



FIRE HALL 10 ROOF REPLACEMENT

1108 100TH AVE W
DULUTH, MINNESOTA 55808



SCALZO ARCHITECTS, LTD.
1901 South Street
Duluth, Minnesota 55812
Tele: 218.722.4319
Fax: 218.722.3535

OWNER:

CITY OF DULUTH
PROPERTY & FACILITIES MGMT
1532 W MICHIGAN STREET
DULUTH, MINNESOTA 55806

ARCHITECT:

SCALZO ARCHITECTS, LTD.
1901 SOUTH STREET
DULUTH, MINNESOTA 55812

ENGINEER:

NORTHLAND CONSULTING ENGINEERS
102 SOUTH 21ST AVENUE WEST SUITE #1
DULUTH, MINNESOTA 55806

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Architect under the laws of the State of Minnesota.

William B. Scalzo

WILLIAM B. SCALZO
DATE: NOVEMBER 25, 2014
LICENSE NO: 18130



102 South 21st. Ave. West Suite #1
Duluth, Mn. 55806-2018
Voice: (218)727-5995
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www.nce-engineers.com

MATERIALS:

	ASPHALT OR BITUMINOUS
	BATT INSULATION
	BRICK
	CONCRETE
	CONCRETE MASONRY UNIT
	EARTH
	EXISTING MATERIAL
	FINISH WOOD
	GRAVEL
	GYPSUM BOARD
	RIGID INSULATION
	PLYWOOD
	ROUGH WOOD
	SAND / MORTAR / PLASTER
	STEEL
	STEEL STUDS
	WOOD BLOCKING
	WOOD STUDS

SYMBOL LEGEND:

	KEYED NOTE
	WALL TYPE SYSTEM
	ELEVATION MARKER
	ITEM IS HIDDEN OR OVERHEAD
	DUST PARTITION
	EROSION CONTROL
	EXISTING DOOR
	NEW DOOR W/ DOOR NUMBER
	TO BE REMOVED
	DOOR / FRAME ASSEMBLY TO BE REMOVED

LOCATION MAP:



PROJECT LOCATION

1 T1 LOCATION MAP NTS



INDEX TO DRAWINGS:

T1 TITLE SHEET / LOCATION MAP / INDEX TO DRAWINGS

ARCHITECTURAL

- A0.0 NOT USED
- A1.0 NOT USED
- A2.0 ROOF PLAN / ROOF DETAILS
- A3.0 SPECIFICATIONS/STRUCTURAL ANALYSIS REPORT

STANDARD ABBREVIATIONS LIST:

AFF	ABOVE FINISH FLOOR	EXIST	EXISTING	RAD	RADIUS
ACM	ACOUSTICAL CEILING MATERIAL	FLR	FLOOR	REF	REFRIGERATOR
ALT	ALTERNATE	FD	FLOOR DRAIN	R/W	REINFORCE WITH
∠	ANGLE	FTG	FOOTING	REINF	REINFORCING
@	AT	FND	FOUNDATION	REQ'D	REQUIRED
B.O.	BOTTOM OF	GA	GAUGE	REV	REVERSE
BLDG	BUILDING	GFI	GROUND FAULT INTERRUPTER	R	RISERS
CPT	CARPET	GYP BD	GYPSUM BOARD	RO	ROUGH OPENING
CLG	CEILING	HGT	HEIGHT	RCB	RUBBER COVE BASE
CL	CENTER LINE	ID	INSIDE DIAMETER	SC	SEALED CONCRETE
CT	CERAMIC TILE	INSUL	INSULATION	SND	SANITARY NAPKIN DISPENSER
CTB	CERAMIC TILE BASE	INT	INTERIOR	SV	SHEET VINYL
COL	COLUMN	LLV	LONG LEG VERTICAL	SHWR	SHOWER
CONC	CONCRETE	LP	LINER PANEL	SIM	SIMILAR
CMU	CONCRETE MASONRY UNIT	MATL	MATERIAL	SPEC	SPECIFICATIONS
CONT	CONTINUOUS	MO	MASONRY OPENING	SF	SQUARE FEET
CFCI	CONTRACTOR FURNISH CONTRACTOR INSTALL	MECH	MECHANICAL	STD	STANDARD
		MTL	METAL	STL	STEEL
		MEZZ	MEZZANINE	ST	STUD
CJ	CONTROL JOINT	MISC	MISCELLANEOUS	TELE	TELEPHONE
CG	CORNER GUARD	NA	NOT APPLICABLE	TPH	TOILET PAPER HOLDER
DIA	DIAMETER	NIC	NOT IN CONTRACT	T.O.	TOP OF
∅	DIAMETER	NR	NOT RATED	T	TREAD
DIM	DIMENSION	NTS	NOT TO SCALE	TYP	TYPICAL
DW	DISH WASHER	NC	NURSE CALL	VB	VINYL BASE
DBL	DOUBLE	OC	ON CENTER	VCT	VINYL COMPOSITION TILE
DN	DOWN	OD	OUTSIDE DIAMETER	VERT	VERTICAL
DWG	DRAWING	OFCI	OWNER FURNISH CONTRACTOR INSTALL	VWC	VINYL WALL COVERING
D	DRYER	PT	PAIN	W	WASHER
EA	EACH	PTD	PAPER TOWEL DISPENSER	WH	WATER HEATER
EL	ELEVATION	PL	PLATE	WDW	WINDOW
ELEV	ELEVATOR	PLAM	PLASTIC LAMINATE	W	WITH
EQ	EQUAL	PLY	PLYWOOD	W/O	WITHOUT
EQUIP	EQUIPMENT	QT	QUARRY TILE	WD	WOOD

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TITLE SHEET

LOCATION MAP
INDEX TO DRAWINGS

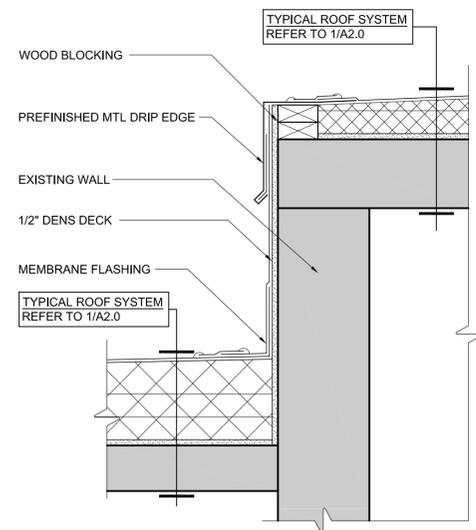
REVISIONS:

DATE: NOVEMBER 25, 2014
DRAWN: TJB, JPG
CHECKED: WBS
PROJECT: 1423

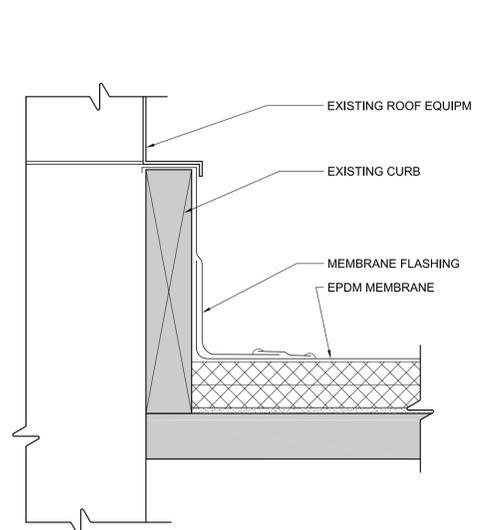
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FULL SCALE

SHEET NO.

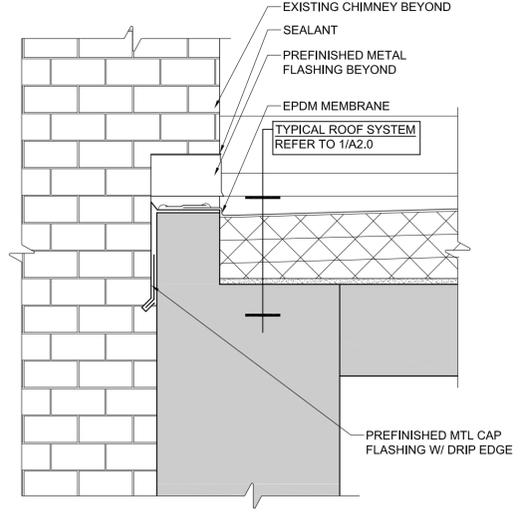
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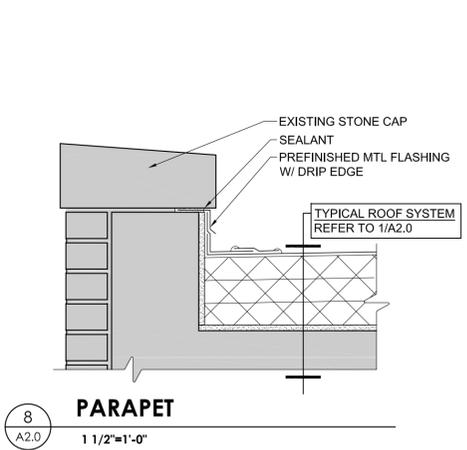
11
A2.0
ROOF/WALL FLASHING AT CURB
1 1/2"=1'-0"



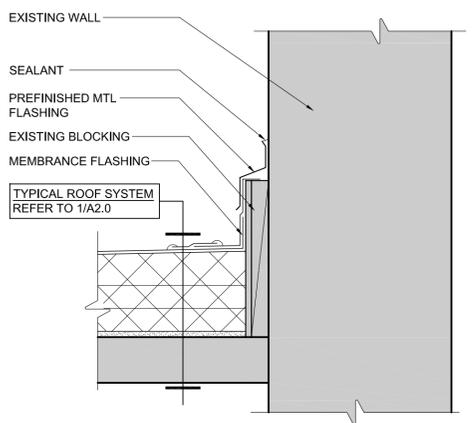
10
A2.0
EQUIPMENT CURB DETAIL
1-1/2"=1'-0"



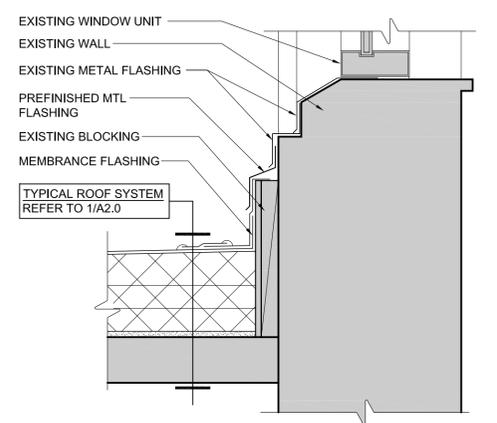
9
A2.0
PARAPET @ CHIMNEY
1 1/2"=1'-0"



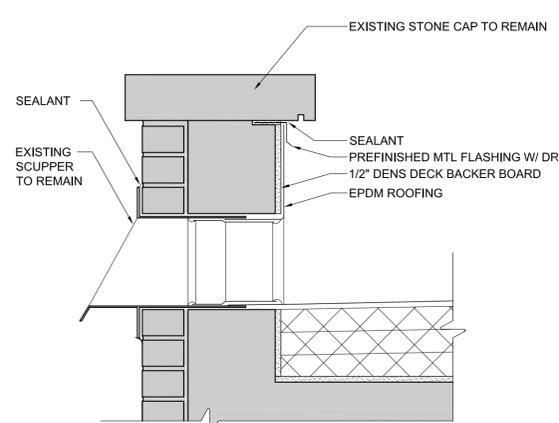
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A2.0
PARAPET
1 1/2"=1'-0"



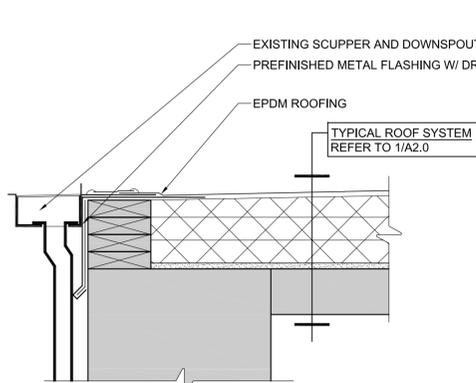
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A2.0
ROOF/WALL FLASHING
1 1/2"=1'-0"



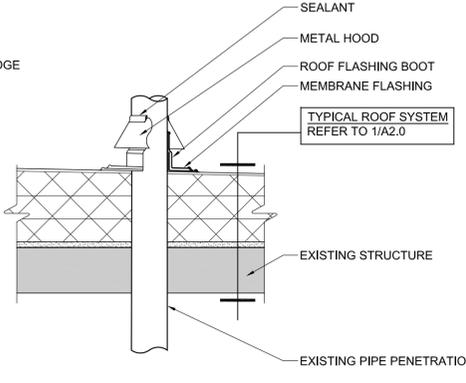
6
A2.0
ROOF/SILL FLASHING
1 1/2"=1'-0"



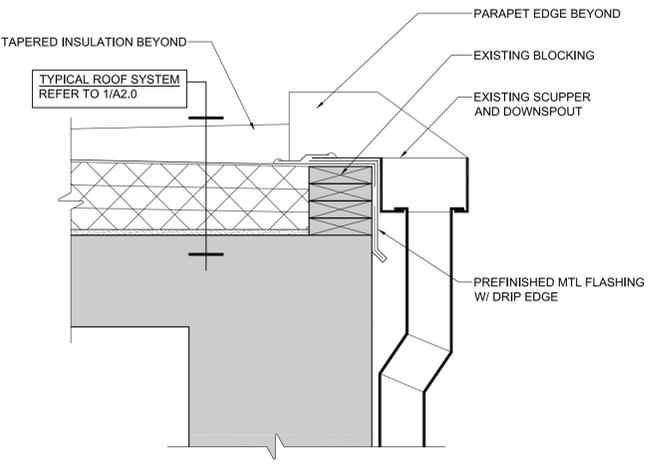
5
A2.0
SCUPPER
1 1/2"=1'-0"



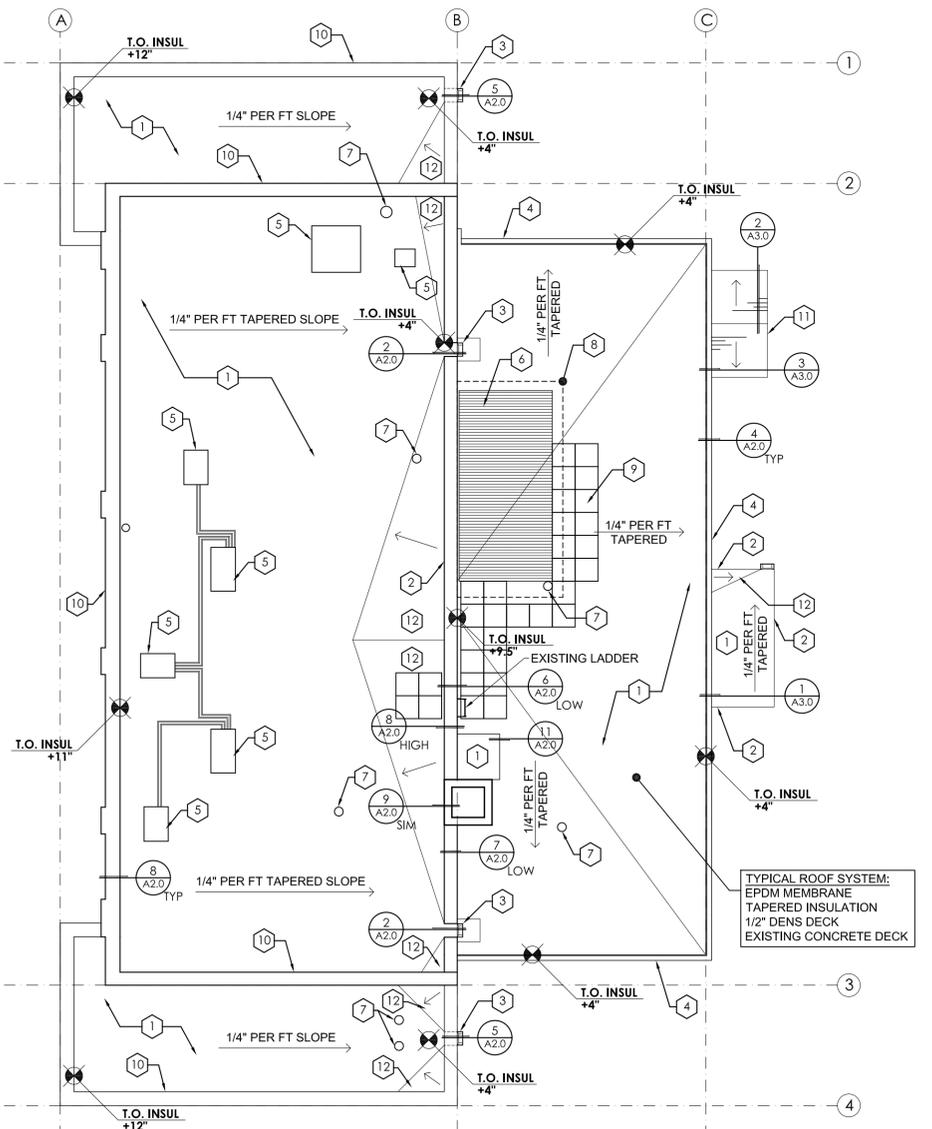
4
A2.0
GUTTER
1 1/2"=1'-0"



3
A2.0
VENT PIPE PENETRATION
1 1/2"=1'-0"



2
A2.0
SCUPPER AND DOWNSPOUT
1 1/2"=1'-0"



1
A2.0
ROOF PLAN
1/8"=1'-0"

- KEYED ROOF PLAN NOTES:**
- 1 REMOVE EXISTING ROOFING SYSTEM INCLUDING UNDERLAYMENT/SHEATHING, RIGID INSULATION, EPDM MEMBRANE AND BALLAST TO EXPOSE THE EXISTING METAL DECKING.
 - 2 REMOVE PREFINISHED MTL CAP FLASHING - SEE GENERAL NOTE 3.
 - 3 EXISTING SCUPPER / DOWNSPOUT TO REMAIN.
 - 4 EXISTING GUTTER TO REMAIN.
 - 5 EXISTING ROOF EQUIPMENT TO REMAIN - SEE DETAIL 10/A2.0.
 - 6 EXISTING WOOD DECK - REMOVE AND REINSTALL.
 - 7 EXISTING VENT PIPE TO REMAIN - SEE DETAIL 3/A2.0.
 - 8 MEMBRANE PROTECTION SHEET FOR DECK SUPPORT.
 - 9 ROOF PAVERS.
 - 10 EXISTING STONE CAP TO REMAIN.
 - 11 REMOVE EXISTING ASPHALT ROOFING SYSTEM.
 - 12 TAPERED CRICKETS TO ACHIEVE 1/4" PER FOOT SLOPE.

- GENERAL NOTES:**
1. SPOT ELEVATIONS ON PLAN INDICATES INSULATION THICKNESS FROM TOP OF SUBSTRATE BD. ROOF SLOPE TO BE 1/4" PER FOOT MINIMUM UNLESS NOTED OTHERWISE. VERIFY INSULATION THICKNESS WITH ENGINEER'S REPORT.
 2. INSPECT WOOD DECK AND CURBS TO REMAIN - NOTIFY ARCHITECT OF ROTTEN OR DAMAGED SUBSTRATE.
 3. SALVAGE EXISTING PREFINISHED MTL FLASHING FOR REUSE.

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William B. Scalzo
WILLIAM B. SCALZO
DATE: NOVEMBER 25, 2014
LICENSE NO: 18130

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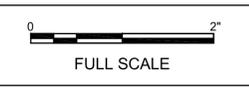
DULUTH
MINNESOTA

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ROOF PLAN

REVISIONS:

DATE: NOVEMBER 25, 2014
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SHEET NO.
A2.0

SPECIFICATIONS

1. THE GENERAL CONDITIONS OF THIS CONTRACT IS THE AMERICAN INSTITUTE OF ARCHITECTS (AIA) DOCUMENT A201-2007. "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION", INCLUDED BY REFERENCE, EXCEPT IN INSTANCES WHERE THE CITY INFORMATION FOR BIDDERS ADDRESS THE SAME SUBJECT MATTER.
2. REFER TO STRUCTURAL ANALYSIS REPORT REGARDING REQUIREMENTS AND MAXIMUM BUILDING ROOF CAPACITY.
3. CONTRACTOR TO OBTAIN PERMITS AND ARRANGE FOR THE SUBSEQUENT INSPECTIONS RELATED TO THE CONSTRUCTION.
4. KEEP DRIVEWAYS, ENTRANCES, AND SIDEWALKS CLEAR AT ALL TIMES. DO NOT USE THESE AREAS FOR PARKING OR STORAGE OF MATERIALS. SCHEDULE DELIVERIES TO MINIMIZE REQUIREMENTS FOR STORAGE OF MATERIALS.
5. MAINTAIN THE EXISTING BUILDING IN A WEATHER-TIGHT AND SECURE CONDITION THROUGHOUT CONSTRUCTION. REPAIR DAMAGES CAUSED BY CONSTRUCTION OPERATIONS. TAKE PRECAUTIONS NECESSARY TO PROTECT THE BUILDING AND OCCUPANTS DURING THE CONSTRUCTION PERIOD.
6. THE OWNER WILL OCCUPY ADJACENT SPACES WITHIN THE BUILDING DURING CONSTRUCTION. COOPERATE WITH THE OWNER TO MINIMIZE CONFLICTS AND FACILITATE OWNER USAGE. PERFORM THE WORK SO AS NOT TO INTERFERE WITH THE OWNER'S OPERATIONS.
7. DEMOLITION PROCESSES INVOLVING NOISE OR THAT DISTURB ADJACENT OCCUPIED AREAS SHALL BE COORDINATED WITH THE OWNER. PROVIDE 48 HOUR NOTICE PRIOR TO SHUTDOWN OR INTERRUPTION OF MECHANICAL / ELECTRICAL SERVICES TO ADJACENT SPACES.
8. CONTRACTORS TO COMPLY WITH THE OWNER'S SAFETY MANAGEMENT POLICIES AND PROCEDURES WITH REFERENCE TO INTERIM LIFE SAFETY MEASURES REQUIRED OF THE CONTRACTOR DURING CONSTRUCTION IS AVAILABLE UPON REQUEST.
9. CONTRACTOR SHALL EXAMINE THE PROJECT SITE TO BECOME FAMILIAR WITH EXISTING AND VISIBLE CONDITIONS PRIOR TO SUBMISSION OF BID.
10. THE REMOVAL, MODIFICATION, OR ABATEMENT OF EXISTING HAZARDOUS MATERIALS IS NOT PART OF THIS CONTRACT. CONTRACTOR TO IMMEDIATELY REPORT TO THE OWNER DISCOVERY OF HAZARDOUS MATERIAL AND SUSPEND WORK IN THE AFFECTED AREA.
11. SHOULD UNUSUAL OR UNEXPECTED CONDITIONS BE ENCOUNTERED NOTIFY THE ARCHITECT IMMEDIATELY BY TELEPHONE, AND IN WRITING WITHIN FIVE (5) WORKING DAYS.
12. DO NOT DISTURB OR DAMAGE AREAS NOT INDICATED TO BE DEMOLISHED UNLESS REQUIRED BY THE WORK. EXISTING STRUCTURAL SUPPORT WALLS OR COLUMNS SHALL NOT BE DISTURBED.
13. SUBMIT SHOP DRAWINGS INCLUDING TECHNICAL PRODUCT INFORMATION; INSTALLATION INSTRUCTIONS; AND ROOF MEMBRANE LAYOUT DRAWING.
14. DELIVER MATERIALS IN THE MANUFACTURER'S ORIGINAL, UNOPENED CONTAINERS LABELED WITH THE MANUFACTURER'S NAME, BRAND NAME, AND INSTRUCTIONS.
15. 20 YEAR TOTAL SYSTEM WARRANTY WITH EXTENDED WIND UP LIFT COVERAGE; WIND SPEED 90 MPH.
16. PERFORM SELECTIVE DEMOLITION IN A SYSTEMATIC MANNER; PROTECT EXISTING FINISH WORK TO REMAIN IN PLACE THAT BECOMES EXPOSED DURING DEMOLITION OPERATIONS. RECYCLE REMOVED MATERIALS TO THE GREATEST EXTENT POSSIBLE. REMOVE ONLY THE AMOUNT OF EXISTING ROOFING THAT CAN BE INSTALLED BY THE DAY'S WORK.
17. PROVIDE MISCELLANEOUS BLOCKING, NAILERS, GROUNDS AND FRAMING; CUT AND SHAPE TO THE REQUIRED SIZE. STRUCTURAL GRADE NO. 2 OR BETTER; SOUTHERN PINE, DOUGLAS FIR OR EXTERIOR GRADE PLYWOOD.
18. MEMBRANE ROOFING; 60 MIL THICK NON-REINFORCED EPDM, CARLISLE SYNTEC SURE SEAL (WHITE); FIRESTONE RUBBER GUARD ECO WHITE, VERSICO WHITE OR EQUIVALENT. EPDM MEMBRANE FULLY ADHERED TO SUBSTRATE.
19. ROOF INSULATION CLOSED CELL POLYISOCYURATE FOAM CORE INSULATION BOARDS FACED WITH FIBER REINFORCED FACER MINIMUM R 6.5 PER INCH, NOMINAL 2 INCH THICKNESS, ROOFING MANUFACTURER'S STANDARD. INSULATION SHALL BE ATTACHED BY SOLID MOPPING OF HOT ASPHALT AS PRESCRIBED BY MANUFACTURER.
20. GLASS MAT ROOF BOARD TO BE GEORGIA-PACIFIC DENS DECK ROOF BOARD, USG SECUROCK, OR EQUIVALENT.
21. PAVERS: SURE-SEAL INTERLOCKING RUBBER PAVER SYSTEM, MANUFACTURED BY CARLISLE SYNTEC INCORPORATED OR EQUIVALENT.
22. AIR AND VAPOR BARRIER / TEMPORARY ROOF TO BE 40 MIL COMPOSITE RUBBERIZED ASPHALT AND POLYOLEFIN FILM EQUAL TO VERSICO 725TR FULLY ADHERED TO THE SUBSTRATE.
23. METAL FLASHING, EDGE METAL, COPINGS TO BE FABRICATED FROM 22 GA STEEL WITH KYNAR FINISH TO MATCH EXISTING; ROLL COM, VINCENT, PETERSON OR EQUIVALENT. FASTENED TO PREVENT THE METAL FROM PULLING FREE OR BUCKLING; SEALED TO PREVENT MOISTURE FROM ENTERING THE ROOFING SYSTEM.
24. METAL ROOF PANEL SYSTEM, 22 GA STEEL PANEL, HYLAR 5000/KYNAR 500 FINISH TO MATCH EXISTING COLOR. FIRESTONE UNA-CLAD UC-4 NO CLIP STANDING SEAM, PETERSON PAC-CLAD SNAP-CLAD STANDING SEAM, UN-90 RATED WITH 20 YEAR WATERTIGHT SYSTEM WARRANTY.



Structural and Forensic Engineering Services

August 8, 2014

Mr. Robert Hurd
City of Duluth Facility Management
1532 West Michigan Street
Duluth, Minnesota 55806

Re: City of Duluth Fire Hall #10 Building- Roof Capacity Review
NCE Job No.: 14-144

Dear Rob:

We have reviewed the structural capacity of the existing roof framing systems at the City of Duluth Fire Hall #10 building located at 1102 Commonwealth Avenue in Duluth, Minnesota.

There are three roof areas on this building, an upper roof area and two lower roof areas. Therefore, there is a potential for drifting snow load on the lower roof areas due to the high/low roof condition. Based on our site visit and roof penetration it appears that the existing roof systems are 6" in depth. We believe that there are two roof systems currently on these roof areas, a built-up ballasted EPDM roof system was placed on top of an existing built-up roof system.

For all roof areas the existing roof framing system consists of open-web steel joists spaced at 23" on center. The steel joists are 12" in depth and span a distance of 21'-6" between masonry bearing walls for the lower roof areas. The upper roof framing system consists of 16" deep steel joists spaced at 23" on center spanning a distance of 29'-0" between masonry bearing walls. The ceiling lining is gypsum board.

Our structural calculations have determined that the existing roof framing systems have a live (snow) load capacity of 35 pounds per square foot (psf). This capacity does not meet the 42 psf live load requirements, or the 95 psf drifting snow load we calculated for the lower roof areas, based on the current 2007 Minnesota State Building Code adopting and amending the 2006 International Building Code (IBC).

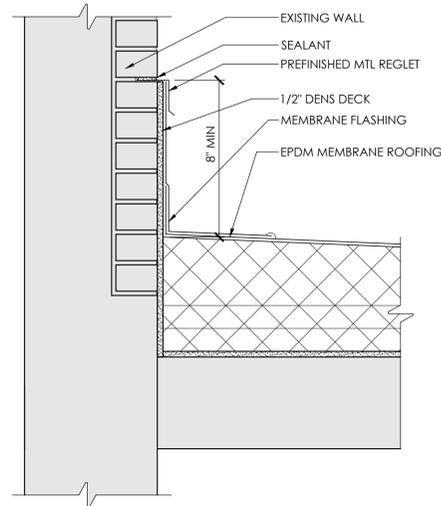
It is our professional opinion that the existing ballasted roof systems be removed to the existing steel decking and the new roof system for the upper and lower roof areas on this building consist of a fully adhered EPDM rubber membrane over tapered insulation as required to provide proper roof drainage. This will reduce the net dead load on the existing roof framing system by approximately 8-10 psf. The R-value of the new roof system cannot be increased over the existing roof R-value.

Sincerely yours,

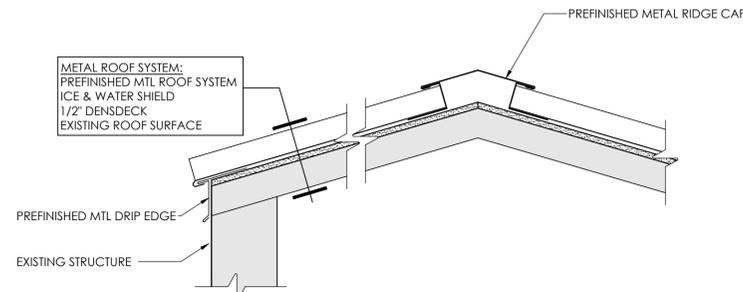
Mark R. Udd
Mark R. Udd, P.E.
Partner

Professional Certification:	
I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.	
<i>Mark R. Udd</i>	08-08-2014
Mark R. Udd, P.E.	Date
MN Reg. No. 40443	

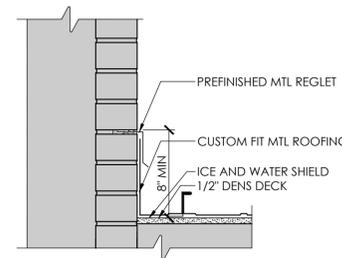
102 S. 21st Avenue West, Suite One, Duluth, Minnesota 55806, voice (218) 727-5995, fax (218) 727-7779



1 WALL FLASHING
A3.0 1 1/2"=1'-0"



2 RIDGE / EAVE
A3.0 1 1/2"=1'-0"



3 CHIMNEY PARAPET
A3.0 1 1/2"=1'-0"



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