

NORTHERN ARIZONA UNIVERSITY

WALKUP SKYDOME

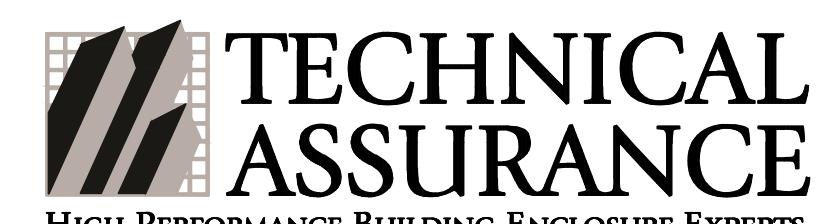
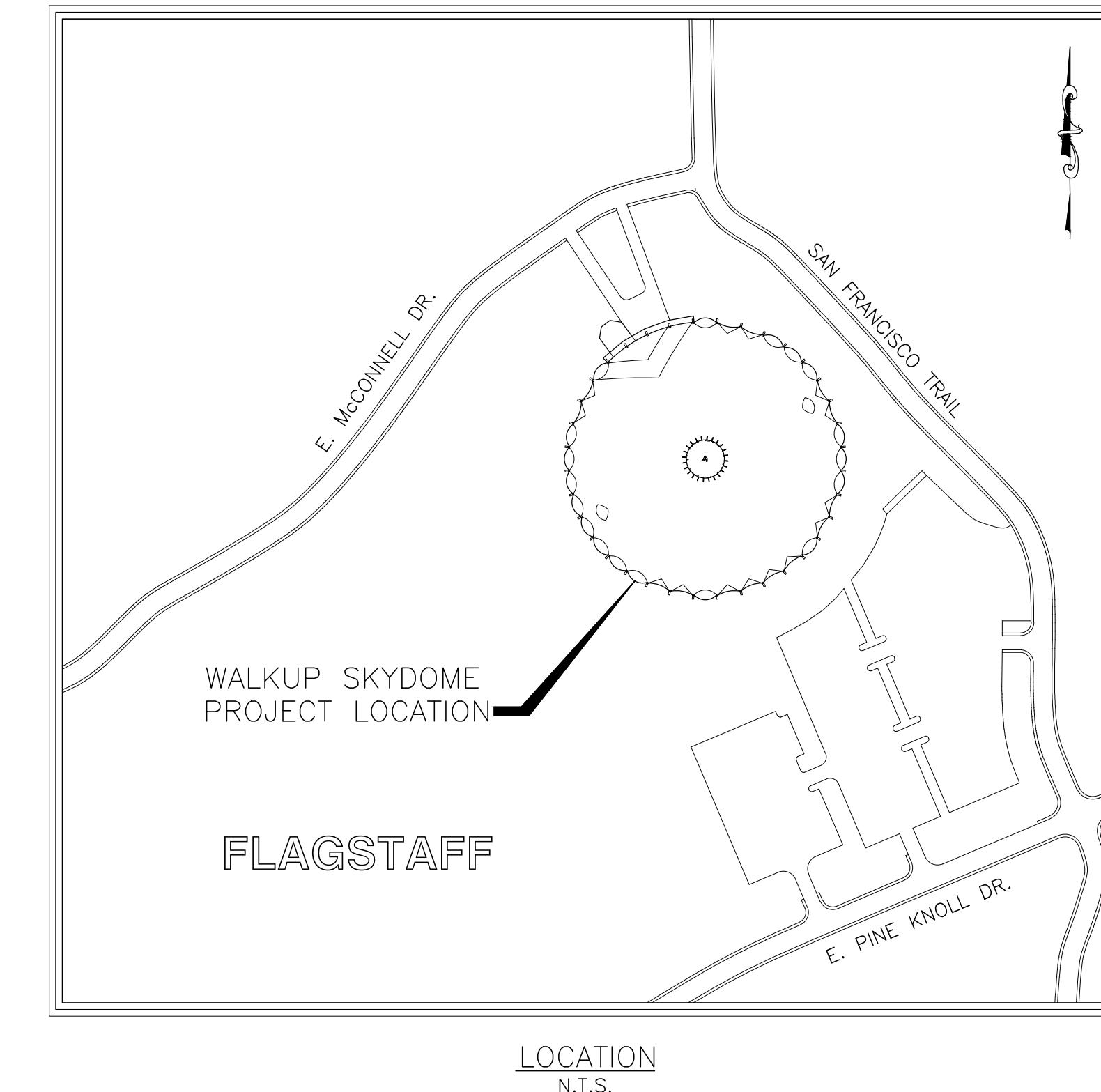
ROOF REPLACEMENT PROJECT 2017

FLAGSTAFF, AZ

APRIL, 2017

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**NORTHERN ARIZONA UNIVERSITY
WALKUP SKYDOME
FLAGSTAFF, AZ**

GENERAL NOTES



Drawn By: J.K.K.
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Date: 4/4/17
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Sheet No. **G-002**

GENERAL NOTES

ROOFING QUESTIONS

- THE CONTRACTOR SHALL RESOLVE ANY AND ALL QUESTIONS REGARDING THE INTENT OF THE PROJECT, OR CONFLICTS WITH THE ROOF SYSTEM MANUFACTURER'S REQUIREMENTS, WITH THE CONSULTANT PRIOR TO SUBMITTING CONTRACTOR'S PROPOSAL.
- ALL QUESTIONS PERTAINING TO THE BIDDING/CONTRACT DOCUMENTS FOR THIS PROJECT SHALL BE DIRECTED TO THE CONSULTANT AND NOT TO THE OWNER THROUGHOUT THE COURSE OF THE WORK.

DOCUMENT EXAMINATION

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING THE BIDDING DOCUMENTS TO OBTAIN ESSENTIAL KNOWLEDGE OF PROPOSED CONDITIONS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR VERIFICATION OF DESIGN INTENT AND PROPOSED CONDITIONS; NO ADDITIONAL COSTS WILL BE APPROVED FOR CONDITIONS THAT COULD REASONABLY BE DETERMINED AT THE TIME OF BIDDING.
- THE CONTRACTOR SHALL INCLUDE, IN CONTRACTOR'S PROPOSAL AMOUNT, ANY AND ALL COSTS INCURRED IN COMPLYING WITH THE BIDDING DOCUMENTS. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, HANDLING, DISCONNECTION AND RECONNECTION OF ROOFTOP EQUIPMENT/PENETRATIONS, CRANE COSTS, ELECTRICAL WORK, MECHANICAL WORK, TEMPORARY STORAGE, ETC.

COMPLIANCE

- THE CONTRACTOR REPRESENTS THAT THE CONTRACTOR HAS FAMILIARIZED ONESELF WITH THE LOCAL CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED, SATISFIED ONESELF OF THE CONDITION OF DELIVERY, HANDLING AND STORAGE OF MATERIALS, AND ALL OTHER MATTERS THAT MAY BE INCIDENTAL TO THE WORK, BEFORE SUBMITTING CONTRACTOR'S PROPOSAL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING AND COMPLYING WITH ALL ORDINANCES, CODES, AND LAWS GOVERNING BUSINESS PRACTICES AND CONSTRUCTION IN THE PROJECT LOCATION, INCLUDING THE ACQUISITION OF ALL NECESSARY PERMITS.
- THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY AND LIABILITY FOR COMPLIANCE WITH ALL STANDARDS PERTAINING TO WORK PRACTICES, HAULING, DISPOSAL, PROTECTION OF WORKERS, VISITORS TO THE SITE, AND PERSONS OCCUPYING AREAS ADJACENT TO THE SITE. THE CONTRACTOR SHALL HOLD THE OWNER AND OWNER'S REPRESENTATIVES HARMLESS FOR FAILURE TO COMPLY WITH ANY APPLICABLE STANDARD ON THE PART OF THE CONTRACTOR, THE CONTRACTOR'S EMPLOYEES OR THE CONTRACTOR'S SUBCONTRACTORS.
- OSHA AND THE OWNER'S SAFETY RULES AND REGULATIONS MUST BE STRICTLY ENFORCED AND ADHERED TO BY THE CONTRACTOR, AND ANY CONTRACTOR SUB-PARTY AT ALL TIMES. NO DEVIANCE FROM KNOWN SAFETY PERFORMANCE STANDARDS AND DIRECTIVES WILL BE PERMITTED.
- THE CONTRACTOR SHALL CONSIDER THE SAFE IMPLEMENTATION OF DAILY WORK ACTIVITY PARAMOUNT, AND AT NO TIME SHALL THE SAFETY OF THE WORKER BE COMPROMISED TO ACCOMMODATE OTHER CONSTRUCTION CONSTRAINTS.
- UPON REQUEST, THE CONTRACTOR SHALL DEVELOP AND IMPLEMENT A SITE SPECIFIC SAFETY PLAN FOR THIS PROJECT. THE PLAN SHALL OUTLINE THE ACTIVITIES, THE HAZARDS ASSOCIATED WITH THE ACTIVITIES AND THE CONTROLS TO BE USED TO ADDRESS THE HAZARD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS.
- EXCEPT WHERE SPECIFICATIONS INDICATE EXACT STANDARDS OF WORKMANSHIP, THE CONTRACTOR SHALL COMPLY WITH RECOGNIZED INDUSTRY STANDARDS AND MANUFACTURER'S REQUIREMENTS.
- THE CONTRACTOR SHALL STAFF THE PROJECT WITH PERSONNEL QUALIFIED TO PRODUCE WORKMANSHIP OF SPECIFIED QUALITY AND TO MEET THE ESTABLISHED SCHEDULE. CONTRACTOR PERSONNEL AT THE SITE SHALL BE EXPECTED TO COMMUNICATE WELL WITH THE OWNER AND CONSULTANT AND MEET ALL COORDINATION REQUIREMENTS.

COORDINATION

- THE CONTRACTOR IS EXPECTED TO HAVE A COPY OF THE BIDDING/CONTRACT DOCUMENTS, ADDENDA, SUBmittALS, SHOP DRAWINGS AND DATA SHEETS ON SITE AT ALL TIMES FOR REVIEW BY THE OWNER AND CONSULTANT.
- THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE OWNER AND THE CONSULTANT.
- THE CONTRACTOR SHALL COORDINATE AND COMMUNICATE THE PROJECT SCHEDULE FOR CONSTRUCTION ACTIVITIES WITH THE OWNER, CONSULTANT, SUB-CONTRACTOR(S) AND ALL OTHER TRADES.
- THE CONTRACTOR'S SITE REPRESENTATIVE SHALL DISCUSS AND DOCUMENT DAILY THE PROGRESS OF THE PROJECT AND PROVIDE WEEKLY REPORTS TO OWNER AND THE CONSULTANT.
- REGARDLESS OF CIRCUMSTANCES, THE CONTRACTOR SHALL NOTIFY THE CONSULTANT OF ANY AND ALL CHANGES IN THE SCOPE OF WORK DUE TO UNFORESEEN CONDITIONS WITHIN 24-HOURS. ANY ADDITIONAL COSTS TO THE OWNER SHALL BE DISCLOSED AND SUBMITTED IN WRITING FOR APPROVAL BEFORE ANY WORK PROCEEDS. ANY ADDITIONAL COSTS MUST BE APPROVED BY THE OWNER AND CONSULTANT.
- SUPPORT DOCUMENTATION SHALL BE PROVIDED FOR ANY AND ALL CHANGES IN THE WORK. DOCUMENTATION SHALL INCLUDE PHOTOGRAPHS PRIOR TO AND AFTER CORRECTIVE ACTION AS WELL AS AS-BUILT DRAWINGS REFERENCING THE LOCATION OF THE WORK PERFORMED AND THE QUANTITY OF WORK COMPLETED.

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

- IF PERMISSIBLE BY THE OWNER, THE CONTRACTOR IS ENCOURAGED TO PHOTOGRAPH OR VIDEOTAPE EXISTING CONDITIONS OF ADJACENT CONSTRUCTION AND SITE IMPROVEMENTS THAT MIGHT BE CONSTRUED AS DAMAGE CAUSED BY REROOF OPERATIONS. IN THE EVENT THAT PHOTOGRAPHY IS NOT ALLOWED, THE CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SAID CONDITIONS. PHOTOGRAPHS, VIDEOTAPE AND/OR WRITTEN DOCUMENTATION SHALL BE SUBMITTED TO THE OWNER AND CONSULTANT PRIOR TO THE START OF WORK.

20. IF AVAILABLE AT THE SITE, THE OWNER WILL PROVIDE ACCESS TO POWER AND WATER AS NECESSARY FOR THE PERFORMANCE OF THE WORK. THE CONTRACTOR MAY DEEM NECESSARY AND ELECT TO PROVIDE GENERATORS FOR ELECTRIC POWER; THE CONTRACTOR SHALL PROVIDE ALL CONVEYANCE FOR POWER AND WATER FOR THE DURATION OF THE PROJECT.

21. THE CONTRACTOR SHALL PROVIDE PORTABLE TOILET FACILITIES FOR USE BY CONTRACTOR'S EMPLOYEES DURING THE COURSE OF THE WORK. TOILETS SHALL BE PLACED ON-SITE IN AN AREA DESIGNATED BY THE OWNER; TOILETS SHALL BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION AND REMOVED AT THE END OF THE PROJECT.

22. THE CONTRACTOR SHALL COMPLY WITH THE OWNER'S VEHICLE SITE POLICIES AND SHALL RESTRICT VEHICLE PARKING TO AREAS DESIGNATED BY THE OWNER. THE CONTRACTOR SHALL RESTRICT CONTRACTOR'S USE OF THE SITE, FOR EQUIPMENT SET-UP AND MATERIAL STORAGE TO AREAS DESIGNATED BY THE OWNER.

23. THE CONTRACTOR SHALL NOT BE PERMITTED TO RESTRICT THE FLOW OF TRAFFIC AROUND THE PROJECT SITE WITHOUT PRIOR WRITTEN AUTHORIZATION. THE CONTRACTOR SHALL MAINTAIN A VEHICLE ACCESS LANE AROUND PROJECT STAGING AND SET-UP AT ALL TIMES, AND PROVIDE PROTECTIVE TRAFFIC WAY FOR MATERIAL HANDLING AND EMPLOYEE/VEHICLE TRAFFIC.

24. THE CONTRACTOR SHALL REMOVE DEBRIS FROM THE ROOFTOP AS IT ACCUMULATES AND SHALL TAKE CARE TO PREVENT IT FROM ENTERING STORM SEWERS, ETC. ALL REMOVAL SHALL BE IN ACCORDANCE WITH SITE REQUIREMENTS, AND APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS. DEBRIS SHALL BE REMOVED FROM THE SITE DAILY.

25. ALL DEBRIS REMOVED FROM THE PROJECT SITE SHALL BE DISPOSED OF AT A LEGALLY APPROVED DUMPING SITE FOR THE SPECIFIED TYPE OF MATERIAL. THE CONTRACTOR SHALL PROVIDE AN APPROPRIATE VEHICLE, RECEPTACLE OR SERVICE FOR CONVEYANCE AND BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH DISPOSAL.

26. ALL MATERIALS AND EQUIPMENT DELIVERED TO THE PROJECT SITE SHALL BE PLACED IN A LOCATION APPROVED FOR USE BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STORAGE AND SECURITY OF ALL MATERIALS AND EQUIPMENT.

27. ALL MATERIALS DELIVERED TO THE SITE SHALL BE STORED A MINIMUM OF 4-INCHES ABOVE GRADE OR ABOVE THE ROOF SURFACE WITH PROTECTIVE TARPS.

28. CONTRACTOR SHALL PROVIDE CLEAN PROTECTIVE TARPS TO PROTECT BUILDING FINISHES AT ACCESS POINTS, AT SET-UP/STAGING AREAS AND AT ALL MATERIALS LOADING/HANDLING LOCATIONS. TARPS SHALL BE SECURED AGAINST WIND DAMAGE OR DISPLACEMENT THROUGHOUT THE DURATION OF THE PROJECT.

29. PROTECTIVE TARPS SHALL BE MAINTAINED IN FUNCTIONAL CONDITION WITH A CLEAN VISUAL APPEARANCE WHICH IS ACCEPTABLE TO OWNER. REPLACE TARPS THAT BECOME WORN, DAMAGED OR WHEN REQUESTED BY THE OWNER OR CONSULTANT.

30. CONTRACTOR SHALL LIMIT ACCESS TO BUILDING INTERIOR TO DESIGNATED AREAS AS APPROVED BY OWNER FOR INTERIOR PROTECTION AND COORDINATION ACTIVITIES.

ROOF DEMOLITION

- THE CONTRACTOR SHALL NOT PERFORM WORK IN THE PRESENCE OF RAIN, SNOW OR OTHER VISIBLE PRECIPITATION.
- PROVIDE INTERIOR PROTECTION, AS REQUIRED, UNDER THE AREA(S) OF WORK TO PREVENT THE ENTRY OF DUST AND DEBRIS INTO THE INTERIOR SPACE.
- REMOVE PORTIONS OF THE ROOF AREA IDENTIFIED IN THE DRAWINGS AND SPECIFICATIONS. REMOVE ALL RELATED SHEET METAL FLASHINGS, TRIMS AND COMPONENTS AS PART OF THE WORK.
- INSPECT EXISTING DECK AND SUBSTRATE CONDITIONS FOR DAMAGE AND/OR DETERIORATION. COMPLETE REPAIRS UPON APPROVAL BY THE OWNER AND THE CONSULTANT.
- REMOVE ALL ABANDONED CONDUIT, CABLING, EQUIPMENT, ETC. AS IDENTIFIED BY THE OWNER AND/OR AS OUTLINED IN THE DRAWINGS AND SPECIFICATIONS. PATCH ALL OPENINGS IN THE DECK OR SUBSTRATE.
- WHERE IDENTIFIED, COMPLETE TESTING REQUIREMENTS OF THE EXISTING DECK. SUBMIT WRITTEN RESULTS OF TESTING TO THE CONSULTANT.
- CLEAN DECK SURFACE FREE OF ALL DIRT, DEBRIS AND PROTRUSION THAT MAY AFFECT THE INSTALLATION OF THE ROOF SYSTEM.

ROOF INSTALLATION

- DURING THE COURSE OF THE PROJECT, THE ROOF SYSTEM MANUFACTURER SHALL PROVIDE QUALIFIED PERSONNEL TO OBSERVE THE WORK IN PROGRESS. INSPECTION INTERVALS SHALL BE AS OUTLINED IN THE CONTRACT DOCUMENTS AND A WRITTEN REPORT SHALL BE FURNISHED BY THE MANUFACTURER AT EACH INSPECTION INTERVAL.
- THE CONTRACTOR SHALL NOT INSTALL MATERIALS MARKED "KEEP FROM FREEZING" WHEN TEMPERATURES ARE FORECASTED TO FALL BELOW 40 DEG. F.
- INSTALL NEW PERIMETER WOOD NAILERS, BLOCKING AND PLYWOOD WHERE SHOWN OR INDICATED IN THE DRAWINGS AND SPECIFICATIONS. ATTACH NEW WOOD COMPONENTS SECURELY TO THE SUBSTRATE AND IN ACCORDANCE WITH PUBLISHED REQUIREMENTS.
- RAISE ALL ROOFTOP EQUIPMENT AND PENETRATIONS TO AN 8-INCH MINIMUM HEIGHT ABOVE THE FINISHED ROOF SURFACE. EXTEND ELECTRICAL WIRING, DUCTWORK, PIPING AND LINESETS TO ACCOMMODATE THE WORK.
- VERIFY THAT THE SUBSTRATE HAS BEEN CLEANED AND IS ACCEPTABLE TO RECEIVE THE SPECIFIED INSULATION. PREPARE THE SUBSTRATE, IF REQUIRED, IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
- INSTALL SPECIFIED INSULATION IN THE AREA OF WORK IN ACCORDANCE WITH WIND UPLIFT REQUIREMENTS AND MANUFACTURER'S PUBLISHED INSTRUCTIONS. AFFIXMENT OF THE INSULATION SHALL INCLUDE PRESCRIPTIVE ENHANCEMENTS AT PERIMETERS AND CORNERS OF THE ROOF AREA.
- INSTALL TAPERED INSULATION DRAIN SUMPS ADJACENT TO SCUPPERS. INSTALL TAPERED INSULATION CRICKETS ON THE UPSLOPE SIDE OF ALL ROOF CURBS TO ENHANCE DRAINAGE.
- INSTALL SPECIFIED ROOF SYSTEM IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE MANUFACTURER'S PUBLISHED INSTRUCTIONS. SECURELY ATTACH FLASHING TO THEIR SUBSTRATE(S) AS INDICATED ON DRAWINGS.

46. INSTALL WALKWAY PADS, AS SPECIFIED, AT TOP AND BOTTOM OF ROOF ACCESS MANLADDERS, AROUND SERVICEABLE ROOFTOP EQUIPMENT, BENEATH SUPPORTS AND SET-ON COMPONENTS. WALKWAYS PADS ARE CONSIDERED PART OF THE BASE BID.

47. INSTALL SHEET METAL COMPONENTS AS INDICATED IN THE SPECIFICATIONS AND ON THE DRAWINGS. SHEET METAL COMPONENTS MAY INCLUDE, BUT ARE NOT LIMITED TO: FASCIA, GRAVEL STOPS, SCUPPERS, DRIP EDGES, BASE FLASHINGS, RAIN COLLARS, COUNTERFLASHINGS AND CLOSURES. ALL SHEET METAL COMPONENTS SHALL BE SECURED ATTACHED TO THE SUBSTRATE TO MEET SPECIFIED WIND UPLIFT AND ATTACHMENT REQUIREMENTS.

48. THE ROOFING CONTRACTOR SHALL PERFORM A FINAL CLEANING OF THE PROJECT PRIOR TO THE CONSULTANT'S FINAL REVIEW. THE FINAL CLEANING SHALL INCLUDE THE ROOF SURFACE, DRAINAGE SYSTEM, AND FINISHED SURFACES AFFECTED BY THE WORK.

FINAL REVIEW

49. WHEN IN THE OPINION OF THE CONTRACTOR, THE PROJECT IS COMPLETE IN ALL RESPECTS, THE CONTRACTOR SHALL SUBMIT WRITTEN NOTIFICATION TO THE CONSULTANT AND REQUEST A FINAL REVIEW. ON RECEIPT OF THE REQUEST, A FINAL REVIEW WILL BE SCHEDULED WITH THE OWNER, CONTRACTOR, MANUFACTURER AND CONSULTANT.

50. IF THE WORK IS FOUND TO BE COMPLETE, THE CONTRACTOR IS EXPECTED TO DEMOBILIZE FROM THE PROJECT AND REMOVE ALL MATERIALS, EQUIPMENT AND DEBRIS AT THEIR EARLIEST CONVENIENCE. IF THE WORK IS FOUND TO BE INCOMPLETE, THE CONTRACTOR IS EXPECTED TO COMPLETE THE WORK AND MAY BE SUBJECT TO COSTS INCURRED BY BOTH THE OWNER AND THE CONSULTANT.

51. THE CONTRACTOR WILL BE RESPONSIBLE FOR RESTORING THE SITE AND GROUNDS BACK TO THEIR ORIGINAL PRE-CONSTRUCTION CONDITION. THE CONTRACTOR SHALL PROMPTLY REPAIR DAMAGE CAUSED BY CONSTRUCTION AS THE RESULT OF STAGING, STORAGE, DEMOLITION AND INSTALLATION WORK AT NO COST TO THE OWNER.

PROJECT CLOSE-OUT SUBMITTALS AND WARRANTIES

52. UPON WORK COMPLETION AND ACCEPTANCE OF THE PROJECT BY THE OWNER AND CONSULTANT, THE CONTRACTOR SHALL PROVIDE ALL SPECIFIED CLOSE-OUT DOCUMENTATION AND WARRANTIES.

53. THE PROJECT WILL NOT BE CONSIDERED COMPLETE, AND RETAINAGE MONIES WILL NOT BE RELEASED, UNTIL ALL REQUIRED CLOSE-OUT DOCUMENTATION HAS BEEN RECEIVED AND ACCEPTED BY THE OWNER AND CONSULTANT.

SPECIFIC ROOF SYSTEM SUBSTRATE PER ROOF AREA – WALKUP SKYDOME ROOF REPLACEMENT – WOOD DECK SUBSTRATE

54. REMOVE EXISTING HYALON ROOF MEMBRANE.

55. INSTALL NEW POLYISOCYANURATE ROOF INSULATION OVER EXISTING 1/4" GYPSUM COVER BOARD WITH MECHANICAL FASTENERS TO MEET FACTORY MUTUAL (FM) 1-120.

56. REMOVE EXISTING METAL FLASHING.

57. FURNISH AND INSTALL NEW 1/4" GYPSUM COVER BOARD IN ADHESIVE.

58. FURNISH AND INSTALL NEW FIBERITE 50XT FLEECE BACK ROOF MEMBRANE IN ADHESIVE.

59. FURNISH AND INSTALL NEW METAL ROOFING AND SIDING ON BRACES AT UPPER ROOF AREA.

60. FURNISH AND INSTALL MEMBRANE CLAD METAL SCUPPERS AT UPPER ROOF AREA.

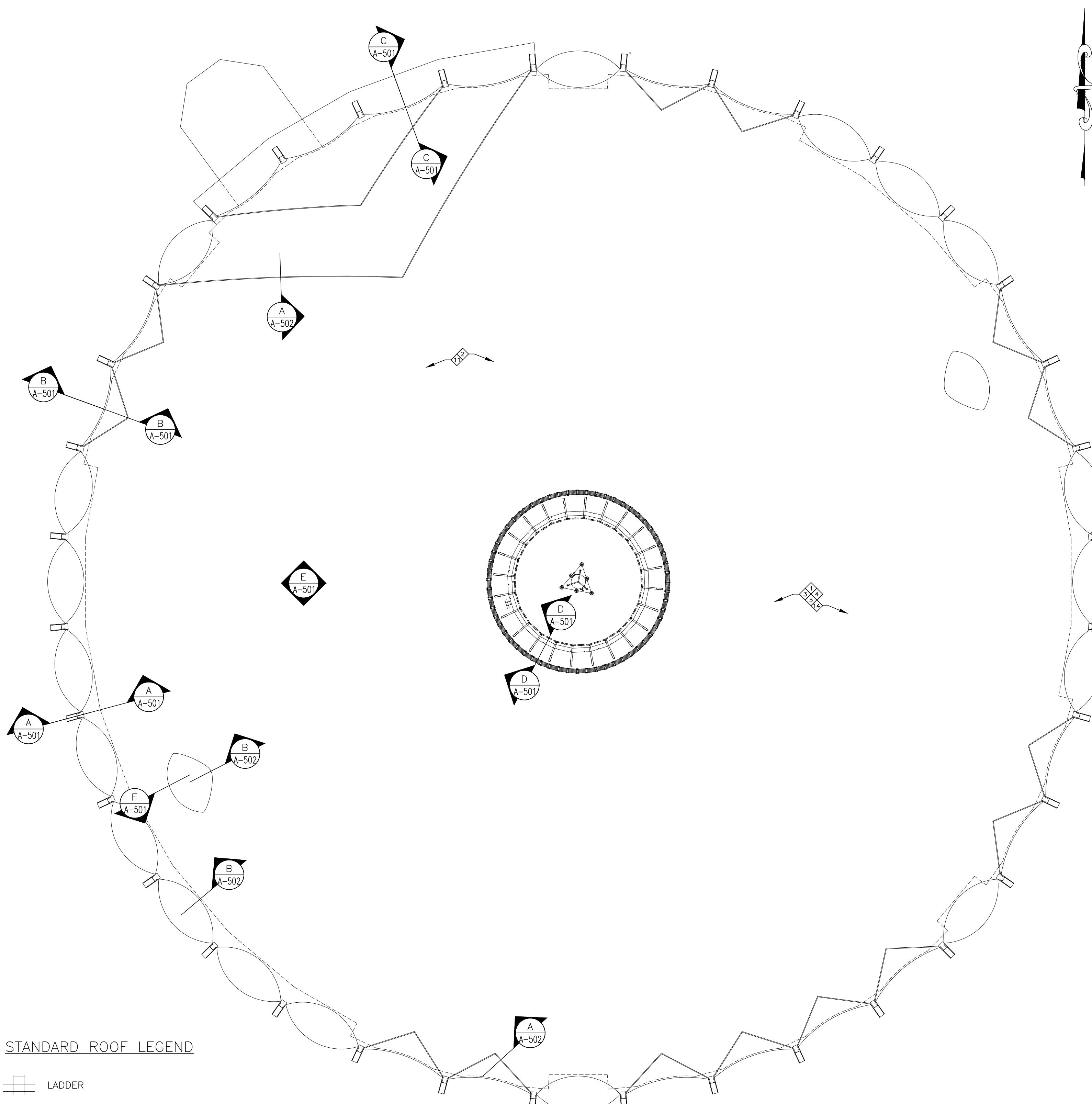
61. FURNISH AND INSTALL NEW WOOD BLOCKING AND SHEET METAL FLASHINGS AS REQUIRED BY CONTRACT DOCUMENTS.

62. FURNISH AND INSTALL NEW SAFETY RAILING AROUND SKYLIGHT AS SHOWN IN CONTRACT DOCUMENTS.

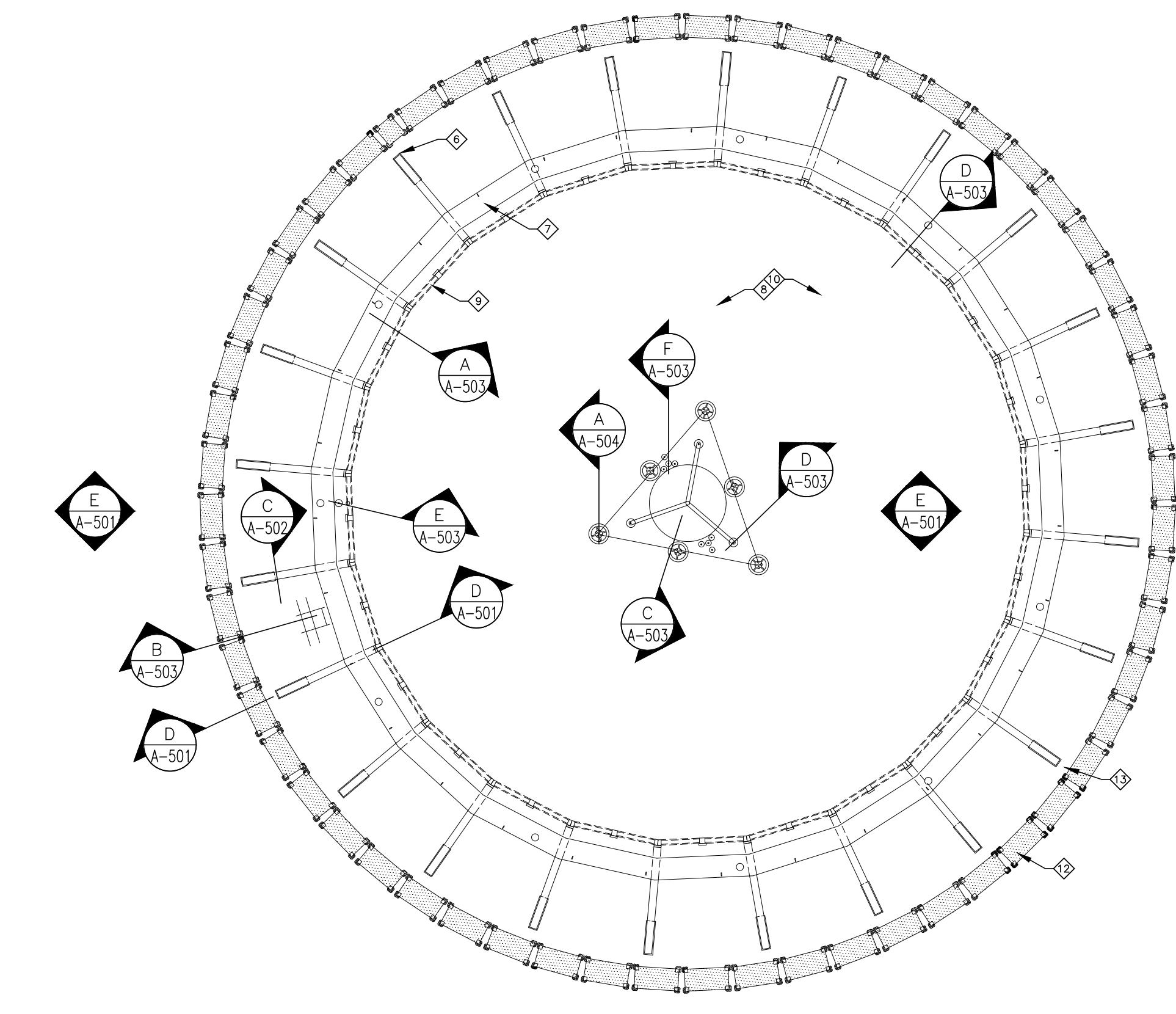
63. COORDINATE REMOVAL OF LIGHTNING PROTECTION EQUIPMENT WITH OWNER.

64. FURNISH AND INSTALL NEW SPRING LOADED LIGHTNING PROTECTION SYSTEM. SYSTEM MUST BE INSTALLED BY CERTIFIED CONTRACTOR. (ALTERNATE #1)

65. FURNISH AND INSTALL NEW TRAFFIC PADS WHERE SHOWN ON DRAWINGS.



A-101 WALK UP SKYDOME ROOF PLAN
SCALE: 1/32" = 1'-0"
0 8 16 24 32 48 64
SCALE: 1/32" = 1'-0"



KEYED NOTES:

- COORDINATE ALL REQUIRED ELECTRICAL AND MECHANICAL DISCONNECTS WITH THE OWNER PRIOR TO THE START OF WORK. REMOVE EXISTING CSPE ROOF MEMBRANE, FLASHINGS, PERIMETER SHEET METAL, AND PENETRATION FLASHING SHEET METAL. INSPECT EXISTING GYPSUM BOARD FOR ANY DAMAGE AND REPORT CONDITIONS TO CONSULTANT.
- COORDINATE REMOVAL OF LIGHTNING ROD PROTECTION SYSTEM WITH OWNER AND UNDERWRITERS LABORATORIES (UL) CERTIFIED CONTRACTOR. PROVIDE TEMPORARY LIGHTNING PROTECTION AS REQUIRED.
- MECHANICALLY ATTACH EXISTING GYPSUM BOARD AND POLYISOCYANURATE ROOF INSULATION TO WOOD DECK TO MEET FACTORY MUTUAL (FM) 1-120 WIND UPLIFT REQUIREMENTS.
- INSTALL NEW 1/4-INCH GYPSUM BOARD OVER EXISTING INSTALLED IN FOAM ADHESIVE TO MEET FM 1-120 REQUIREMENTS.
- FULLY ADHERE NEW .050" KEE ROOF MEMBRANE OVER GYPSUM COVER BOARD.
- INSTALL NEW SELF-ADHERED UNDERLAYMENT ON UPPER STRUCTURAL BRACES. INSTALL METAL WALL PANELS ON BRACES WITH METAL COPING CAP AS SPECIFIED.
- INSTALL NEW SELF-ADHERED UNDERLAYMENT AND STANDING SEAM METAL ROOF PANELS ON MANSARD ROOF AREAS OF UPPER ROOF.
- FABRICATE AND INSTALL MEMBRANE COATED METAL FLASHINGS AS SHOWN IN DETAILS.
- FABRICATE AND INSTALL MEMBRANE COATED METAL SCUPPERS AT BASE OF UPPER ROOF AREA. FLASH SCUPPERS IN INTERIOR OF BUILDING WITH PMMA FLASHING SYSTEM.
- PROVIDE AND INSTALL NEW MEMBRANE AND SHEET METAL FLASHINGS AT ALL ROOF PENETRATIONS.
- NEW LIGHTNING PROTECTION SYSTEM TO BE DESIGNED AND INSTALLED BY A UL CERTIFIED CONTRACTOR. AIR TERMINALS SHALL BE SPRING LOADED.
- PROVIDE AND INSTALL NEW TRAFFIC PAD AROUND PERIMETER OF UPPER ROOF AS SHOWN ON DRAWINGS. PROVIDE TRAFFIC PADS AT BASE AND TOP OF LADDER.
- INSTALL TRAFFIC PADS UNDER SATELLITE DISH. COORDINATE WITH OWNER ALL SATELLITE DISCONNECTS PRIOR TO START OF WORK.
- PROVIDE CONTRACTOR'S AND MANUFACTURER'S WARRANTY

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OVERALL ROOF PLAN AND
ENLARGED TOP SKYLIGHT STRUCTURE ROOF PLAN

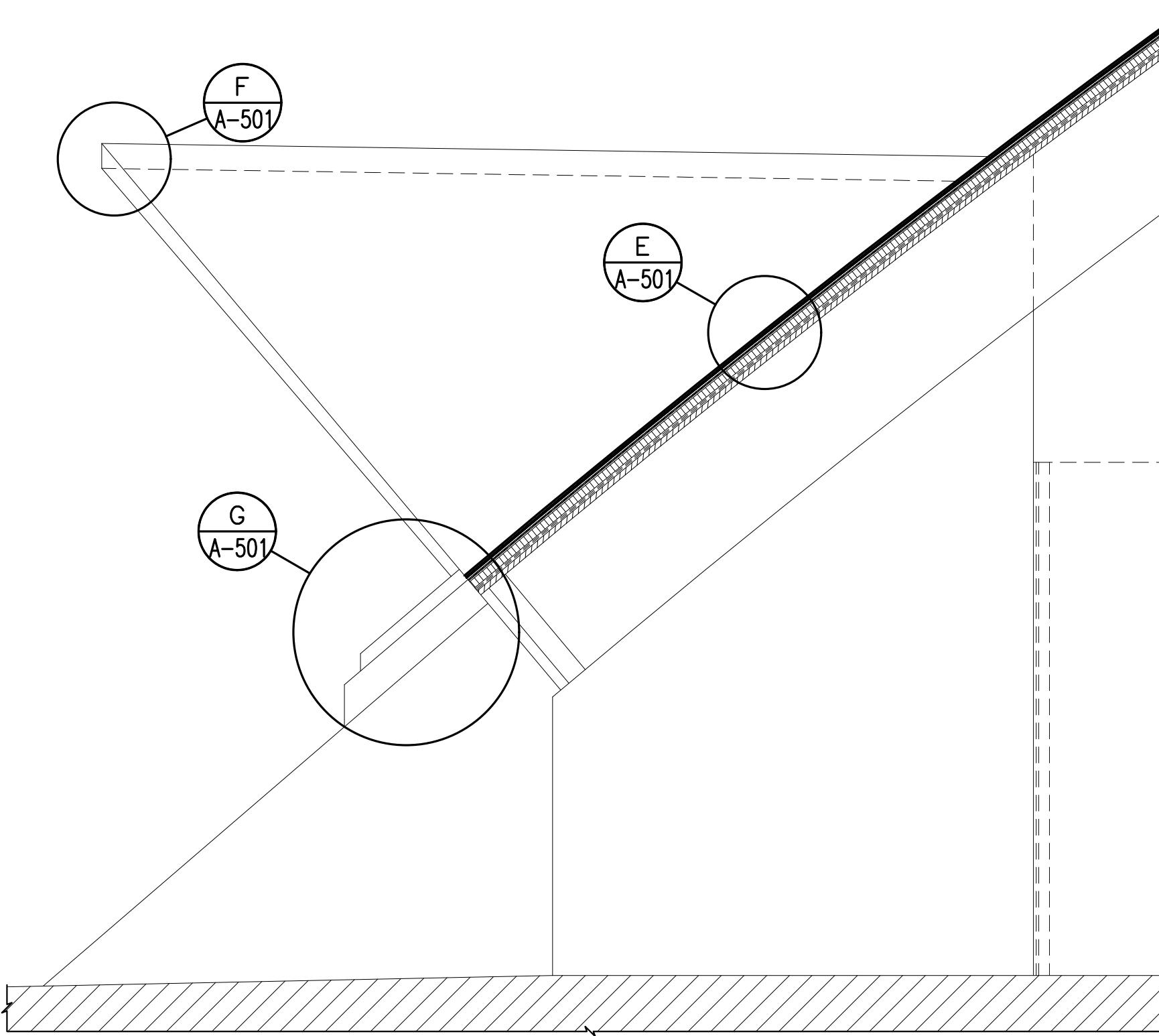


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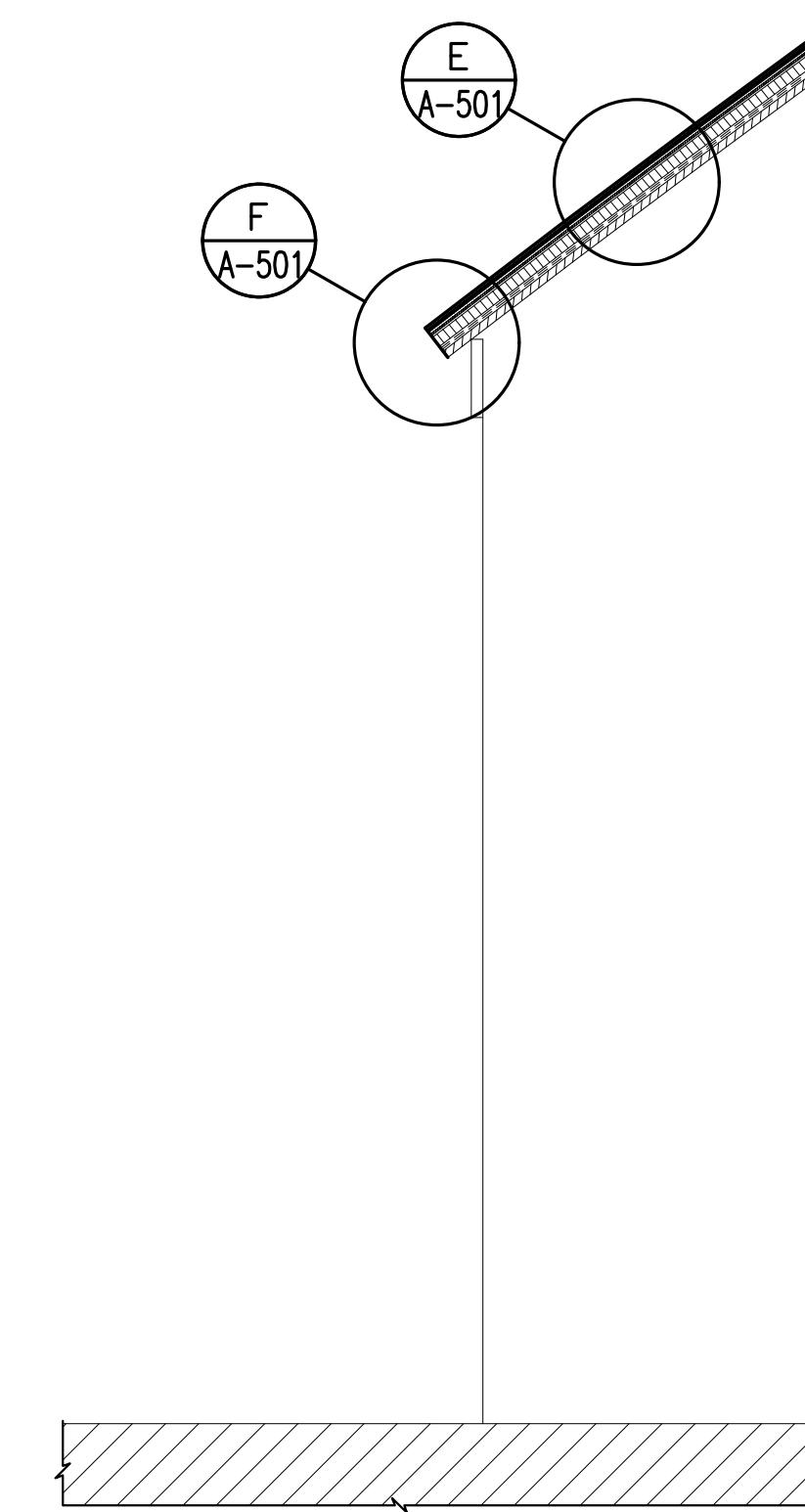
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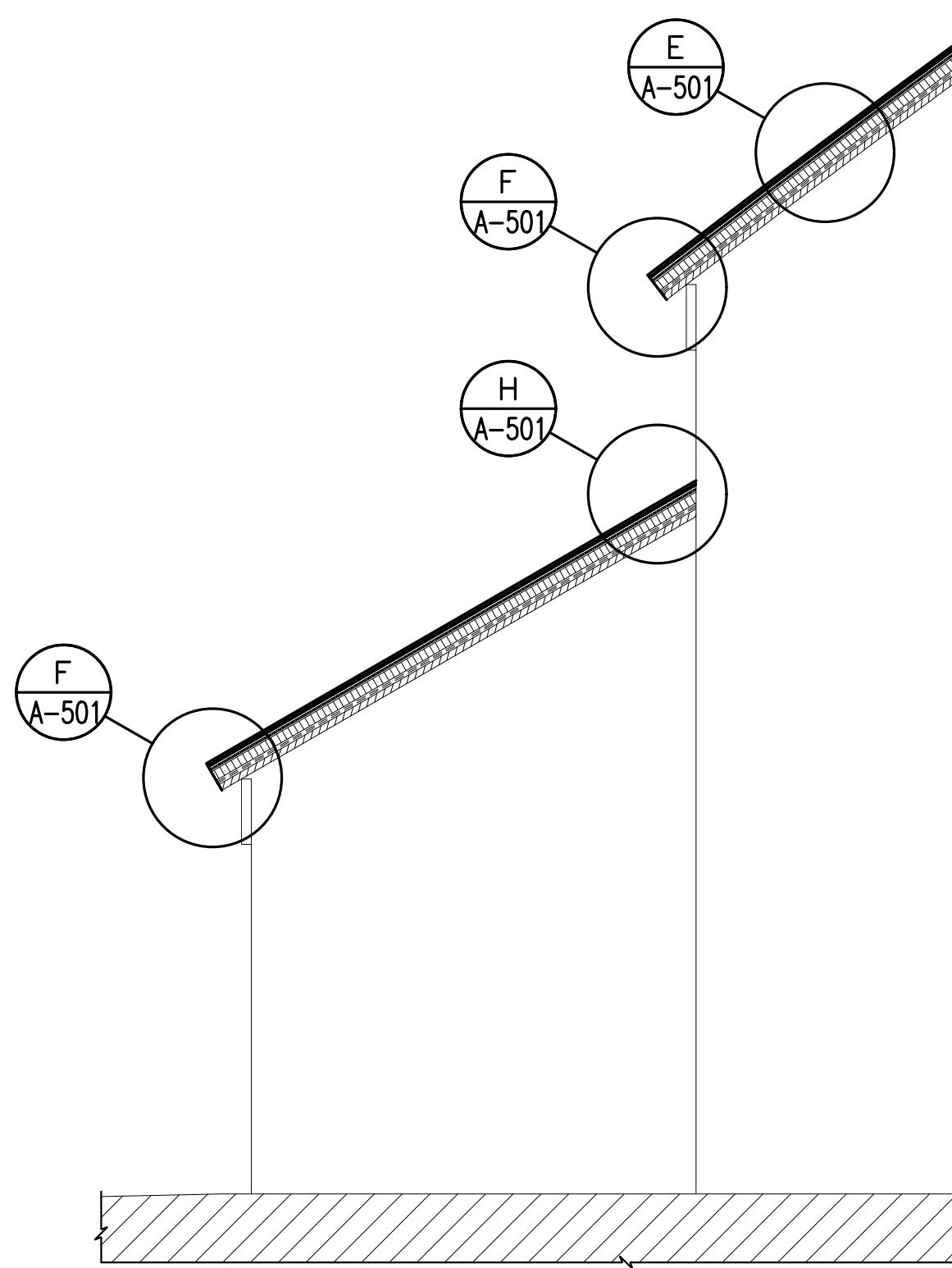
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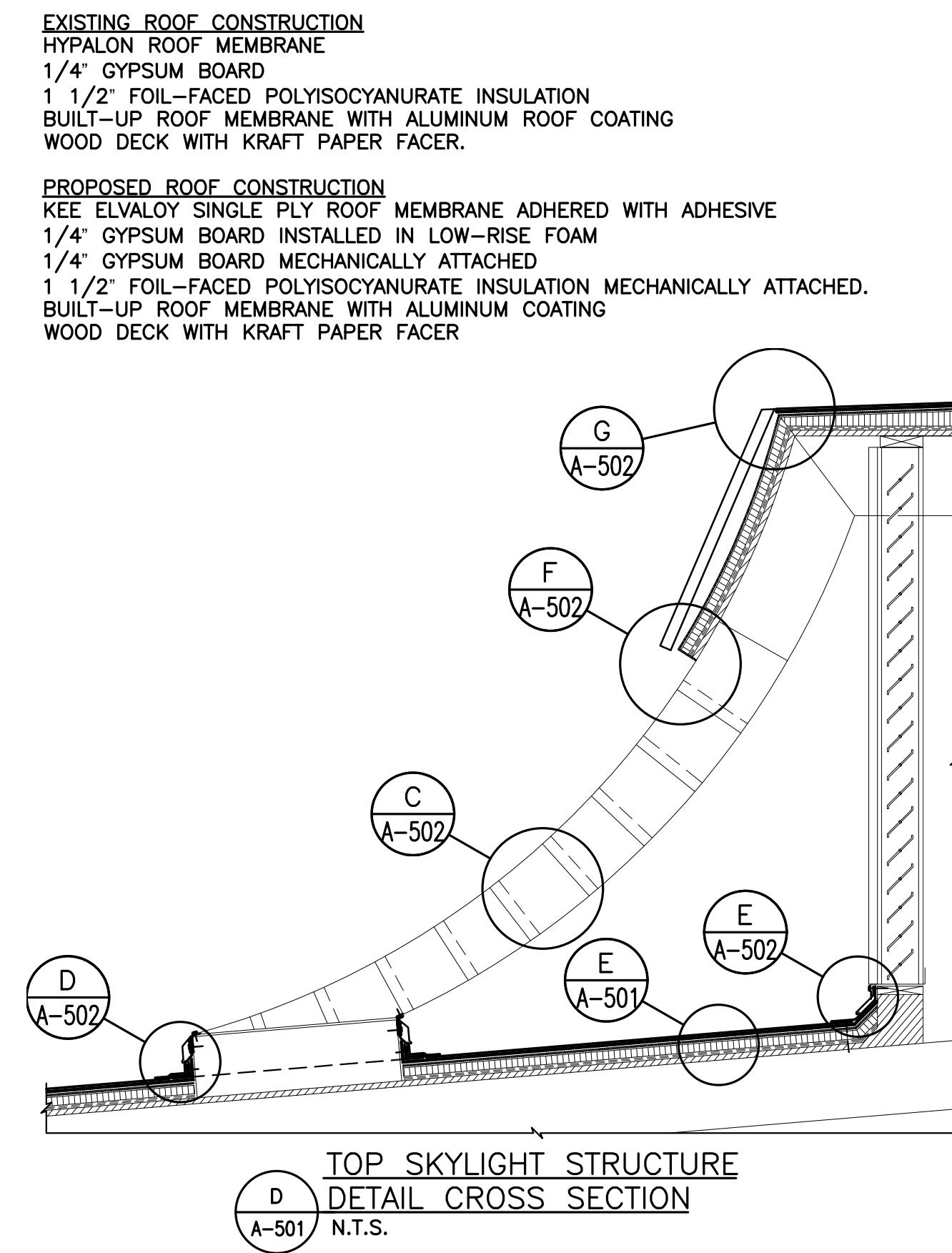
A-501 ENTRANCE AND EYEBROW ROOF
DETAIL CROSS SECTION
N.T.S.



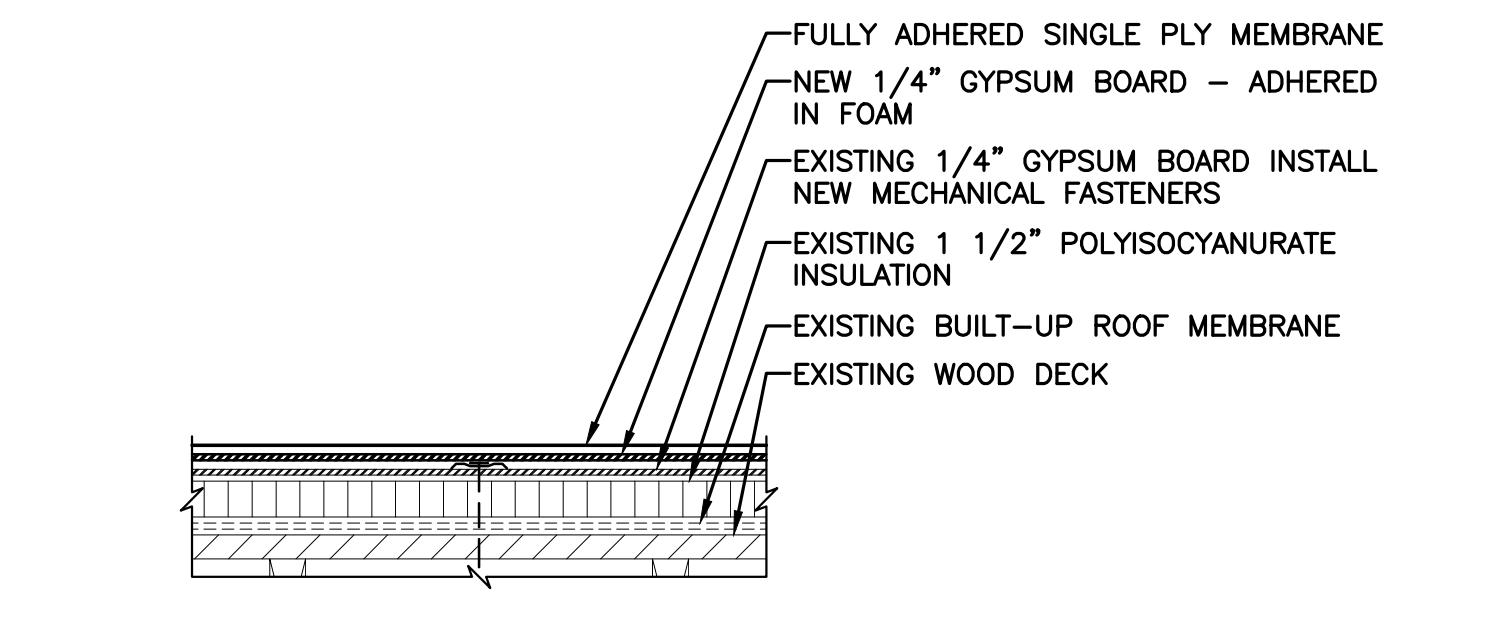
B-501 DETAIL CROSS SECTION
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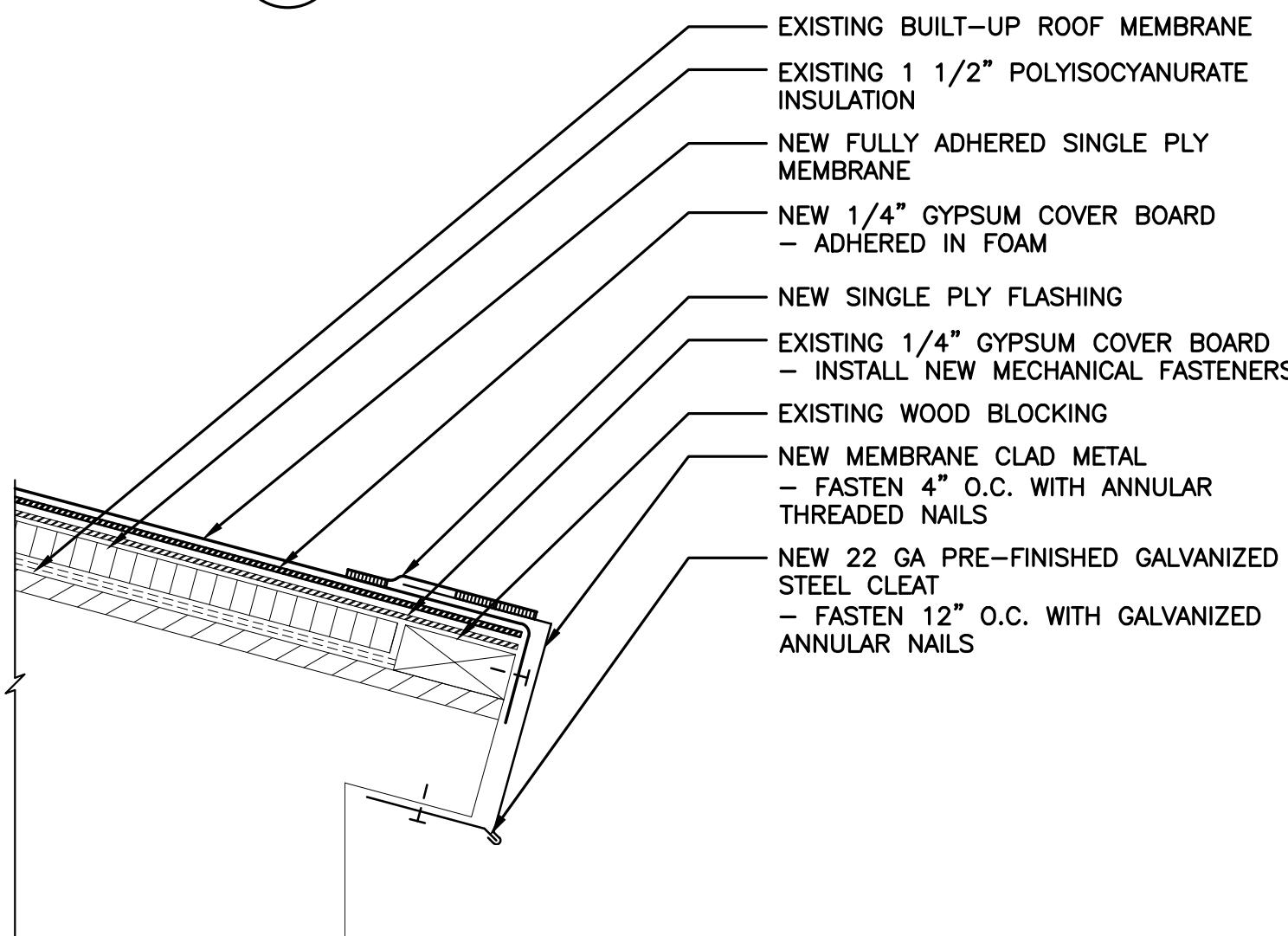
C-501 DETAIL CROSS SECTION
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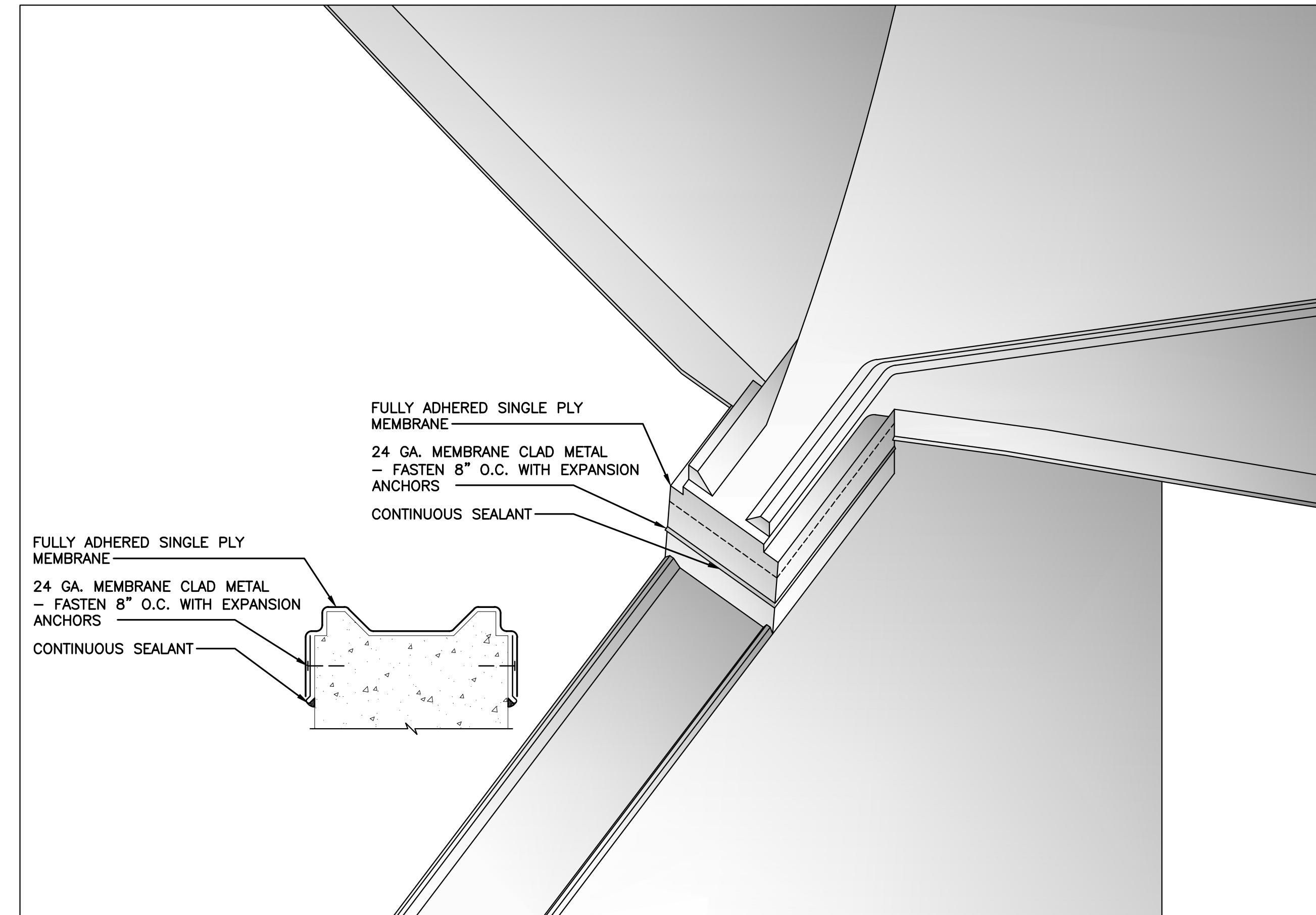
D-501 TOP SKYLIGHT STRUCTURE
DETAIL CROSS SECTION
N.T.S.



E-501 ROOF SYSTEM DETAIL
N.T.S.



F-501 LOW EAVE DETAIL
N.T.S.

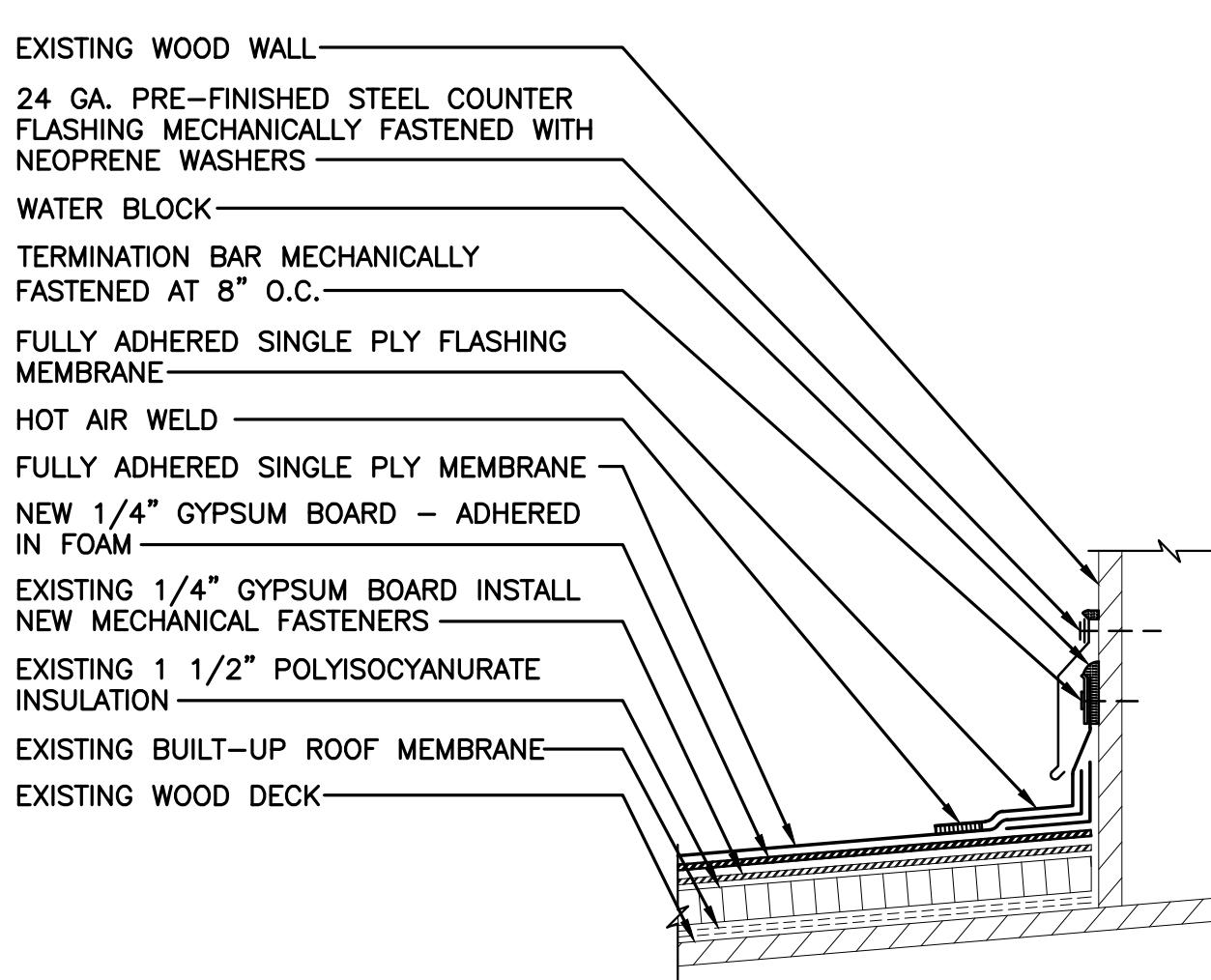


G-501 TYPICAL CONCRETE COLUMN DRAIN DISCHARGE DETAIL
N.T.S.

EXISTING ROOF CONSTRUCTION
HYPALON ROOF MEMBRANE
1/4" GYPSUM BOARD
1 1/2" FOIL-FACED POLYISOCYANURATE INSULATION
BUILT-UP ROOF MEMBRANE WITH ALUMINUM ROOF COATING
WOOD DECK WITH KRAFT PAPER FACER.

PROPOSED ROOF CONSTRUCTION
KEE ELVALOY SINGLE PLY ROOF MEMBRANE ADHERED WITH ADHESIVE
1/4" GYPSUM BOARD INSTALLED IN LOW-RISE FOAM
1/4" GYPSUM BOARD MECHANICALLY ATTACHED
1 1/2" FOIL-FACED POLYISOCYANURATE INSULATION MECHANICALLY ATTACHED.
BUILT-UP ROOF MEMBRANE WITH ALUMINUM COATING
WOOD DECK WITH KRAFT PAPER FACER

H-501 BASE FLASHING AT WOOD WALL DETAIL
N.T.S.



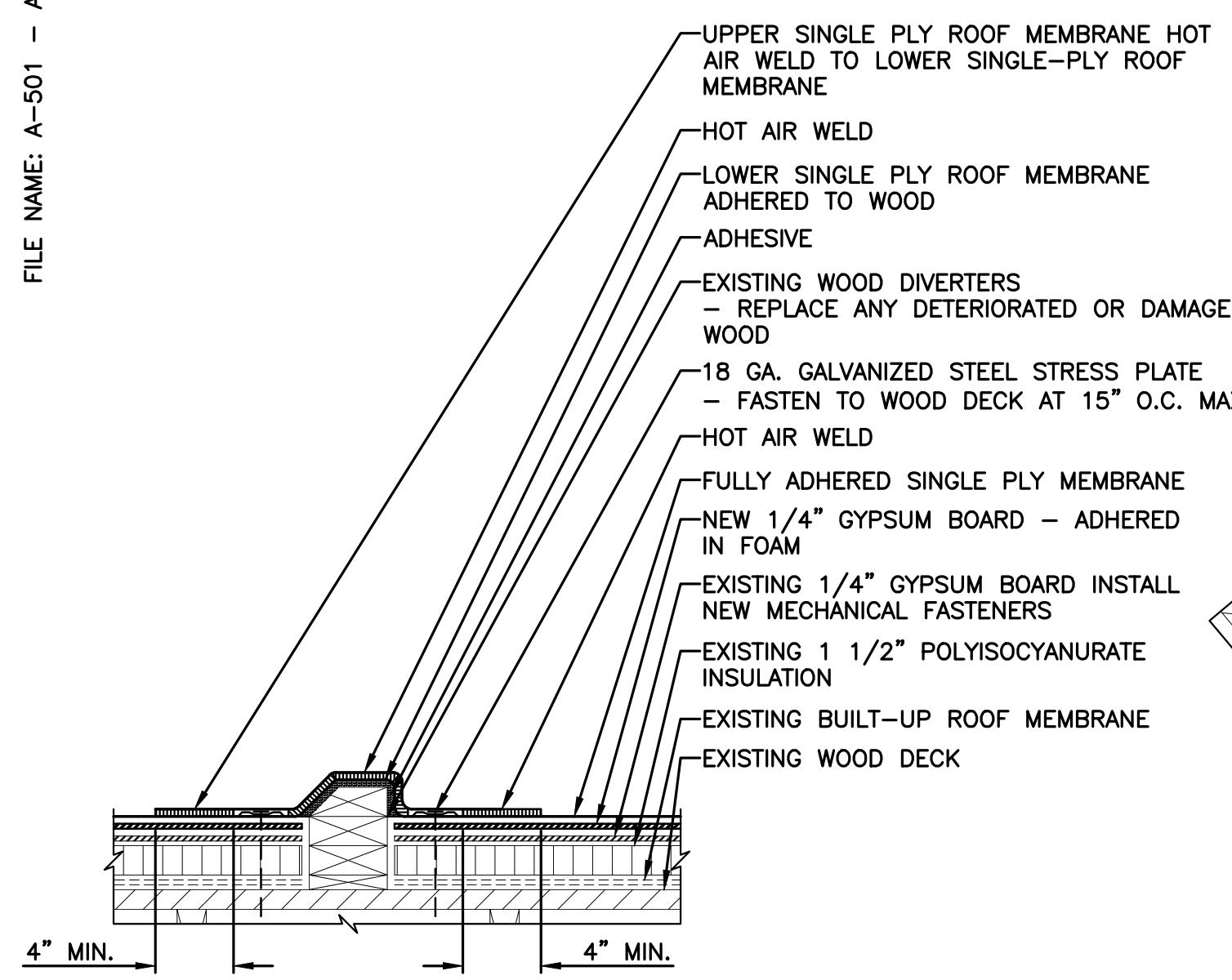
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WALKUP SKYDOME
FLAGSTAFF, AZ
ROOF DETAILS**



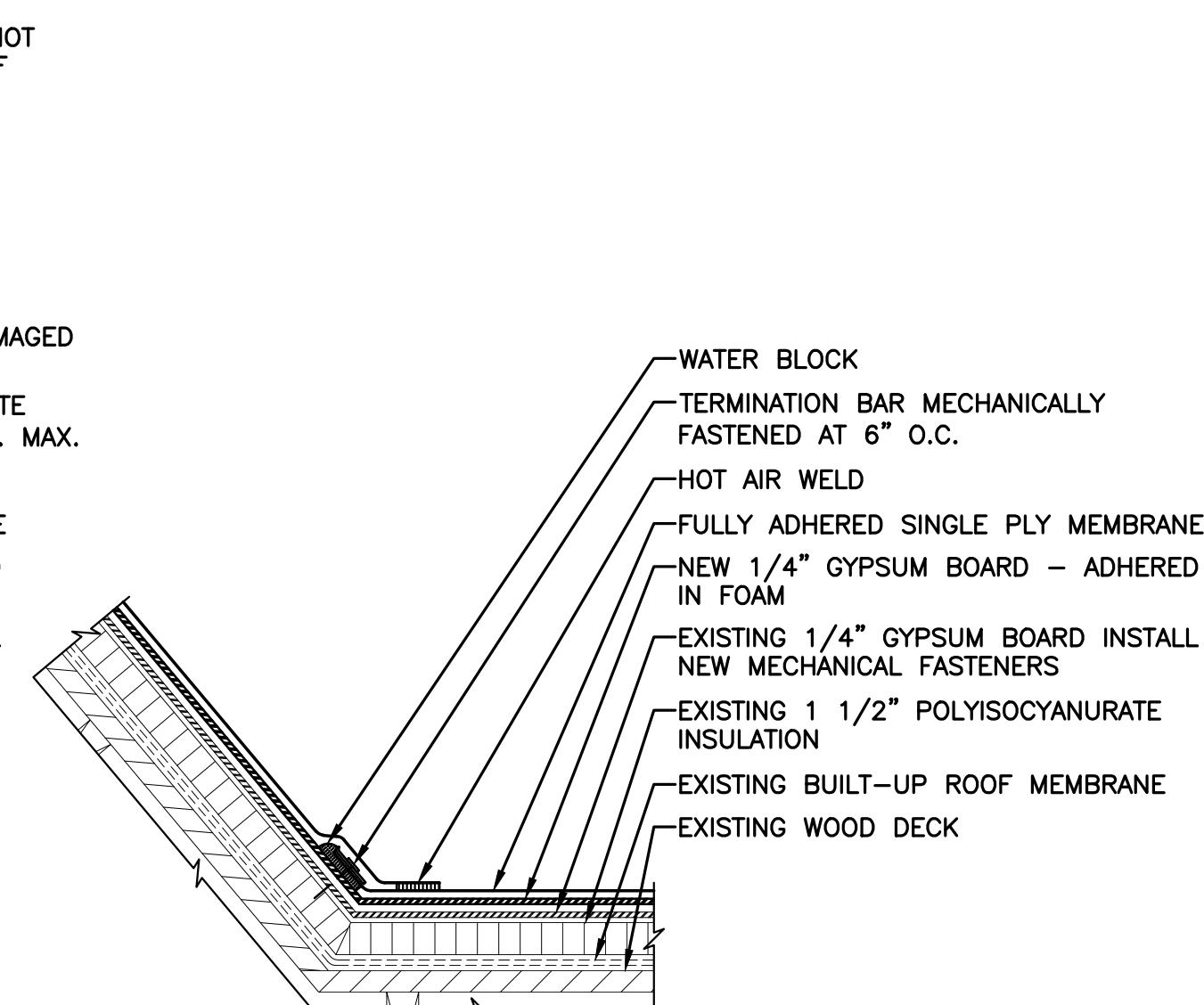
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A-501

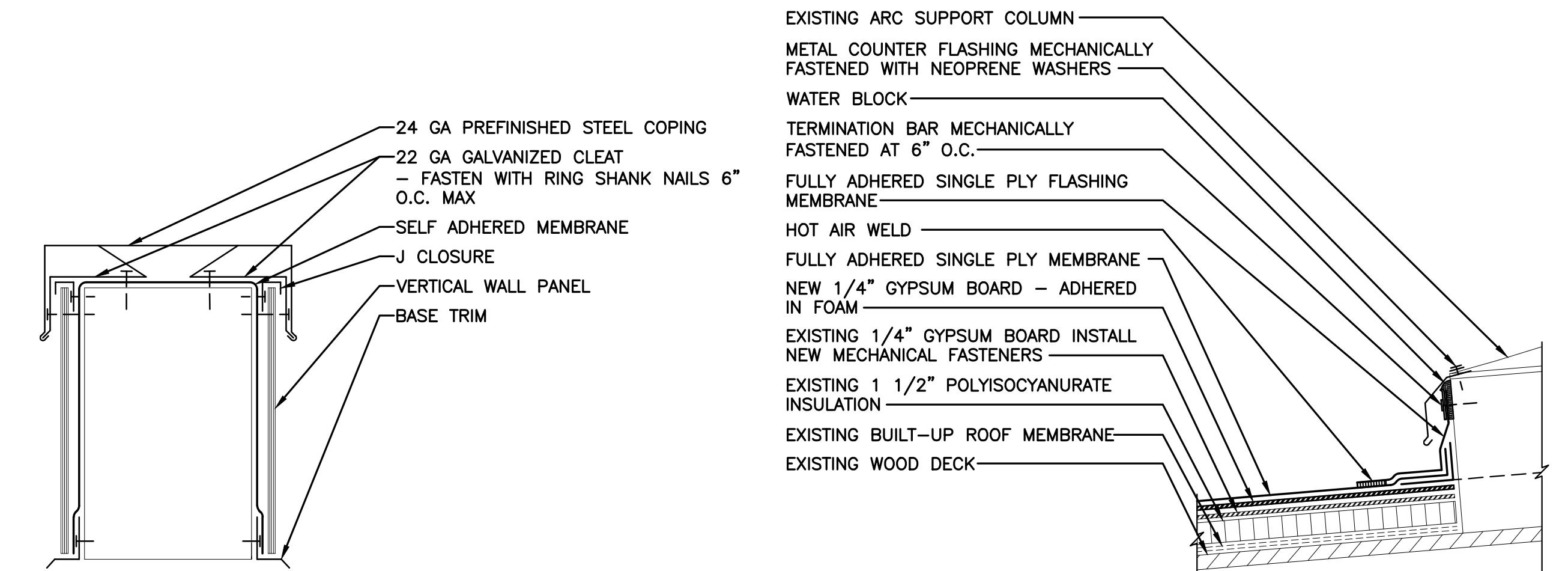




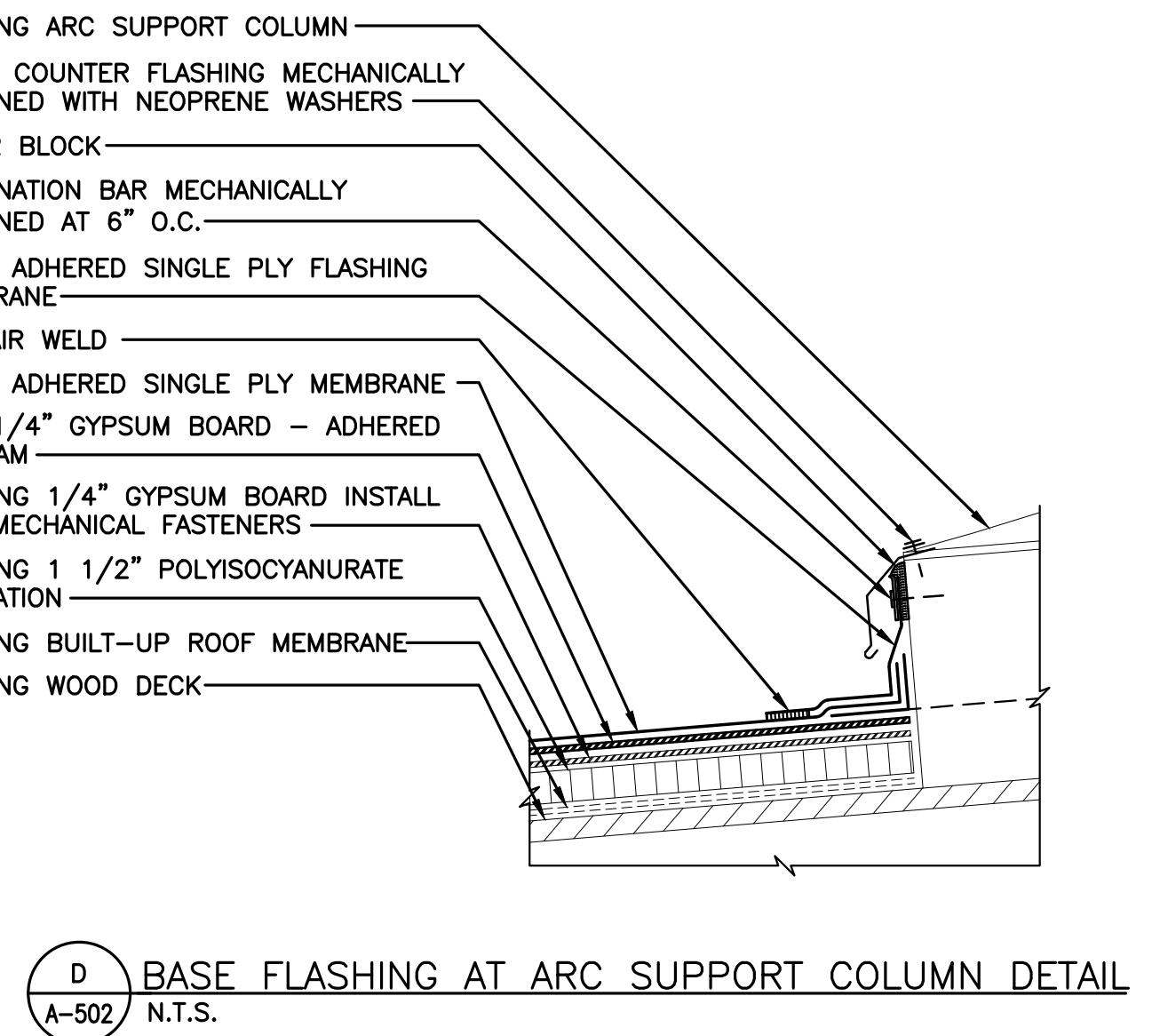
A WATER/SNOW DIVERTER DETAIL
A-502 N.T.S.



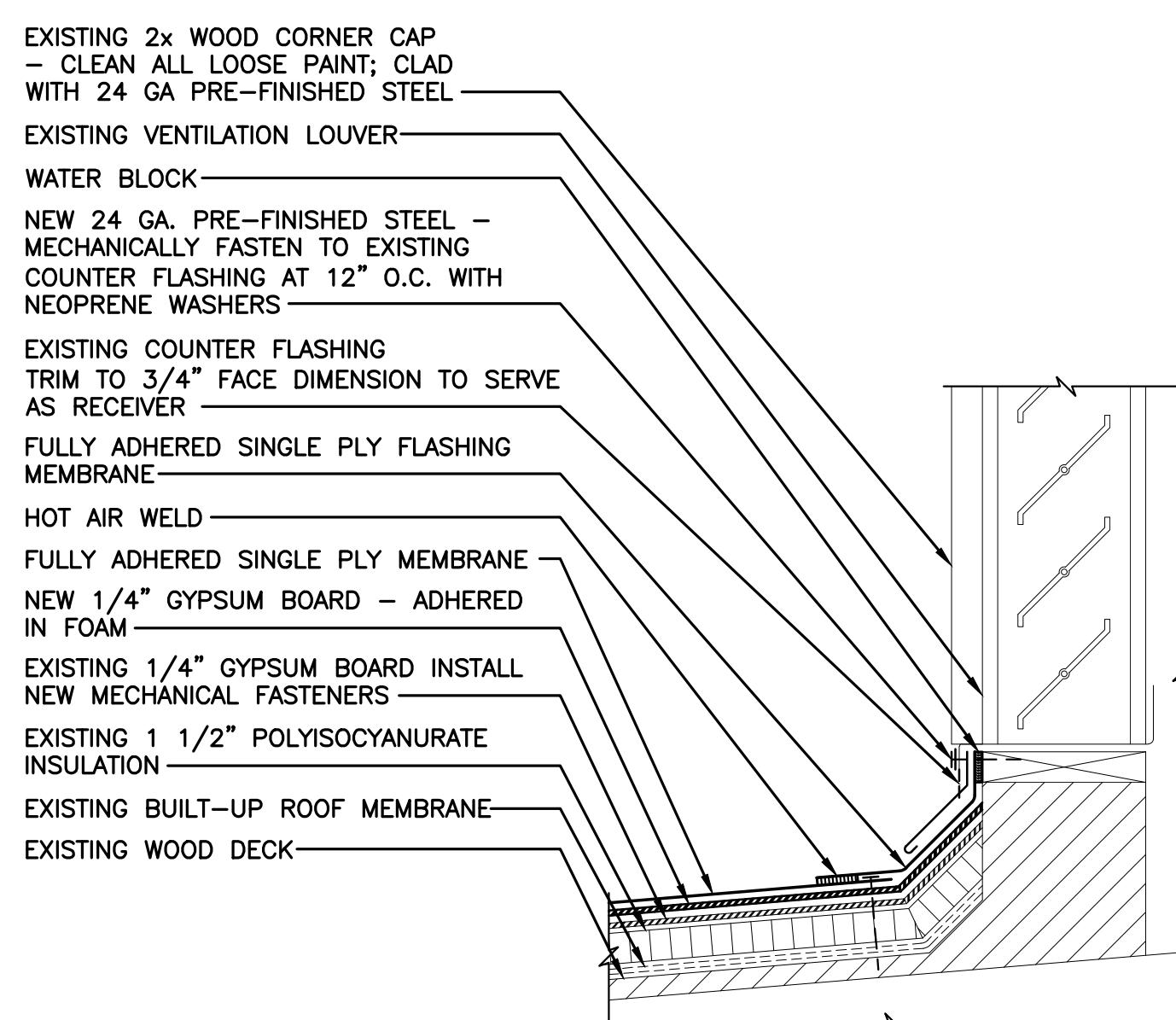
B HORIZONTAL TRANSITION DETAIL
A-502 N.T.S.



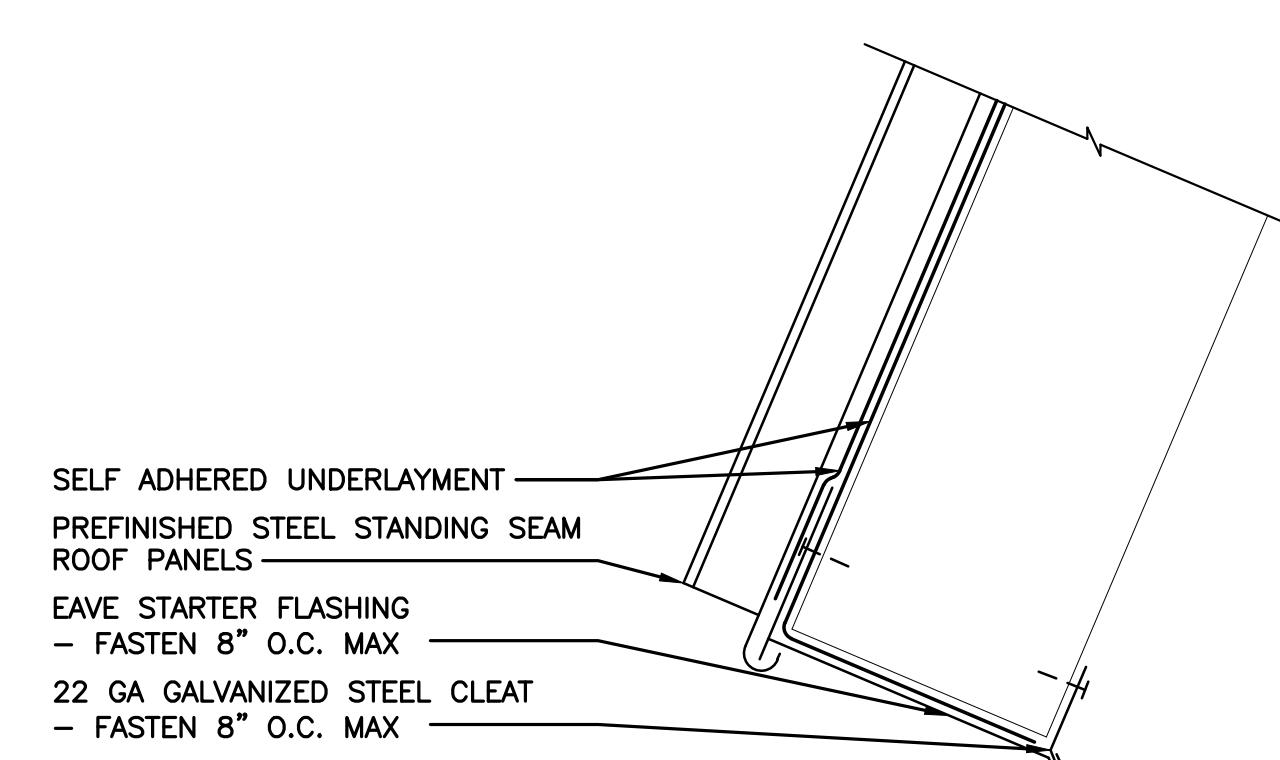
C UPPER SUPPORT BRACE
A-502 N.T.S.



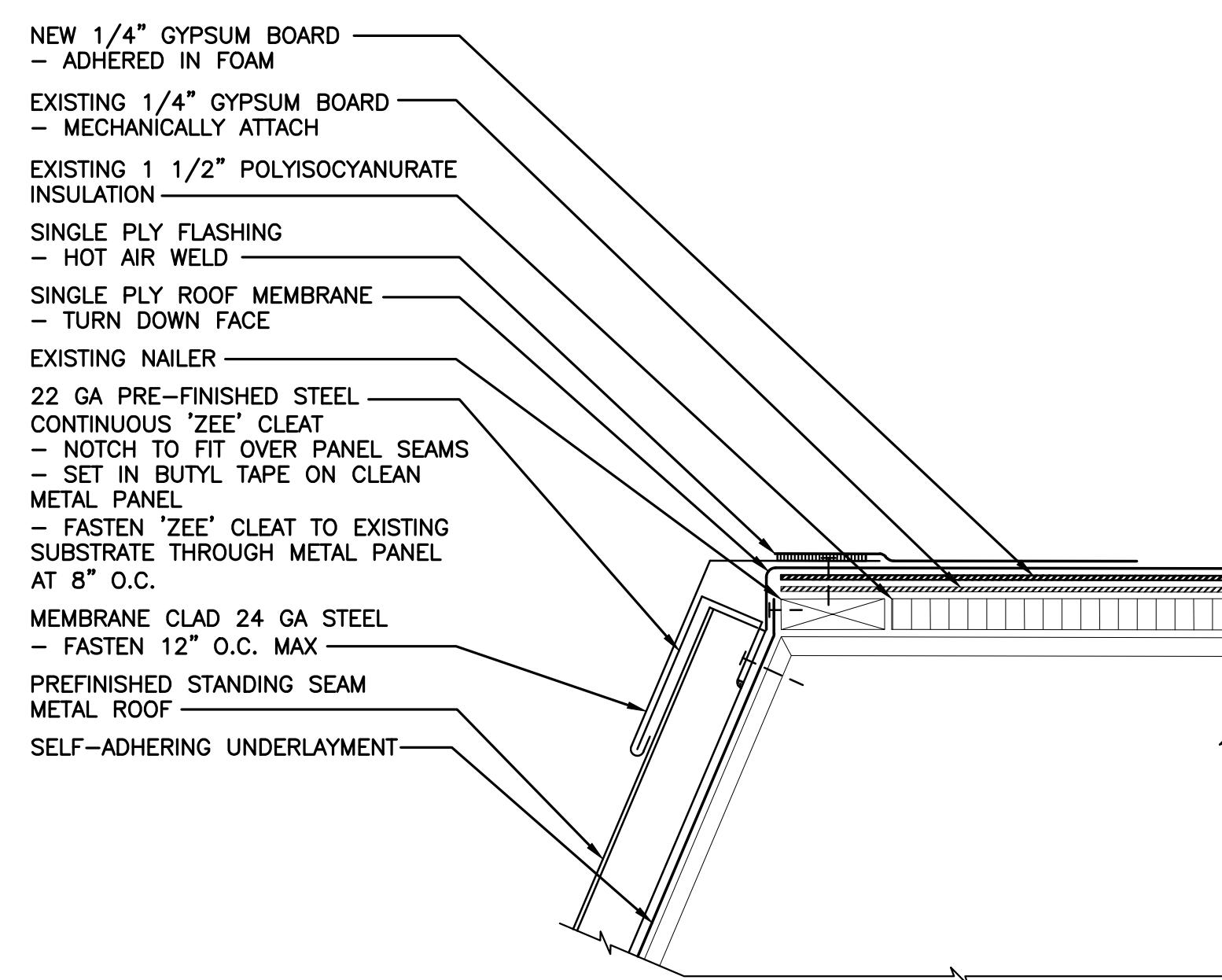
D BASE FLASHING AT ARC SUPPORT COLUMN DETAIL
A-502 N.T.S.



E BASE FLASHING AT LOUVER DETAIL
A-502 N.T.S.



F EAVE FLASHING UPPER ROOF
A-502 N.T.S.



G UPPER ROOF TRANSITION
A-502 N.T.S.

**NORTHERN ARIZONA UNIVERSITY
WALKUP SKYDOME
ROOF REPLACEMENT PROJECT 2017
FLAGSTAFF, AZ
ROOF DETAILS**



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G.A.
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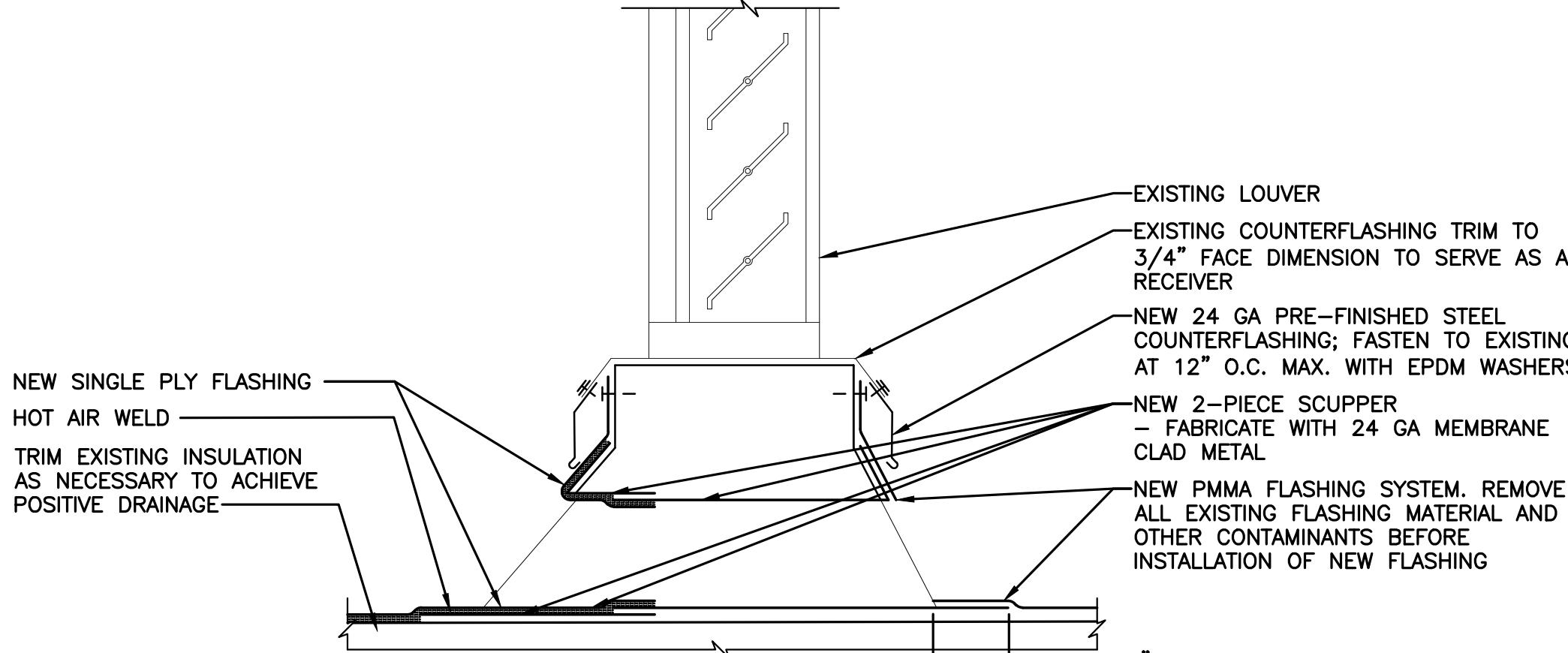
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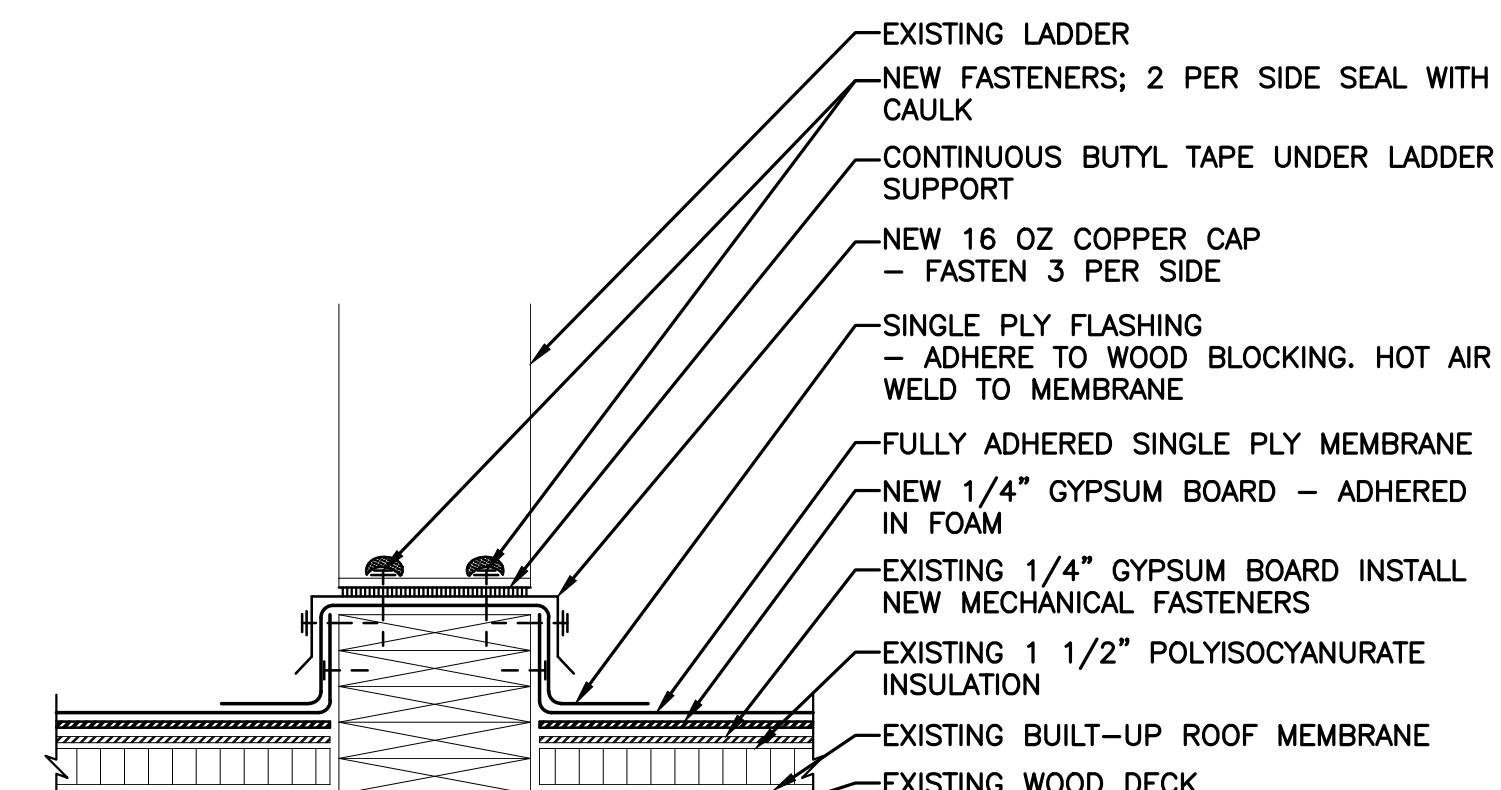
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WALKUP SKYDOME
FLAGSTAFF, AZ**

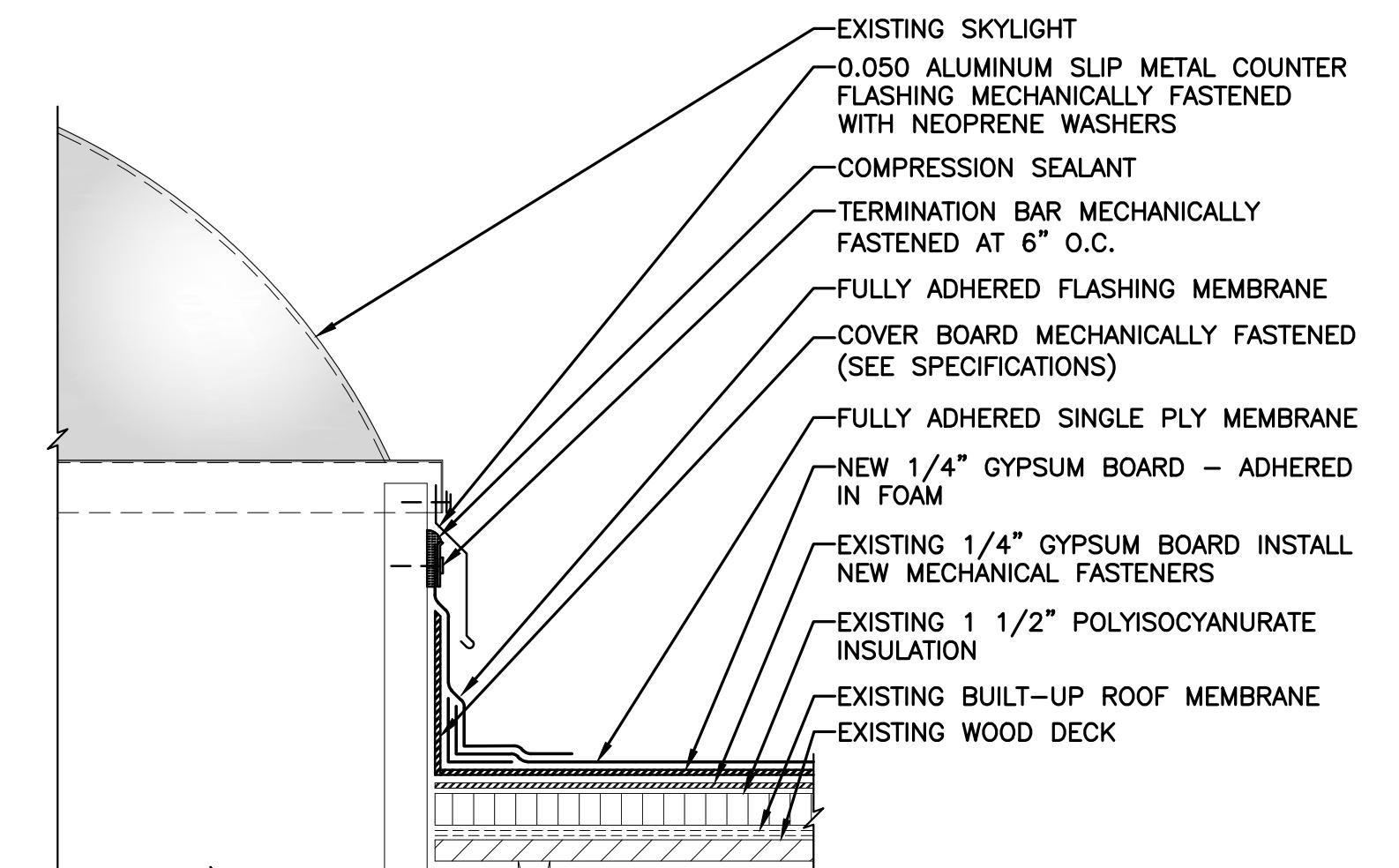
ROOF DETAILS



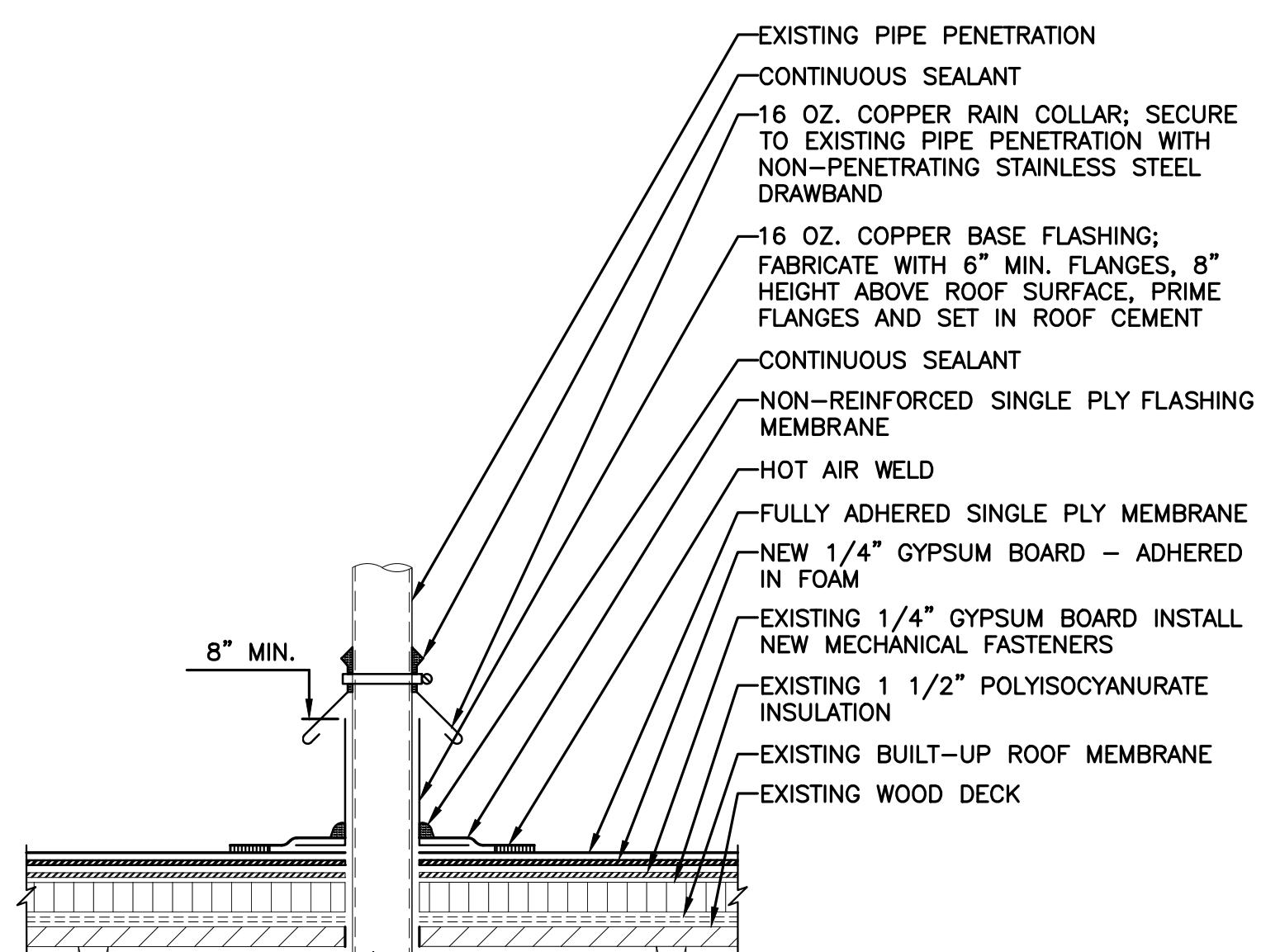
A THROUGHWALL SCUPPER DETAIL
A-503 N.T.S.



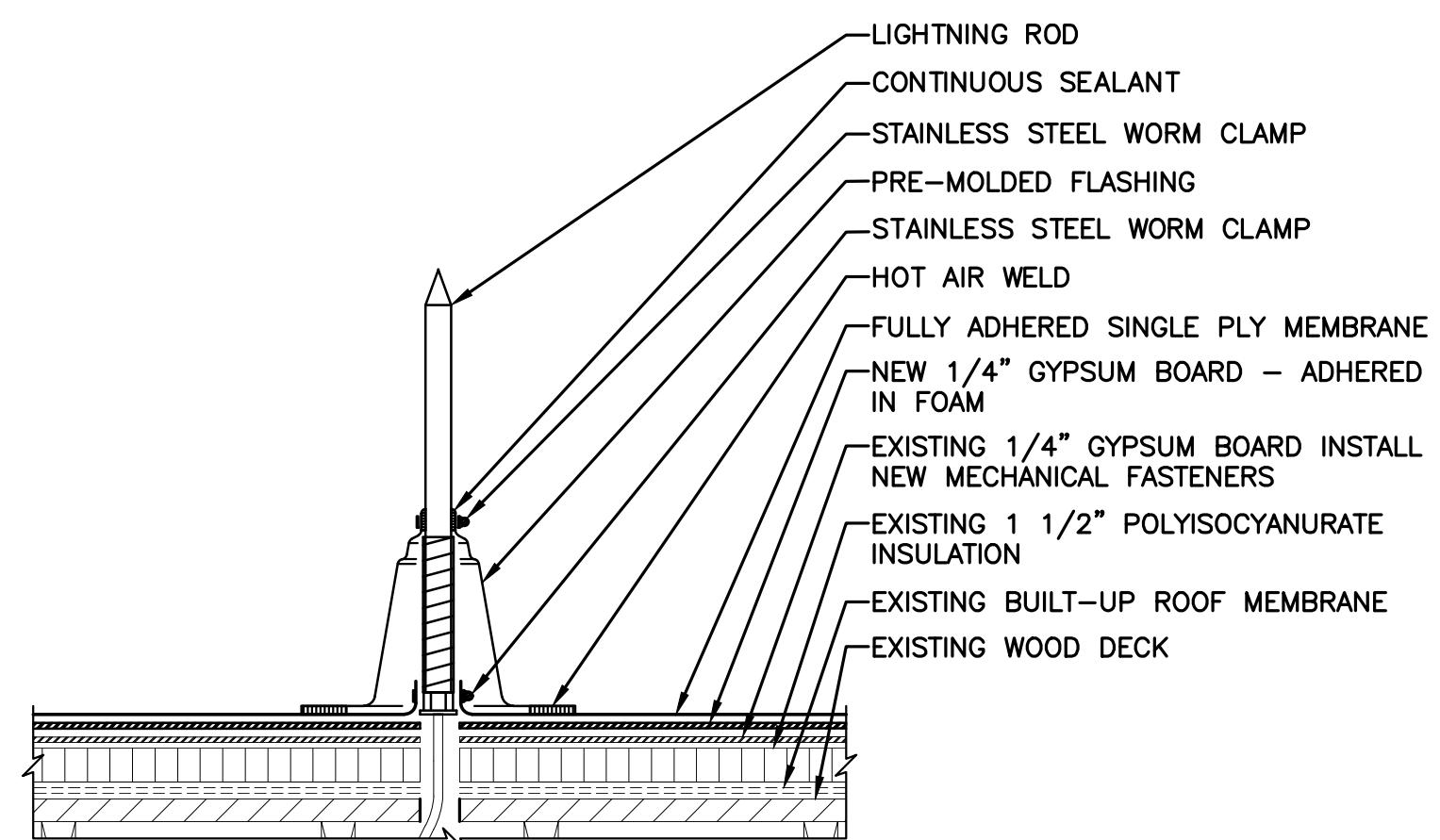
B LADDER SUPPORT DETAIL
A-503 N.T.S.



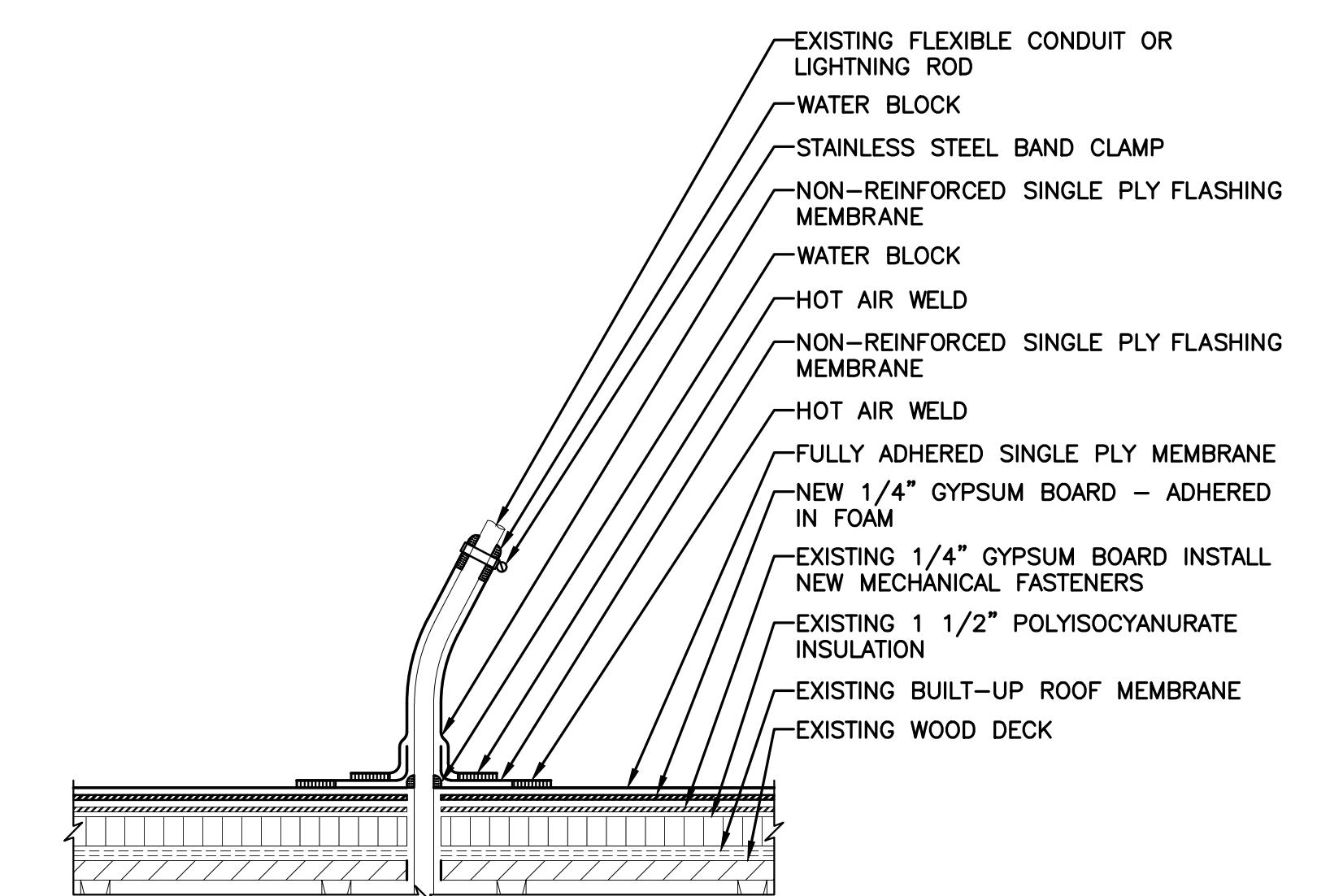
C SKYLIGHT FLASHING DETAIL
A-503 N.T.S.



D PIPE PENETRATION
A-503 N.T.S.



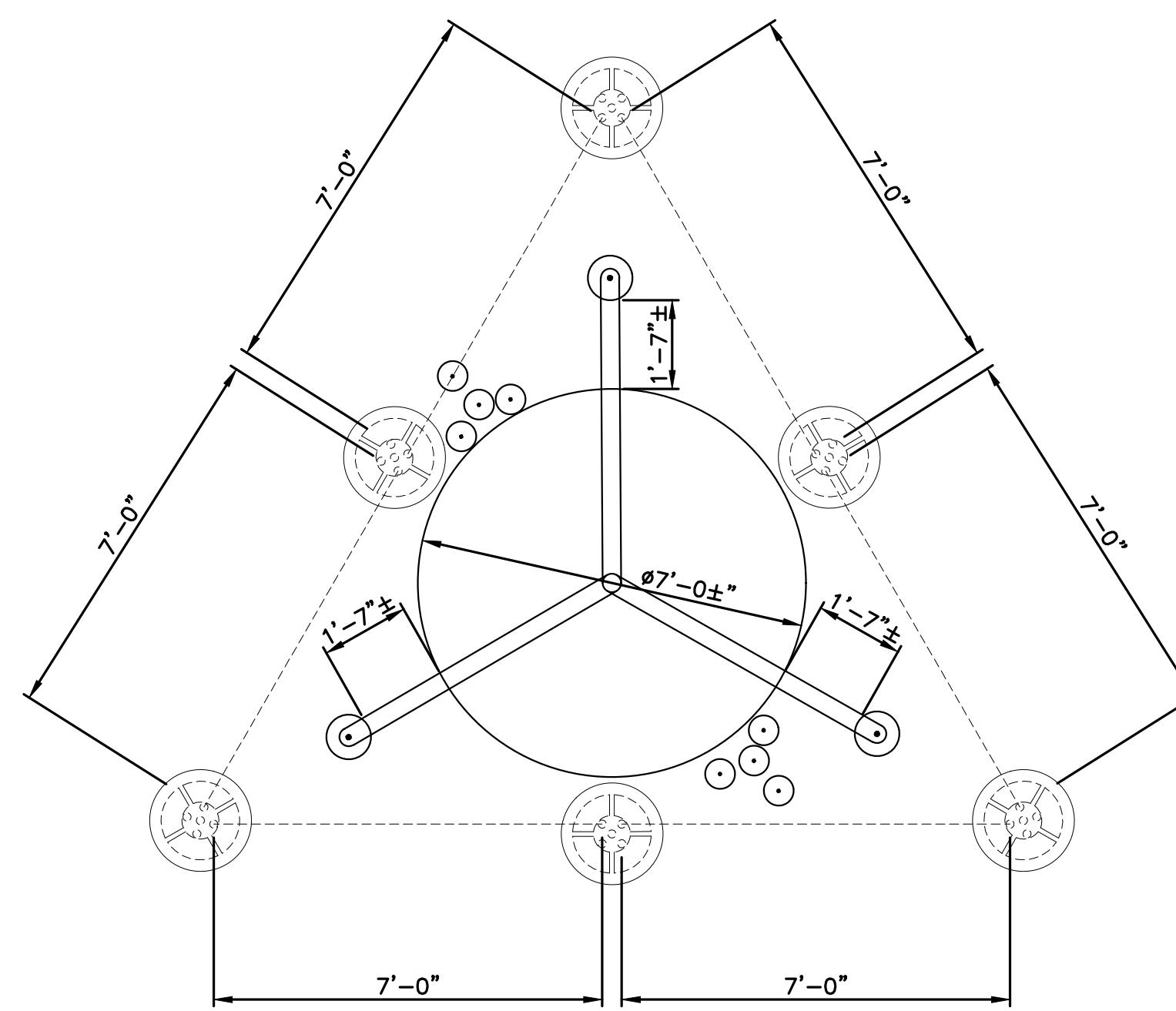
E LIGHTNING ROD FLASHING DETAIL
A-503 N.T.S.



F FLEXIBLE CONDUIT OR LIGHTNING ROD FIELD WRAP DETAIL
A-503 N.T.S.

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A SKYLIGHT SAFETY RAILING DETAIL
A-504 N.T.S.



REQUIRED SIGNAGE, SEE SPECIFICATIONS

NORTHERN ARIZONA UNIVERSITY
WALKUP SKYDOME
ROOF REPLACEMENT PROJECT 2017
FLAGSTAFF, AZ
ROOF DETAILS



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CODE:
2015 EDITION OF THE INTERNATIONAL BUILDING CODE WITH NORTHERN ARIZONA UNIVERSITY AMENDMENTS, AND ALL REFERENCED STANDARDS AND SPECIFICATIONS THEREIN. CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE CODES. CONTRACTOR SHALL NOTIFY STRUCTURAL ENGINEER OF RECORD OF ANY DISCREPANCIES.

DESIGN LOADS:

ROOF LIVE LOAD -----	20 PSF
ROOF DEAD LOAD -----	20 PSF
ROOF SNOW LOADS:	
P _d -----	50 PSF
P _f -----	40 PSF
C _e -----	10
I _s -----	10
C _t -----	10

WIND LOADS:

RISK CATEGORY -----	III
VELOCITY -----	
ULTIMATE DESIGN WIND SPEED -----	120
NOMINAL DESIGN WIND SPEED -----	48
I _w -----	10
BUILDING CATEGORY -----	ENCLOSED
EXPOSURE -----	"B"

WOOD:

FRAMING LUMBER SHALL COMPLY WITH THE LATEST EDITION OF THE GRADING RULES OF THE WESTERN WOOD PRODUCTS ASSOCIATION OR THE WEST COAST LUMBER INSPECTION BUREAU. ALL SAWN LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED GRADING AGENCY.

GLULAM BEAMS: 24F-V8

TYPICAL GLULAM BEAM MINIMUM PROPERTIES			
F _b	F _v	F _c (PERPENDICULAR)	E
2,400 PSI	240 PSI	650 PSI	1,800,000 PSI

BEAMS CANTILEVERING OVER SUPPORTS SHALL HAVE THE SPECIFIED MINIMUM PROPERTIES TOP AND BOTTOM. SPECIES FOR OUTER LAMINATIONS SHALL BE DOUGLAS FIR AND SPECIES FOR CORE LAMINATIONS SHALL BE HEM FIR OR BETTER. ALL BEAMS SHALL BE FABRICATED USING WATERPROOF GLUE. FABRICATION AND HANDLING PER LATEST ATC STANDARDS. BEAMS TO BEAR AITC STAMP AND CERTIFICATE AND GRADE STAMP. CAMBER AS SHOWN ON THE DRAWINGS.

DIMENSIONS:

CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH ARCHITECT.

DEMOLITION:

DEMOLITION OF EXISTING STRUCTURE TO BE REMOVED SHALL BE PERFORMED BY THE CONTRACTOR USING MEANS NECESSARY TO PREVENT DAMAGE TO THE EXISTING STRUCTURE TO REMAIN. DAMAGE TO THE EXISTING STRUCTURE TO REMAIN SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE USING METHODS REVIEWED BY THE STRUCTURAL ENGINEER. IF EXISTING CONDITIONS DIFFER FROM THOSE SHOWN IN THE CONTRACT DOCUMENTS, CONTACT STRUCTURAL ENGINEER THROUGH ARCHITECT PRIOR TO PROCEEDING WITH WORK. CONTRACTOR SHALL PROVIDE ALL SHORING AS REQUIRED PRIOR TO DEMOLITION AND RECONSTRUCTION.

GENERAL:

THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING OF LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS. CONTRACTOR IS RESPONSIBLE FOR ALL O.S.H.A. REQUIREMENTS, NOTIFY ENGINEER OF RECORD OF ANY DISCREPANCIES AND/OR CONFLICTS.

CONSTRUCTION MATERIAL SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.

WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDUM.

ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION. DO NOT PENETRATE ANY STRUCTURAL ELEMENTS (BEAMS, COLUMNS, WALLS, SLABS, ETC.) WITHOUT PRIOR WRITTEN APPROVAL OF STRUCTURAL ENGINEER THROUGH ARCHITECT.

OPTIONS ARE INTENDED FOR CONTRACTOR'S CONVENIENCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES DUE TO THE OPTIONS AND SHALL COORDINATE ALL DETAILS.

NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO SPECIFIC DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.

TYPICAL DETAILS ARE NOT CUT ON DRAWINGS, BUT APPLY UNLESS NOTED OTHERWISE.

WHERE ANY DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN.

ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED.

TYPICAL DETAILS NOTE	
TYPICAL DETAILS NOT CUT ON DRAWINGS. THEY ARE DETAILS THAT ARE COMMON TO STRUCTURAL CONSTRUCTION. IN SOME CASES THERE MAY BE DETAILS THAT ARE NOT USED, BUT ARE PROVIDED TO ACCOMMODATE POSSIBLE CONSTRUCTION CONDITIONS.	

TYPICAL NOTES	
1. FOR APPLICABLE CODES AND STANDARDS, MATERIAL STRENGTHS AND CONSTRUCTION REQUIREMENTS, SEE GENERAL STRUCTURAL NOTES AND SPECIFICATIONS.	

2. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION - RESOLVE ANY DISCREPANCY WITH ARCHITECT. DO NOT SCALE DRAWINGS.

3. FOR CLARITY, ALL EXTERIOR SLABS AND SIDEWALKS MAY NOT BE SHOWN. FOR EXACT DIMENSIONS, LOCATIONS, JOINTS, AND SCORE LINES, SEE ARCHITECTURAL DRAWINGS.

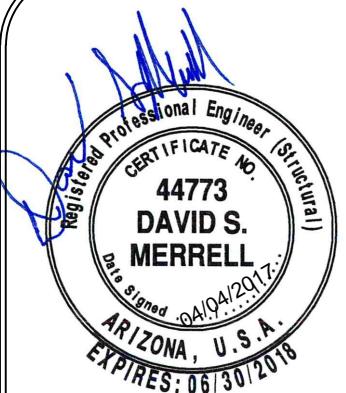
4. FOR CLARITY, ALL ROOF, FLOOR, AND WALL OPENINGS MAY NOT BE SHOWN ON STRUCTURAL DRAWINGS. FOR EXACT SIZE, NUMBER, AND LOCATION OF OPENINGS, SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS. FOR FRAMING AT OPENINGS, SEE TYPICAL STRUCTURAL DETAILS. VERIFY ALL SIZES, WEIGHTS, AND LOCATIONS OF MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTS, ETC. WITH MECHANICAL AND ELECTRICAL ENGINEERS THROUGH ARCHITECT.

5. DETAILS MARKED "TYPICAL DETAIL" MAY OR MAY NOT BE CUT ON PLANS, BUT SHALL APPLY UNLESS NOTED OTHERWISE.

STRUCTURAL ABBREVIATIONS			
AFF	ABOVE FINISHED FLOOR	K	KIP(S)
A.B.	ANCHOR BOLT(S)	LBS	POUNDS
ACI	AMERICAN CONCRETE INSTITUTE	LLV	LONG LEG VERTICAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	LSV	LONG SIDE VERTICAL
AISI	AMERICAN IRON AND STEEL INSTITUTE	MAX	MASONRY CONTROL JOINT
AITS	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION	MCJ	MINIMUM
APA	AMERICAN PLYWOOD ASSOCIATION	N.I.C.	NOT IN CONTRACT
ASD	ALLOWABLE STRESS DESIGN	NTS	NOT TO SCALE
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS	O.C.	ON CENTER
		OPP	OPPOSITE
AWI	AMERICAN WELDING SOCIETY	OSB	ORIENTED STRAND BOARD
C.J.	CONSTRUCTION JOINT	PCI	PRESTRESSED CONCRETE INSTITUTE
CLR	CLEARANCE	PL	PLATE
CMU	CONCRETE MASONRY UNIT	PRE-ENG	PRE-ENGINEERED
CONT.	CONTINUOUS	PCF	POUNDS PER CUBIC FOOT
CRSI	CONCRETE REINFORCING STEEL INSTITUTE	PLF	POUNDS PER LINEAR FOOT
CTJ	CONTROL JOINT	PSF	POUNDS PER SQUARE FOOT
d	PENNY (nails)	P.S.I.	POUNDS PER SQUARE INCH
DF	DOUGLAS FIR-LARCH	P.T.	PRESSURE TREATED
DIA.	DIAMETER	PTI	POST-TENSIONING INSTITUTE
EQ	EQUAL	REINF.	REINFORCING
EOR	ENGINEER OF RECORD	R.S.	ROUGH SAWN
FFE	FINISHED FLOOR ELEVATION	SIM	SIMILAR
GLB	GLUED-LAMINATED BEAM	SLV	SHORT LEG VERTICAL
GSN	GENERAL STRUCTURAL NOTES	SPP	SPRUCE PINE FIR
HF	HEM FIR	SSV	SHORT SIDE VERTICAL
HSA	HEADED STUD ANCHOR	STD	STANDARD
HSS	TUBE SECTION	T&G	TONGUE AND GROOVE
IBC	INTERNATIONAL BUILDING CODE	T.CB	TOP OF BEAM
ICC	INTERNATIONAL CODE COUNCIL	T.C.	TOP OF COLUMN
ICF	INSULATED CONCRETE FORM	T.CP	TOP OF CARAPET
IPC	INTERNATIONAL PLUMBING CODE	T.CW	TOP OF WALL
IRC	INTERNATIONAL RESIDENTIAL CODE	TYP	TYPICAL
JB	JOIST BEARING	U.N.O.	UNLESS NOTED OTHERWISE
		W.H.F.	WELDED WIRE FABRIC

PLAN LEGEND		
SYMBOL	DESCRIPTION	LOCATION
(202) →	DETAIL CUT SHOWN ON PLAN	SEE S3 SERIES SHTS. FOR FRMG DTLs.
(6) →	PLAN NOTE	SEE PLAN NOTES ON EACH PLAN SHEET
±	EXISTING FOOTING, WALL, ETC...	SEE FRAMING PLAN SHEET
BI	BEAM DESIGNATION	

NORTHERN ARIZONA UNIVERSITY ROOF REPLACEMENT PROJECT 2017 FLAGSTAFF, ARIZONA GENERAL STRUCTURAL NOTES



HUBBARD MERRELL ENGINEERING 1623 N. FIRST ST., STE. 201 FLAGSTAFF, AZ 86004 PHONE: 928.526.6174 FAX: 928.213.8778
HME PROJECT MANAGER: DAVE MERRELL HME STRUCTURAL DESIGNER: DAVE MERRELL DRAWN BY: BRIAN SHEPHERD JOB ORDER #: 17031
Scale: AS NOTED

Sheet No.
S-101



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PLAN NOTES

- (1) REPLACE WITH B1
- (2) REPLACE WITH B2
- (3) CONTRACTOR TO VERIFY CONDITION OF EXISTING BEAMS. NOTIFY ENGINEER OF RECORD OF ANY DETERIORATED CONDITIONS. IF DETERIORATED, BEAMS MAY NEED TO BE REPLACED.

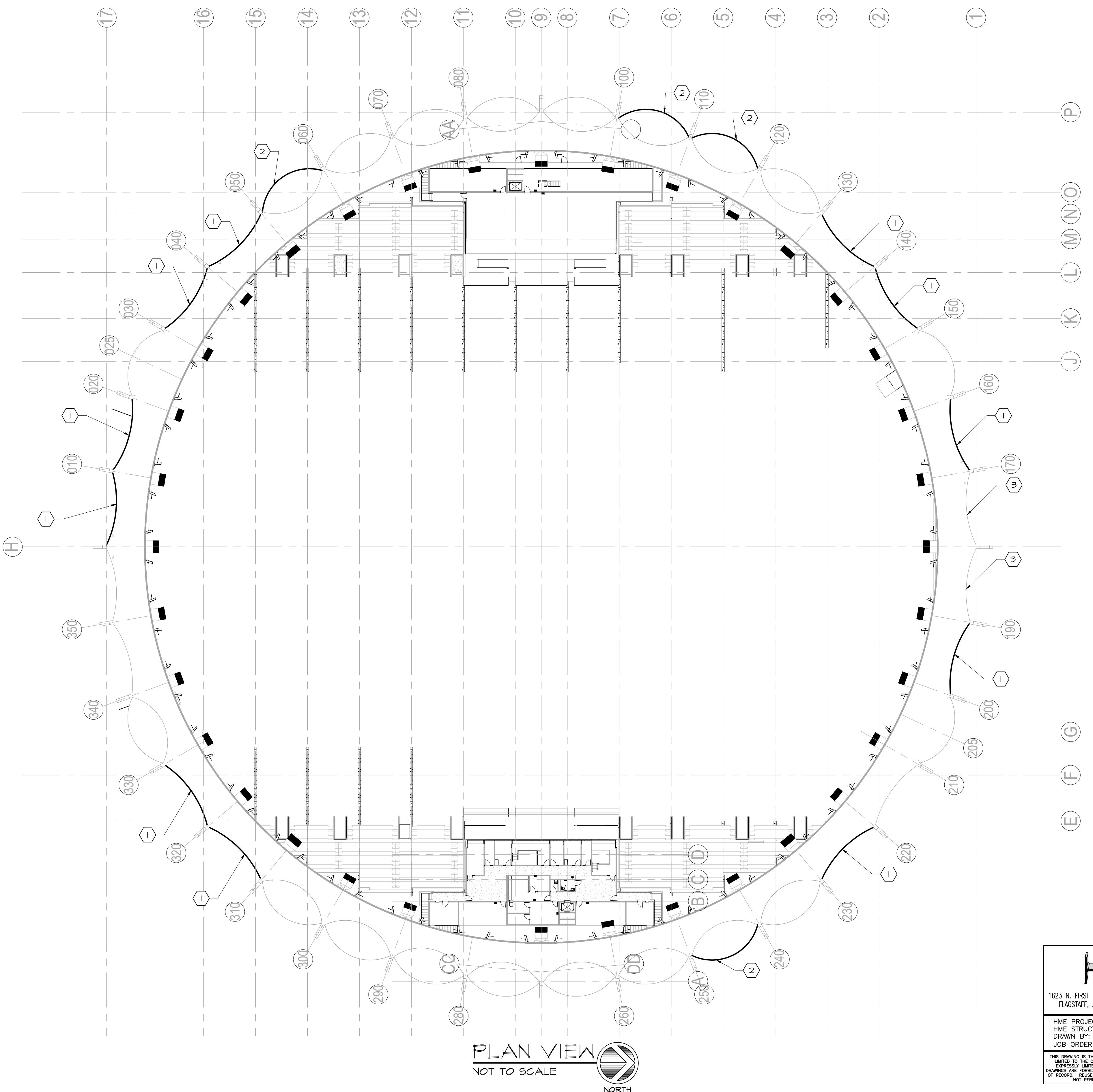
TYPICAL DEMOLITION NOTE

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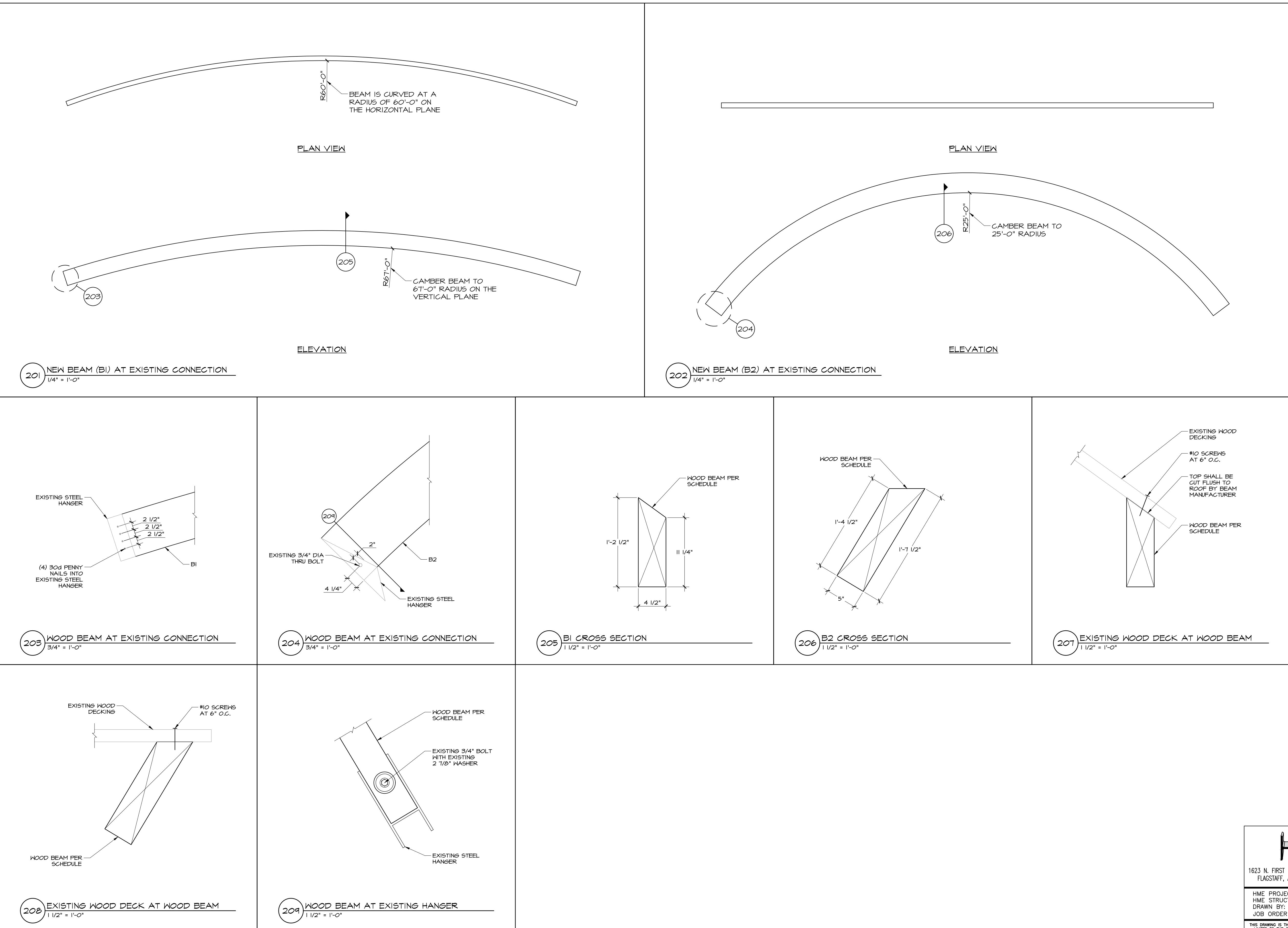
BEAM (B) SCHEDULE

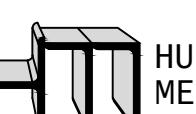
MARK	SIZE / TYPE	CAMBER AT MIDSPAN	END CONNECTION	REMARKS
B1	GLU LAM, SEE DETAIL 205	SEE DETAIL 201	SEE DETAILS	NOTE 1
B2	GLU LAM, SEE DETAIL 206	SEE DETAIL 202	SEE DETAILS	NOTE 1

- NOTES:
1. BEAMS ARE INTENDED TO MATCH EXISTING. CONTRACTOR TO VERIFY THE DIMENSIONS SHOWN ON PLAN AND VERIFY THAT EACH INDIVIDUAL BEAM WILL FIT INTO EXISTING STEEL HANGER.
 2. BEAMS ARE PLANE AT AN ODD ANGLE AT THE TOP. BEAM SHOULD BE CUT AT THE PROPER ANGLE BY THE MANUFACTURER AND SEALED APPROPRIATELY BY THE MANUFACTURER BEFORE BEING DELIVERED TO THE JOB SITE.



**NORTHERN ARIZONA UNIVERSITY
WALKUP SKYDOME
FLAGSTAFF, ARIZONA
DETAILS**



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MERRELL
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 HME STRUCTURAL DESIGNER: DAVE MERRELL
 DRAWN BY: BRIAN SHEPHERD
 JOB ORDER #: 17031

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