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4/16/2025 1:23:00 PM

DESIGN CRITERIA:

LOCATION: ORLAND PARK, IL

GOVERNING BUILDING CODE: INTERNATIONAL BUILDING CODE 2018 (IBC 2018)  
MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES (ASCE 7-16)

RISK CATEGORY: IV

DESIGN LOADS (AS APPLICABLE FOR ANTENNA FOUNDATION ONLY):  
DESIGN LOADS LISTED ARE IN ADDITION TO THE SELF WEIGHT OF THE STRUCTURE

DESIGN SHEAR ON FDN FROM ANTENNA (UNFACTORED): 3.85 K  
DESIGN MOMENT ON FDN FROM ANTENNA (UNFACTORED): 176 K-FT  
DESIGN UPLIFT ON FDN FROM ANTENNA, MAX ON ONE ANTENNA LEG (UNFACTORED): 65.8 K

SNOW LOAD:  
GROUND SNOW LOAD (Pg) 30 PSF  
Ce 1.0  
Cs 1.0  
Is 1.2  
Cs 1.0  
Pf 25.2 PSF  
Pd(MAX) N/A

WIND LOADS:  
ULTIMATE WIND SPEED (3 SECOND GUST) 120 MPH  
EXPOSURE C

GEOTECHNICAL INFORMATION:  
SOIL INVESTIGATION REPORT TESTING SERVICE CORPORATION, DATED APRIL 7, 2023  
SOIL SITE CLASS D  
VERTICAL BEARING PRESSURE (NET) 3,000 PSF  
FROST DEPTH 4'-0" (FDN OUTSIDE OF HEATED BLDG LIMITS)

SUBMITTAL NOTES:

DOCUMENTS TO BE SUBMITTED FOR STEEL CONSTRUCTION:  
A) BOLT INSTALLATION PROCEDURES  
B) ADDITIONAL ITEMS PER CHAPTER N3 OF AISC 360-16 UPON REQUEST.

DOCUMENTS TO BE SUBMITTED FOR CAST-IN-PLACE CONCRETE INSTALLATION:  
A) SHOP DRAWINGS AND CONCRETE REBAR  
B) CONCRETE MIX DESIGN INCLUDING DATA SHEETS FOR CONCRETE MIX COMPONENTS AND ADMIXTURES  
C) 24 MONTHS OF HISTORICAL TEST DATA FOR THE SUBMITTED MIX DESIGN.  
D) CONCRETE CYLINDER FIELD TEST AND BREAK STRENGTH REPORTS.

ABBREVIATIONS:

AD	AREA DRAIN	LG	LONG
AR	ANCHOR ROD	LLH	LONG LEG HORIZONTAL
B BOT	BOTTOM	LLV	LONG LEG VERTICAL
BLDG	BUILDING	MFR/MNFR	MANUFACTURER
CJ	CONTRACTION, CONTROL JOINT	MK	MARK
CJP	COMPLETE JOINT PENETRATION	MAX	MAXIMUM
CT	CABLE TRAY	MT	MAGNETIC PARTICLE TEST
CTS	CABLE TRAY SUPPORT	NS	NEAR SIDE
CL	CENTER LINE	OC	ON CENTER
CLR	CLEAR	OH	OPPOSITE HAND
COL	COLUMN	OPNG	OPENING
COMB	COMBINED	OPP	OPPOSITE
CONC	CONCRETE	P/C	PRECAST
CONN	CONNECTION	PJF	PREFORMED JOINT FILLER
CONT	CONTINUOUS	PL	PLATE
DET	DETAIL	REF	REFERENCE
DIA, Ø	DIAMETER	SS	STAINLESS STEEL
EL	ELEVATION	STD	STANDARD
EW	EACH WAY	SYMM	SYMMETRICAL
EXP	EXPANSION	T/STEEL	TOP OF STEEL
(E)	EXISTING	TYP	TYPICAL
FS	FAR SIDE	T/	TOP
FLG	FLANGE	UNO	UNLESS NOTED OTHERWISE
FLR	FLOOR	UT	ULTRASOUND TEST
FTG	FOOTING	VERT	VERTICAL
FDN	FOUNDATION	VB	VERTICAL BRACE
GALV	HOT DIP GALVANIZED	VIF	VERIFY IN FIELD
GA	GAUGE	VLV	VALVE
HB	HORIZONTAL BRACE	VT	VISUAL TEST
HDG	HOT DIP GALVANIZED	WL	WORK LINE
HOOK	HOOK	WP	WORK POINT
K	KIP	W/	WITH

GENERAL NOTES:

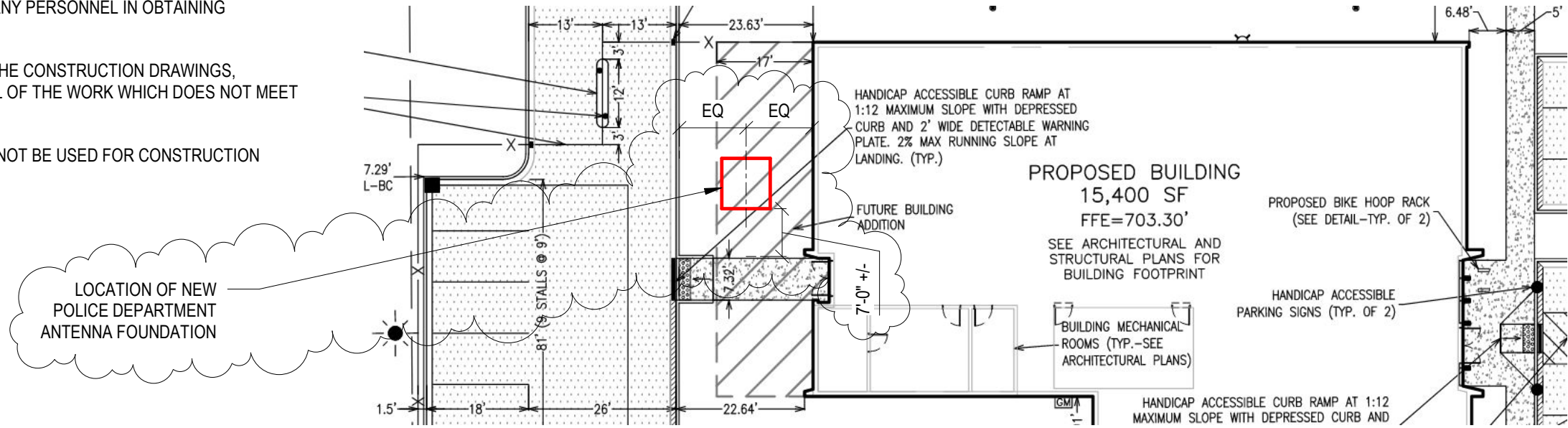
- THIS WORK SHALL INCLUDE MATERIALS, FABRICATION AND ERECTION OF ALL ITEMS REQUIRED FOR COMPLETION OF THE WORK SHOWN ON THESE DRAWINGS, AND SHALL CONFORM TO OWNER'S SPECIFICATIONS.
- CONTRACTOR SHALL RESTORE ANY AREAS DISTURBED DURING CONSTRUCTION TO ORIGINAL CONDITION INCLUDING CLEAN-UP AND RE-GRADING.
- CONTRACTOR SHALL MAINTAIN THE WORK PLACE IN SAFE AND ORDERLY MANNER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOADING, UNLOADING, AND HAULING OF ALL MATERIALS TO AND FROM THE WORK PLACE.
- CONTRACTOR SHALL DISPOSE OF ALL REFUSE OFF SITE AS DIRECTED BY THE OWNER.
- ALL APPLICABLE REQUIREMENTS OF THE LOCAL BUILDING CODES, OSHA, AND OTHER AUTHORITIES HAVING JURISDICTION SHALL BE STRICTLY ADHERED TO.
- CONTRACTOR SHALL VERIFY IN THE FIELD (VIF) ALL DIMENSIONS, ELEVATIONS, EQUIPMENT, AND UTILITIES SHOWN ON THE DRAWINGS PRIOR TO COMMENCING WORK. CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF ANY DISCREPANCIES OR INTERFERENCES.
- AT THE OWNER'S OPTION, AN INDEPENDENT MATERIAL TESTING FIRM MAY BE RETAINED TO PERFORM QUALITY ASSURANCE TESTING OF MATERIAL. CONTRACTOR SHALL COOPERATE WITH THE TESTING COMPANY PERSONNEL IN OBTAINING NECESSARY SAMPLES.
- THE OWNER RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE WITH THE CONSTRUCTION DRAWINGS, SPECIFICATIONS, AND OTHER OWNER'S REQUIREMENTS, AND TO REJECT ANY OR ALL OF THE WORK WHICH DOES NOT MEET THE REQUIREMENTS OF THE PROJECT.
- DIMENSIONS NOTED AS (REF) ARE PROVIDED FOR INFORMATION ONLY AND SHOULD NOT BE USED FOR CONSTRUCTION WITHOUT PROPER FIELD VERIFICATION.

EARTHWORK NOTES:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEWATERING, SHORING, AND SAFETY BARRICADING. ALL ADJACENT STRUCTURES, ROADS, BURIED ELECTRICAL DUCTS, AND FOUNDATIONS SHALL BE PROTECTED FROM DAMAGE FROM EXCAVATION ACTIVITIES. CONTRACTOR SHALL PROVIDE MEANS TO CONTROL SURFACE RUNOFF.
- ALL UNDERGROUND UTILITIES AND PIPING MUST BE IDENTIFIED PRIOR TO WORK. USE EXTREME CAUTION IN EXCAVATION TO NOT DAMAGE ANY UNDERGROUND UTILITIES OR PIPING.
- CONTRACTOR SHALL BE AWARE OF POTENTIAL CONTAMINATED SOIL WHEN EXCAVATING. DURING EXCAVATION, IF CONTAMINATION OF THE SOLS IS SUSPECTED, CONTACT THE OWNER'S REPRESENTATIVE REGARDING SOIL DISPOSAL OPTIONS.
- COMPACTION OF SUB-GRADE AND BACKFILLING OF EXCAVATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE GEOTECHNICAL REPORT.
- CONTROLLED LOW STRENGTH MATERIAL (CLSM) SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 150 PSI, BE SELF-LEVELING AND SELF-COMPACTING, AND SHALL CONFORM TO THE NATIONAL READY MIXED CONCRETE ASSOCIATION GUIDE SPECIFICATION FOR CONTROLLED LOW STRENGTH MATERIALS (CLSM).
- FOUNDATIONS SHALL BE CONSTRUCTED ON CLEAN STRUCTURAL FILL. ORGANIC MATERIALS SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL. STRUCTURAL FILL MATERIALS AND PLACEMENT REQUIREMENTS SHALL CONFORM WITH THE GEOTECHNICAL REPORT
- LAY BACK SIDES OF SOIL EXCAVATIONS TO A SLOPE IN COMPLIANCE WITH OSHA REQUIREMENTS AND RECOMMENDATIONS OF THE GEOTECHNICAL INVESTIGATION REPORT.
- WHERE EXISTING CONDITIONS DO NOT ALLOW SLOPING EXCAVATION, DESIGN AND PROVIDE EXCAVATION PROTECTION. EMPLOY OR RETAIN A LICENSED STRUCTURAL ENGINEER IN THE STATE OF ILLINOIS TO DESIGN EXCAVATION PROTECTION SYSTEMS TO SAFELY WITHSTAND LOADS IMPOSED DURING CONSTRUCTION.
- THE DESIGN OF THE EXCAVATION PROTECTION SYSTEM IS THE COMPLETE AND SOLE RESPONSIBILITY OF CONTRACTOR. PROVIDE SYSTEM STRENGTH AND STIFFNESS TO PREVENT DAMAGE OR SETTLEMENT OF EXISTING OR NEW CONSTRUCTION, INSIDE OR OUTSIDE THE PROJECT LIMITS. ANY DAMAGE TO EXISTING OR NEW CONSTRUCTION, INSIDE OR OUTSIDE THE PROJECT LIMITS, CAUSED BY MOVEMENT OF THE EXCAVATION PROTECTION SYSTEM IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- PROTECT EXCAVATION FROM WATER, FROST, ICE, AND DEBRIS. REMOVE ANY WATER, FROST, ICE, OR DEBRIS PRIOR TO CONCRETE PLACEMENT. USE OF DEICING SALT IS PROHIBITED.
- PROTECT SOIL PLANNED FOR SUPPORTING ANY FOOTING OR SLAB FROM FREEZING. WHERE SOIL PLANNED FOR SUPPORTING FOOTING OR SLAB IS ALLOWED TO FREEZE, REMOVE SOIL AND OBTAIN DESIGN ELEVATION WITH COMPACTED ENGINEERED FILL OR LEAN CONCRETE.

STRUCTURAL CONCRETE & FOUNDATION NOTES:

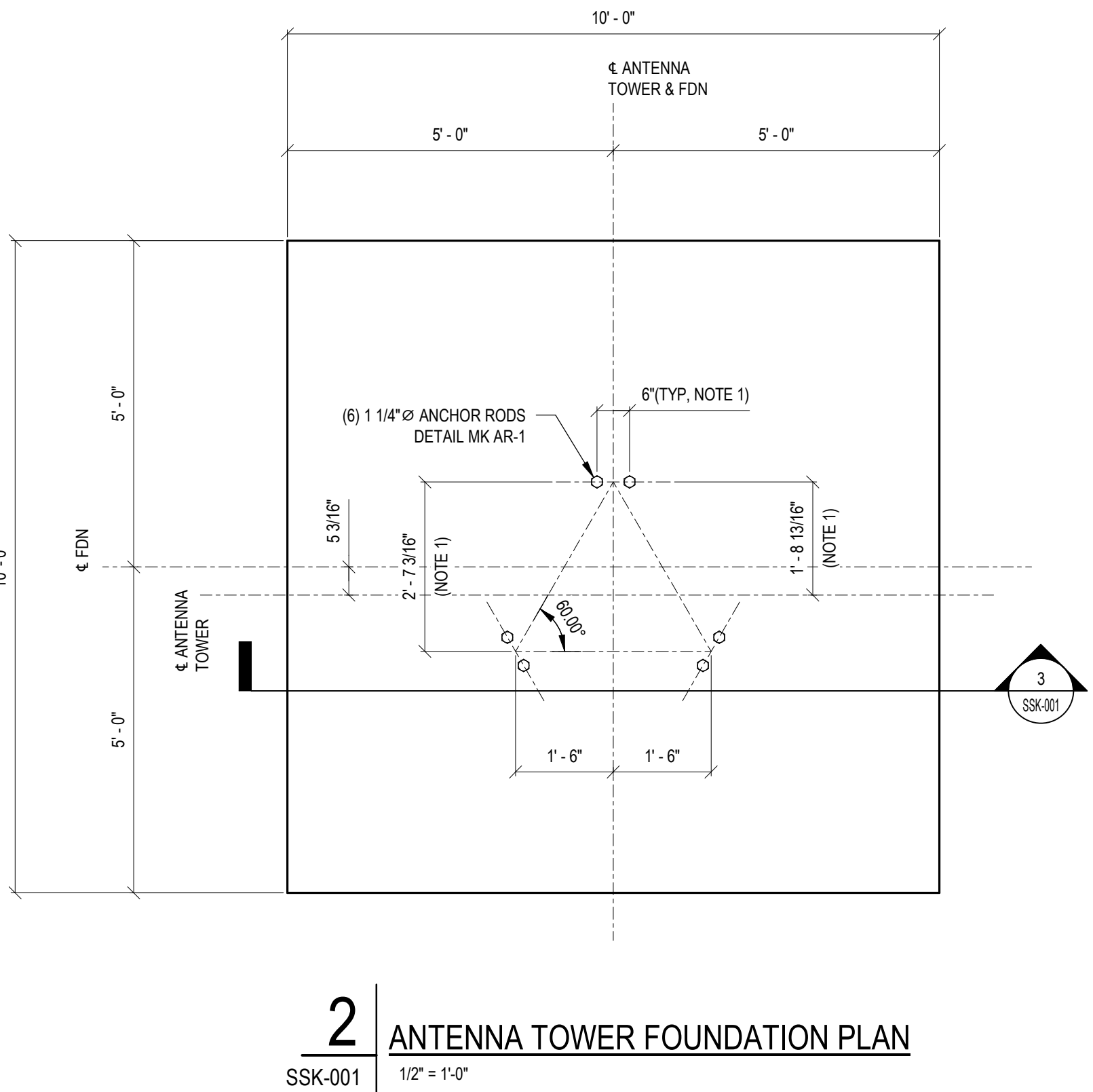
- THE DETAILING, FABRICATION, AND ERECTION OF REINFORCED CONCRETE SHALL CONFORM TO THE FOLLOWING CODES AND SPECIFICATIONS:  
A. "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" -- ACI 318-14  
B. "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" -- ACI 315-18  
C. "SPECIFICATIONS FOR STRUCTURAL CONCRETE" -- ACI 301-20  
D. "SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS" -- ACI 117-10
- EXTERIOR, FOUNDATION CONCRETE SHALL BE NORMAL WEIGHT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI AT 28 DAYS WITH A MAXIMUM WATER-CEMENTITIOUS MATERIALS RATIO OF 0.45, UNLESS NOTED OTHERWISE. CONCRETE SHALL BE AIR-ENTRAINED WITH 6% AIR CONTENT, PLUS OR MINUS 1 PERCENT. MAXIMUM AGGREGATE SIZE SHALL BE 3/4", AND THE MAXIMUM SLUMP SHALL BE 4" AS DETERMINED BY ASTM C143, UNLESS NOTED OTHERWISE.
- CONCRETE SHALL NOT BE CAST AGAINST FROZEN SOIL OR STANDING WATER. CONCRETE PLACEMENT IN COLD AND HOT WEATHER SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF "COLD WEATHER CONCRETING (ACI 306)" AND "HOT WEATHER CONCRETING (ACI 305)".
- REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60. BARS SHALL BE BENT COLD. APPLICATION OF HEAT TO REINFORCING BARS IS STRICTLY PROHIBITED. REINFORCEMENT SHALL BE FREE OF RUST, OIL OR OTHER DELETERIOUS MATERIAL, AND BE SECURELY FASTENED TO PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT. ALL REINFORCEMENT SPLICES SHALL BE CLASS B AND STAGGERED, UNLESS NOTED OTHERWISE.
- CHAMFER ALL EXPOSED CORNERS 3/4" UNLESS NOTED OTHERWISE.
- PRIOR TO PLACING REINFORCING OR CONCRETE, CONTRACTOR SHALL COORDINATE AND FIELD VERIFY LOCATION AND SIZE OF ALL OPENINGS, PIPING, CONDUITS, AND OTHER EMBEDDED ITEMS AS APPLICABLE.
- THE TOP OF EXPOSED EXTERIOR CONCRETE SHALL HAVE A COARSE BROOM FINISH, UNO.
- ALLOWABLE BEARING STRENGTH SHALL BE VERIFIED AT BOTTOM OF EACH FOUNDATION EXCAVATION BY SOIL ENGINEER PRIOR TO PLACEMENT OF REINFORCED CONCRETE. IF ALLOWABLE BEARING STRENGTH CANNOT BE CONFIRMED, OR IF UNSOUND CONDITIONS ARE ENCOUNTERED, THE OWNER SHALL BE CONTACTED FOR DIRECTION.
- CONCRETE CYLINDERS SHALL BE OBTAINED DURING CONCRETE INSTALLATION AND TESTED PER THE REQUIREMENTS OF ACI 318. IN ADDITION TO CONCRETE STRENGTH TESTING, SLUMP PER ASTM C143, AIR CONTENT PER ASTM C231, AND CONCRETE TEMPERATURE SHALL BE TESTED.
- A TOTAL OF 9 CYLINDERS SHALL BE OBTAINED FOR EACH CONCRETE STRENGTH TESTING SAMPLE SET. FREQUENCY OF TESTING SHALL NOT BE LESS THAN ONCE A DAY NOR LESS THAN ONCE FOR EVERY 150 CY OF CONCRETE. THE CYLINDERS SHALL BE TESTED AS FOLLOWS. 1 - CYLINDER AT THREE DAYS, 3 - CYLINDERS AT SEVEN DAYS, 3 - CYLINDERS AT 28 DAYS. TWO CYLINDERS ARE TO BE USED AS SPARES.
- PROVIDE TWO #5 EXTRA BARS AROUND EACH OPENING ON ALL SIDES.
- PROVIDE ACI STANDARD 90 DEGREE HOOKS WHERE INDICATED UNLESS NOTED OTHERWISE.
- LAP SPLICES SHALL BE IN ACCORDANCE WITH ACI CLASS B UNLESS NOTED OTHERWISE.
- WHERE TWO BARS ARE GRAPHICALLY INDICATED TO LAP, PROVIDE ACI STANDARD CLASS B TENSION LAP SPlice EVEN IF LESS THAN 100% OF BARS ARE SPLICED AT THAT LOCATION. WHERE TWO GROUPS OF BARS ARE INDICATED TO LAP, PROVIDE CLASS B TENSION LAP SPlice LENGTH FOR EACH BAR EVEN IF THE NUMBER AND SIZES OF BARS IN ONE GROUP DIFFER FROM THE NUMBER AND SIZE OF BARS IN THE OTHER GROUP.
- WHERE DOWELS ARE INDICATED BUT NOT SIZED, PROVIDE DOWELS THAT MATCH SIZE AND LOCATION OF MAIN REINFORCEMENT AND LAP SPlice WITH THE MAIN REINFORCEMENT.
- REBAR EDGE DISTANCE CLEARANCES FOR CONCRETE:  
TOPSIDE CLEAR = 3"  
BOTTOM CLEAR = 3"
- FOR CONCRETE MIXES WITH A CEMENT CONTENT EXCEEDING 600 LBS/YARD OR FOR ELEMENTS EXCEEDING 3'-0" IN ANY CROSS SECTIONAL DIMENSION, TEMPERATURE DIFFERENTIAL PRECAUTIONS SHALL BE CONSIDERED IN ACCORDANCE WITH ACI 207.1 "MASS CONCRETE".



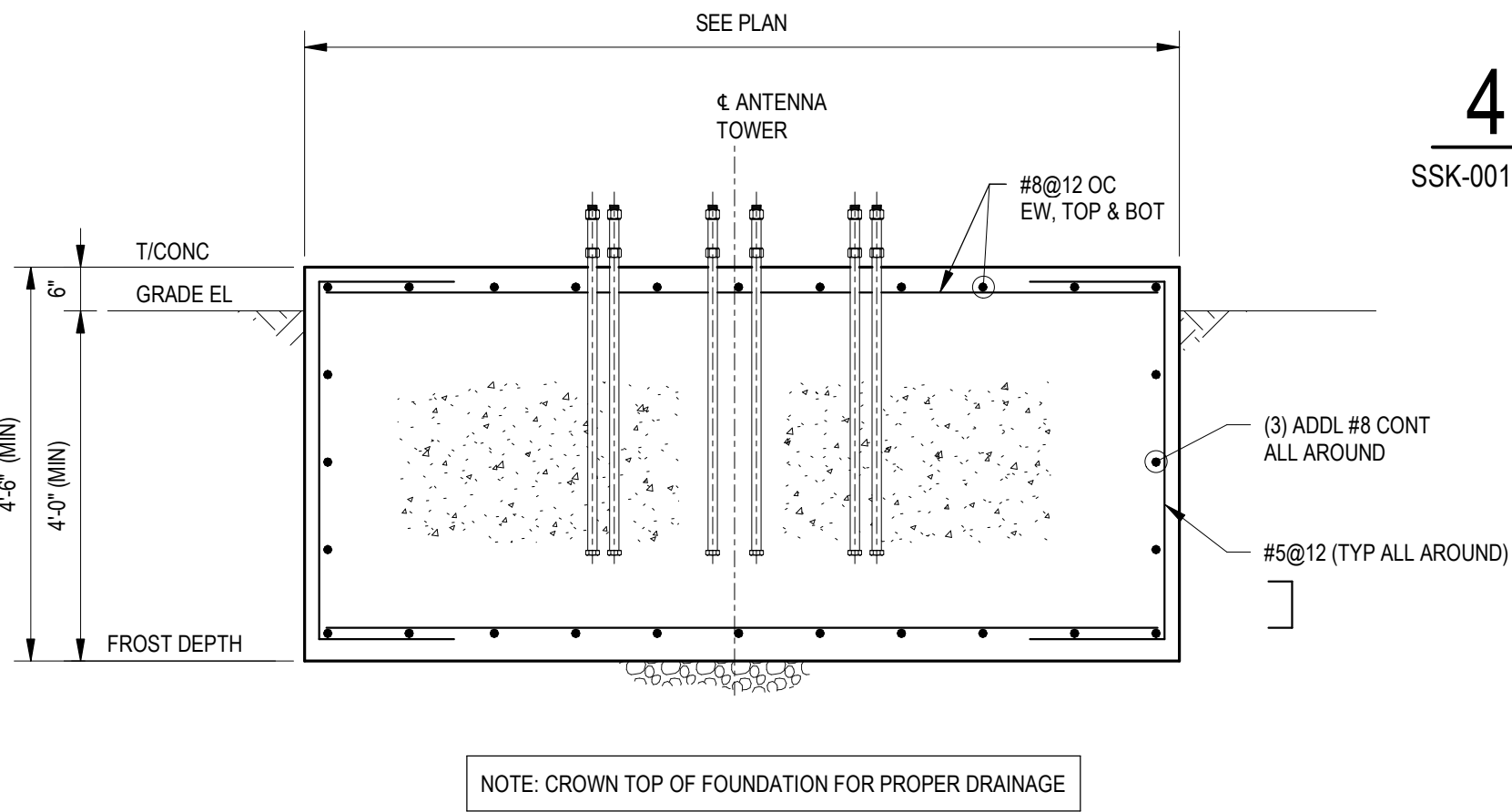
1 LAYOUT PLAN - PD ANTENNA TOWER FDN  
SSK-001 NOT TO SCALE

STRUCTURAL STEEL NOTES:

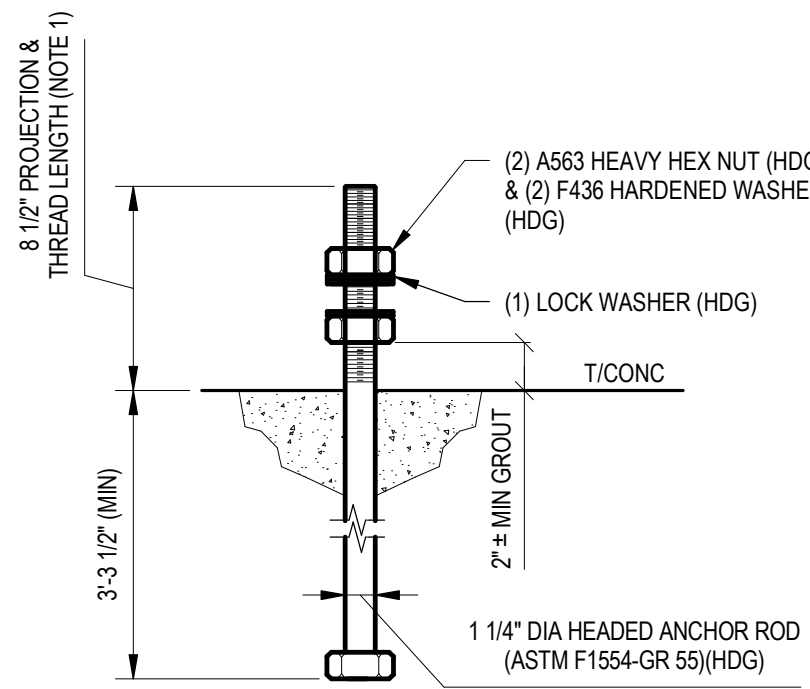
- ALL STRUCTURAL STEEL CONSTRUCTION SHALL BE FABRICATED AND ERECTED TO CONFORM TO THE FOLLOWING CODES AND SPECIFICATIONS:  
A. AISC 360-16 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".  
B. AISC 303-16 "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".  
C. RCSC "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS", 2020.
- STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE FOLLOWING ASTM SPECIFICATIONS, UNLESS NOTED OTHERWISE  
ANCHOR RODS ASTM F1554, GR 55, S-1 SUPPLEMENT
- ALL EXTERIOR STRUCTURAL STEEL SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.
- CONTACT SURFACES OF JOINTS WHICH ARE TO BE GALVANIZED SHALL BE COMPLETELY SEAL WELDED PRIOR TO GALVANIZING.
- ALL SURFACES TO BE FIELD WELDED SHALL BE GROUND TO BARE STEEL AFTER GALVANIZING.
- STEEL TO BE GALVANIZED SHALL BE DELIVERED TO THE SITE SUCH THAT THERE IS NO GALVANIZING WITHIN 2" OF THE HEAT AFFECTED ZONE OF INDICATED FIELD WELDS. THE STEEL SURFACE SHALL BE BARE METAL IN THE HEAT AFFECTED ZONE.
- FIELD WELDS AND ADJACENT STEEL SURFACES SHALL BE TOUCHED UP WITH "Z.R.C. COLD GALVANIZING COMPOUND FOR IRON AND STEEL", MANUFACTURED BY Z.R.C. PRODUCTS COMPANY, A DIVISION OF NORFOLK CORP., QUINCY, MASSACHUSETTS OR APPROVED EQUAL BY THE OWNER. THE MATERIAL SHALL BE APPLIED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- ALL ANCHOR ROD ASSEMBLIES (ROD, HEAVY HEX NUTS, AND WASHERS) SHALL BE PROVIDED HOT DIP GALVANIZED PER ASTM A123.
- NUTS FOR COLUMN ANCHOR RODS SHALL BE TIGHTENED SNUG TIGHT AFTER GROUT HAS SET.
- GROUT SHALL BE NON-METALLIC, NON-SHRINK GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 9,000 PSI AT 7 DAYS PER ASTM C109, UNLESS NOTED OTHERWISE. GROUT SHALL MEET THE REQUIREMENTS OF ASTM C1107 AND SHALL ALSO HAVE BETWEEN A 1% MINIMUM AND 3% MAXIMUM HEIGHT CHANGE VALUE PER ASTM C827. CONTRACTOR SHALL TEST AND PLACE THE GROUT IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.



2 ANTENNA TOWER FOUNDATION PLAN  
SSK-001 1/2" = 1'-0"



3 ANTENNA TOWER FOUNDATION SECTION  
SSK-001 1/2" = 1'-0"



4 ANCHOR ROD DETAIL MK AR-1  
SSK-001 1 1/2" = 1'-0"

SHEET NOTES:

- FIELD LOCATE ANCHORS TO MATCH ANTENNA TOWER SUPPLIER BOLT PATTERN. NOTIFY A/E OF ANY DISCREPANCIES.
- DETAIL FOUNDATION REINFORCEMENT TO MISS ANCHOR RODS.



Village of  
Orland Park  
Illinois

RFP 24-011 - POLICE  
DEPARTMENT FIRING  
RANGE AND EOC FACILITY  
PROJECT

10609 163rd St. Orland Park, IL 60467

VALDES  
ARCHITECTURE & ENGINEERING

SEAL

ISSUE  
ISSUED FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	04/16/25	ISSUED FOR CONSTRUCTION

PROJECT NO. 2023-053  
DESIGNED BY AS  
DRAWN BY MET  
CHECKED BY KMM  
APPROVED BY MSS  
SHEET TITLE

POLICE DEPARTMENT  
ANTENNA TOWER FDN  
PLAN & DETAILS

DATE:  
04/16/25  
REV. 1

SHEET NO.

SSK-001

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