHOWN ARE BASED ON THE INFORMATION GATHERED ON SITE BY **NWTE ON 06-16-15**, FOR THE PURPOSE OF PERFORMING A STRUCTURAL ANALYSIS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO PURCHASING OR FABRICATION AND ERECTION OF ANY MATERIALS.
- THESE DRAWINGS INDICATE THE MAJOR OPERATIONS TO BE PERFORMED, BUT DO NOT SHOW EVERY FIELD CONDITION THAT MAY BE ENCOUNTERED. THEREFORE, PRIOR TO STARTING WORK, THE CONTRACTOR SHOULD SURVEY THE JOB SITE TO CONFIRM SITE CONDITIONS.
- ANY SUBSTITUTIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL CODES AND SAFETY REGULATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE AS SHOWN ON THESE DRAWINGS. (REFER TO TIA-322-2016: LOADING, ANALYSIS, AND DESIGN CRITERIA RELATED TO THE INSTALLATION, ALTERATION AND MAINTENANCE OF COMMUNICATION STRUCTURES; ASSE A10.48-2016: CRITERIA FOR SAFETY PRACTICES WITH THE CONSTRUCTION, DEMOLITION, MODIFICATION AND MAINTENANCE OF COMMUNICATION STRUCTURES).
- CONTACT THE ENGINEER OF RECORD IF MODIFICATIONS ARE REQUIRED TO THE DESIGN DUE TO EXISTING CONDITIONS.
- AFTER COMPLETION OF THE WORK, THE SITE SHALL BE CLEARED OF ALL DEBRIS AND REMOVED. ANY SURPLUS MATERIALS NOT TO BE REMOVED FROM SITE SHALL BE STORED ON SITE AS DESIGNATED BY THE OWNER.

CODES AND STANDARDS

- TIA-222-G**: STRUCTURAL STANDARD FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES
- IBC: INTERNATIONAL BUILDING CODE, 2015
- ASTM: STANDARDS FOR BUILDING CODES, LATEST EDITION.
- ACI 315: AMERICAN CONCRETE INSTITUTE, DETAILS AND DETAILING OF CONCRETE REINFORCEMENT, LATEST EDITION.
- ACI 318: AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, LATEST EDITION.
- CRSI: CONCRETE STEEL REINFORCING INSTITUTE, MANUAL OF STANDARD PRACTICE, LATEST EDITION.
- AISC: AMERICAN INSTITUTE OF STEEL CONSTRUCTION, MANUAL OF STEEL CONSTRUCTION, 14TH EDITION.
- AWS: AMERICAN WELDING SOCIETY, STRUCTURAL WELDING CODE, LATEST EDITION.

DESIGN CRITERIA

- BASIC WIND SPEED AND COEFFICIENTS PER TIA-222-G:
85 MPH (3-SEC GUST, VASD) NO ICE, 30 MPH (3-SEC GUST) WITH 1/4" ICE.
(EQUIVALENT TO VULT =115 MPH, PER IBC 2015)
EXPOSURE CATEGORY B (WOODED OR SUBURBAN AREA),
TOPOGRAPHIC CATEGORY 5 (FLAT TOPPED HILL)
H = 365 FT, L = 3300 FT, X = 760'
STRUCTURE CLASS III
(EQUIVALENT TO RISK CATEGORY IV)
- SEISMIC LOADING IS DETERMINED PER IBC 2015, ASCE7-10 & TIA-222-G. SEISMIC LOADS DO NOT GOVERN FOR THIS STRUCTURE.
- FOR PROPOSED ANTENNA AND FEED LINE CONFIGURATION REFER TO TOWER ELEVATION DRAWING E-1 AND CROSS SECTION ON A-1.
- ACCORDING TO THE T.E.P. FOUNDATION MAPPING REPORT, EACH LEG OF THE TOWER RESTS ON A CONCRETE PIER. PIER DIMENSIONS ARE LISTED AS APPROXIMATELY 2'-6" SQUARE AT TOP AND 3'-6" SQUARE AT BOTTOM WITH A DEPTH OF 11'-6". CALCULATIONS CONFIRM THAT THE FOUNDATIONS ARE ADEQUATE.
- NO X-RAY, SUBSURFACE EXCAVATION, OR OTHER SIMILAR EXAMINATION OF THE TOWER, FOUNDATION SYSTEM, OR WELDED CONNECTIONS WAS CONDUCTED. FOR PORTIONS OF THE TOWER AND FOUNDATION SYSTEM THAT WERE NOT VISUALLY ACCESSIBLE, NO DETERMINATION REGARDING THE CONDITION OR ADEQUACY WAS MADE.
- ANTENNA, FEEDLINES AND SUPPORT STRUCTURES: WEIGHTS AND EXPOSED AREAS PROVIDED BY CLIENT AND BY MANUFACTURER.

FOUNDATIONS

- CONTRACTOR SHALL VERIFY THE LOCATION OF UNDERGROUND UTILITIES IN THE AREA WHERE EXCAVATION WORK IS TO BE PERFORMED.
- ALL FOUNDATIONS SHALL BEAR ON FIRM UNDISTURBED SOIL.
- ALL FOOTING EXCAVATIONS SHALL BE MANUALLY CLEANED PRIOR TO PLACING CONCRETE. COMPACT THE EXPOSED SOIL SURFACE AND ANY GRANULAR FILL UNDER THE FOUNDATION TO 90% OF THE MODIFIED PROCTOR DENSITY.
- FOOTINGS MAY BE POURED IN NEAT EXCAVATIONS PROVIDED THE SIZE IS INCREASED 3 INCHES AT EACH INTERFACE WITH THE SOIL.
- CONTRACTOR SHALL PROVIDE DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING, AND SHORING REQUIRED TO SAFELY RETAIN THE EARTH BANKS.
- BACKFILL NEAR AND AROUND THE FOUNDATIONS SHALL BE A WELL GRADED FILL MATERIAL PLACED IN 12" THICK LAYERS THAT HAS BEEN COMPACTED TO 90% OF THE MODIFIED PROCTOR DENSITY.

CONCRETE

- ALL CONCRETE FOR FOUNDATIONS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AFTER 28 DAYS.
- THE CONCRETE MIX SHALL NOT CONTAIN LESS THAN 5½" SACKS OF CEMENT (ASTM C 150 TYPE II) PER CUBIC YARD.
- THE CONCRETE SHALL HAVE A MAXIMUM AGGREGATE SIZE OF ¾".
- THE CONCRETE MIX SHALL PRODUCE A MAXIMUM SLUMP OF 5" ±1".
- THE CONCRETE MIX SHALL HAVE A TOTAL AIR CONTENT OF 5%, WITH A TOLERANCE OF PLUS OR MINUS 1.5%. AIR-ENTRAINING ADMIXTURES SHALL CONFORM TO ASTM C 260.
- THE CONCRETE MIX SHALL HAVE A MAXIMUM WATER-CEMENT RATIO OF 0.45. WATER REDUCING OR ACCELERATING ADMIXTURES SHALL CONFORM TO ASTM C 494.
- THE CONCRETE SHALL NOT CONTAIN CALCIUM CHLORIDE OR ANY OTHER ADMIXTURE CONTAINING CHLORIDE OTHER THAN NATURAL IMPURITIES.
- FORMWORK SHALL CONFORM TO ACI 318 SPECIFICATIONS (LATEST EDITION).
- ALL CONCRETE SHALL BE PLACED IN A MONOLITHIC POUR UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
- PROVIDE CHAMFERS AT ALL EXPOSED CORNERS OF CONCRETE.
- CONCRETE WORK UNDER EXTREME WEATHER CONDITIONS SHALL CONFORM TO ACI 318 SPECIFICATIONS (LATEST EDITION).

STRUCTURAL STEEL

- DETAILING, FABRICATION, AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS AND CODES FOUND IN THE AISC STEEL CONSTRUCTION MANUAL, 14TH EDITION:
- SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, AISC 360-10
- CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, AISC 303-10
- SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS, RCSC 2009
- W SHAPES SHALL BE A992 50 KSI, ANGLES, CHANNELS, AND PLATES TO BE ASTM A36, Fy=36 KSI.
- SOLID RODS TO BE ASTM A572, Fy=50 KSI.
- RECTANGULAR & SQUARE HOLLOW STRUCTURAL SECTIONS (HSS) TO BE ASTM A500-B, Fy=46 KSI. ROUND HOLLOW STRUCTURAL SECTIONS (HSS) TO BE ASTM A500-B, Fy=42 KSI.
- PIPE TO BE ASTM A53-B, Fy=35 KSI.
- NEW STRUCTURAL STEEL CONNECTION BOLTS TO BE ASTM A325 TYPE 3 OR A490. CONNECTION BOLTS SHALL BE TIGHTENED SNUG-TIGHT IF LOCKING DEVICES ARE INSTALLED. OTHERWISE BOLTS SHALL BE TIGHTENED USING TURN-OF-NUT METHOD AS DESCRIBED IN SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS. NO BOLT SHALL BE REUSED.
- U-BOLTS SHALL BE GALVANIZED STEEL GRADE A193-B7. U-BOLTS SHALL BE INSTALLED SNUG TIGHT. TAKE CARE NOT TO DAMAGE PIPE MEMBERS.
- BLIND BOLTS SHALL BE HOT DIP GALVANIZED HOLLO-BOLT, MANUFACTURED BY LINDAPTER.
- EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123 AND HARDWARE PER ASTM A153.
- NEW DYWIDAG THREADBAR TO BE A615 GR75. DYWIDAG THREADBAR PARTS TO BE HOT-DIPPED GALVANIZED. NEW THREADBAR TO BE SET INTO EX. FOUNDATIONS WITH ULTRABOND 1 EPOXY CONCRETE ANCHOR SYSTEM, FOLLOW WILLIAMS FORM INSTALLATION INSTRUCTIONS.

PAINT

- AREAS OF DAMAGED PAINT OR GALVANIZING, CAUSED BY THE CONTRACTOR, ON STRUCTURAL MEMBERS SHALL BE CLEANED AND TOUCHED UP WITH TWO COATS OF ZINC-RICH PAINT.
- IF APPLICABLE, NEW STEEL SHALL BE PAINTED TO MATCH EXISTING TOWER PAINT.

STEEL REINFORCEMENT

- ALL REINFORCING STEEL FOR CONCRETE TO BE GRADE 60 DEFORMED BILLET STEEL PER ASTM A615.
- ANCHOR RODS TO BE ASTM F155, GRADE 55 WITH A PLATE, WASHER, AND NUT UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- REINFORCEMENT SHALL BE FABRICATED AND PLACED IN ACCORDANCE WITH THE ACI 315 AND CRSI. SUPPORT REINFORCING AS REQUIRED BY CRSI TO PREVENT DISPLACEMENT UPON CONCRETE POURING.
- MAINTAIN ALL CLEARANCES NOTED ON THE DRAWINGS. WHERE NO DIMENSIONS ARE NOTED, USE THE ACI RECOMMENDED CLEARANCES.
- MINIMUM COVER FOR REINFORCING BARS SHALL BE 3", FOR CONCRETE POURED AGAINST SOIL.
- TIE BARS SECURELY WITH #16 ANNEALED WIRE AND SUPPORT AS REQUIRED.
- ALL WELDED WIRE FABRIC TO BE PER ASTM A185. ALL BARS AND WIRE SHALL BE FREE OF RUST, MILL SCALE, DIRT, OR OTHER FOREIGN MATERIAL PRIOR TO CASTING CONCRETE.
- PROVIDE MINIMUM LAP SPLICES OF 36 BAR DIAMETERS UNLESS NOTED OTHERWISE.
- FIELD BENDING OR WELDING OF REINFORCEMENT BARS IS NOT PERMITTED.


WELDING

- WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE.
- ELECTRODES TO BE E70XX LOW HYDROGEN.
- MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS.
- MAXIMUM WELD SIZE NOT TO EXCEED MINIMUM STEEL PLATE THICKNESS.

SPECIAL INSPECTION & OBSERVATIONS

- SPECIAL INSPECTIONS AS REQUIRED BY IBC CHAPTER 17 SHALL BE CARRIED OUT BY A QUALIFIED TEST AGENCY. STRUCTURAL OBSERVATIONS AS REQUIRED BY IBC 1704.6, BY REGISTERED DESIGN PROFESSIONAL.
- THE FOLLOWING WORK SHALL BE INSPECTED ON A PERIODIC BASIS AND THE MATERIALS TESTED:
STRUCTURAL CAST-IN-PLACE CONCRETE AND STEEL REINFORCING.
STRUCTURAL HIGH STRENGTH BOLTED CONNECTIONS, PER ANSI/AISC 360-10 TABLES N5.6-1, -2, -3. BLIND FASTENER CONNECTIONS.
FIELD AND FULL PENETRATION STRUCTURAL WELDING. PER ANSI/AISC 360-10 TABLES N5.4-1, -2, -3. BACKFILLING ABOVE GUY ANCHOR BLOCKS.
PLACEMENT OF THREADBAR INTO EXISTING FOUNDATION
POST INSTALLED ADHESIVE ANCHORS
PRESSURE GROUTING PIPE LEG MEMBERS
- REPORTS SHALL SUBMITTED IN ACCORDANCE WITH IBC CHAPTER 17.
- STRUCTURAL OBSERVATION BY NWTE MAY BE CARRIED OUT AT THE TIME THE STRUCTURAL WORK IS COMPLETED. CONTRACTOR SHALL COORDINATE WITH NWTE IN ORDER TO SCHEDULE A SITE VISIT WITH CONTRACTOR PRESENT. NWTE WILL CLIMB THE TOWER AND VISUALLY OBSERVE THE STRUCTURAL MODIFICATION WORK AND VERIFY THAT THE WORK HAS BEEN DONE IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS. VISUAL OBSERVATIONS WILL BE MADE OF THE NEW STRUCTURAL MEMBERS AND CONNECTIONS. NWTE WILL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT SUMMARIZING THE OBSERVATIONS MADE, INCLUDING ANY DEFICIENCIES WHICH, TO THE BEST OF NWTE'S KNOWLEDGE, HAVE BEEN RESOLVED.



 <p>NorthWest Tower Engineering 3426 BROADWAY, SUITE 302 EVERETT, WA 98201 PHONE: 425.258.4248 FAX: 425.258.4289</p>	ISSUE DATE	REV NO.	REVISION DESCRIPTION	BY	
	04-08-19	△	ISSUE FINAL MODIFICATION DRAWINGS	K.P.W.	
SHEET TITLE	GENERAL NOTES				
PROJECT TITLE & LOCATION	100-FT SELF-SUPPORTING TOWER SE02629A MERCER ISLAND, WA				
CLIENT NAME	TAEC T-MOBILE				
NOTICE	NOT TO BE COPIED OR DISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF NORTHWEST TOWER ENGINEERING				
CURRENT DATE:	DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT NUMBER:	SHEET NUMBER:
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