FIRE HALL 7 ROOF REPLACEMENT

1419 MAPLE GROVE ROAD
DULUTH, MINNESOTA 55811

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

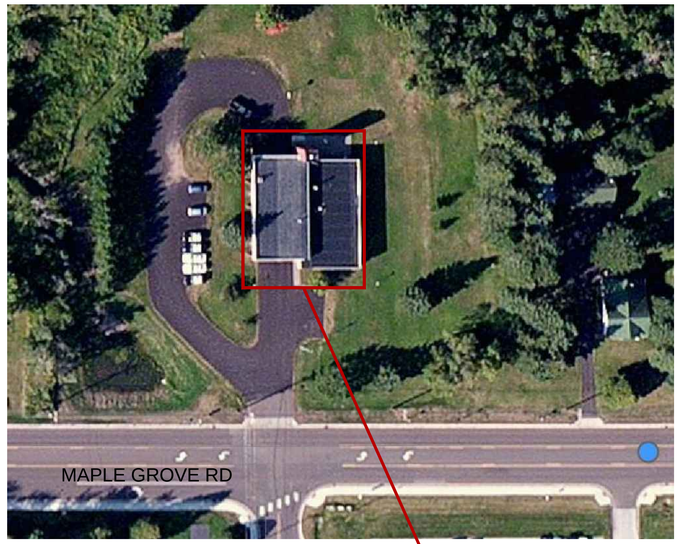
MATERIALS:

- 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
- TO FLOOR 100'-0" — 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:



1 / T1 LOCATION MAP
NTS

NORTH

INDEX TO DRAWINGS:

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
℄	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
CJ	CONTROL JOINT	MEZZ	MEZZANINE	ST	STUD
CG	CORNER GUARD	MISC	MISCELLANEOUS	TELE	TELEPHONE
DIA	DIAMETER	NA	NOT APPLICABLE	TPH	TOILET PAPER HOLDER
Ø	DIAMETER	NIC	NOT IN CONTRACT	T.O.	TOP OF
DIM	DIMENSION	NR	NOT RATED	T	TREAD
DW	DISH WASHER	NTS	NOT TO SCALE	TYP	TYPICAL
DBL	DOUBLE	NC	NURSE CALL	VB	VINYL BASE
DN	DOWN	OC	ON CENTER	VCT	VINYL COMPOSITION TILE
DWG	DRAWING	OD	OUTSIDE DIAMETER	VERT	VERTICAL
D	DRYER	OFCI	OWNER FURNISH CONTRACTOR INSTALL	VWC	VINYL WALL COVERING
EA	EACH	PT	PAINT	W	WASHER
EL	ELEVATION	PTD	PAPER TOWEL DISPENSER	WH	WATER HEATER
ELEV	ELEVATOR	PL	PLATE	WDW	WINDOW
EQ	EQUAL	PLAM	PLASTIC LAMINATE	W/	WITH
EQUIP	EQUIPMENT	PLY	PLYWOOD	W/O	WITHOUT
		QT	QAURRY TILE	WD	WOOD

SCALZO architects

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Duluth, Minnesota 55812

Tele: 218.722.4319
Fax: 218.722.3535

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

DATE: NOVEMBER 25, 2014

LICENSE NO: 18130

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PROJECT:
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TITLE SHEET

LOCATION MAP

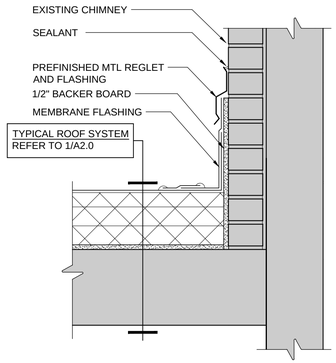
INDEX TO DRAWINGS

REVISIONS:
⚠1 REVISED - MARCH 10, 2015

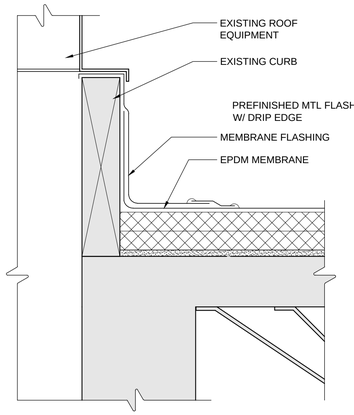
DATE: NOVEMBER 25, 2014
DRAWN: TJB, JPG
CHECKED: WBS
PROJECT: 1423

0 2"
FULL SCALE

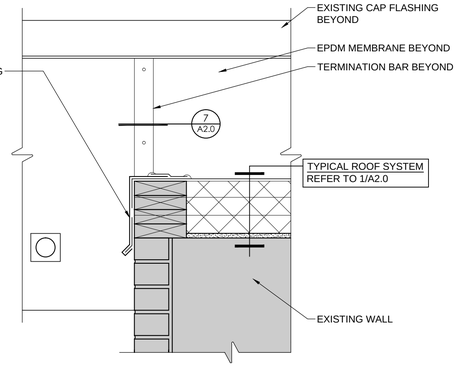
SHEET NO.
T1



12 A2.0 **FLASHING AT CHIMNEY**
1-1/2"=1'-0"



11 A2.0 **EQUIPMENT CURB (ALL SIDES)**
1-1/2"=1'-0"



10 A2.0 **VERTICAL TERMINATION**
1-1/2"=1'-0"

NOT USED

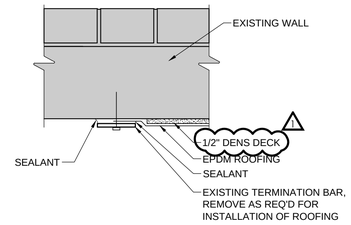
9 A2.0 **TOWER ROOF**
1-1/2"=1'-0"

NOT USED

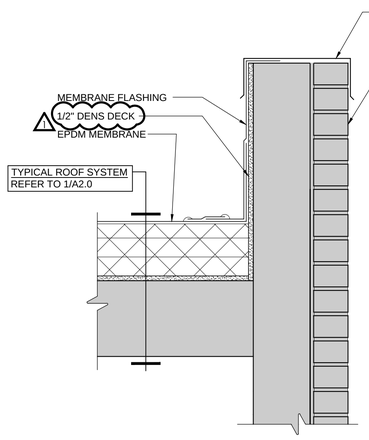
8 A2.0 **TOWER PARAPET**
1-1/2"=1'-0"

KEYED ROOF PLAN NOTES:

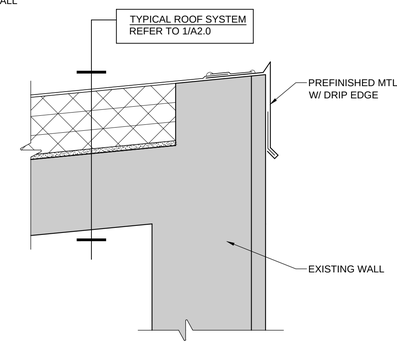
1. REMOVE EXISTING ROOFING SYSTEM; INCLUDING UNDERLAYMENT/ SHEATHING, RIGID INSULATION, AND EPDM MEMBRANE TO EXPOSE THE EXISTING CONCRETE PLANKS.
2. REMOVE EXISTING METAL CAP FLASHING.
3. REMOVE EXISTING ASPHALT SHINGLES TO EXPOSE EXISTING SHEATHING.
4. EXISTING SCUPPER & DOWNSPOUT TO REMAIN.
5. EXISTING ROOF EQUIPMENT TO REMAIN - SEE DETAIL 11/A2.0 TYP.
6. EXISTING VENT PIPE TO REMAIN - SEE DETAIL 3/A2.0.
7. TAPERED CRICKETS TO ACHIEVE 1/4" PER FOOT SLOPE.



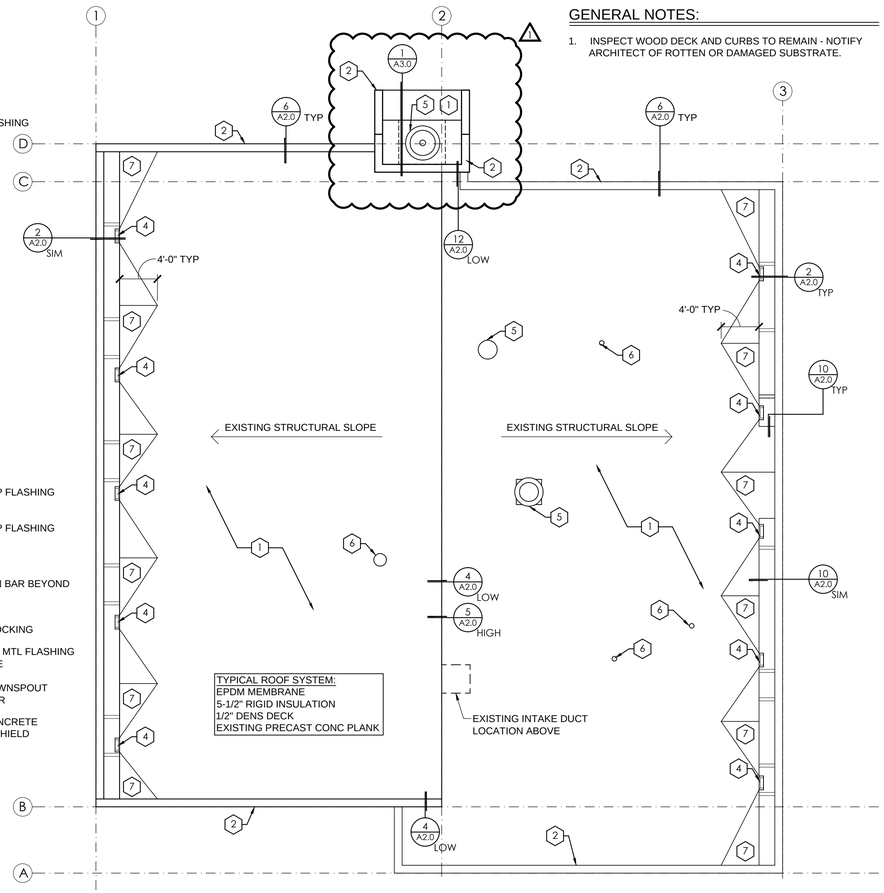
7 A2.0 **TERMINATION BAR**
1-1/2"=1'-0"



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



5 A2.0 **ROOF EDGE**
1-1/2"=1'-0"

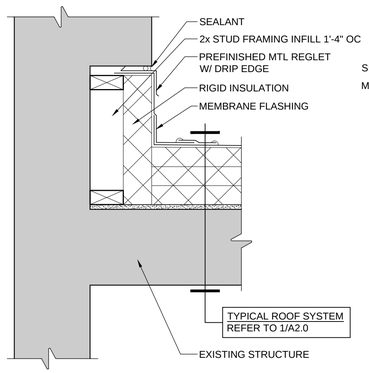


1 A2.0 **ROOF PLAN**
1/8"=1'-0"

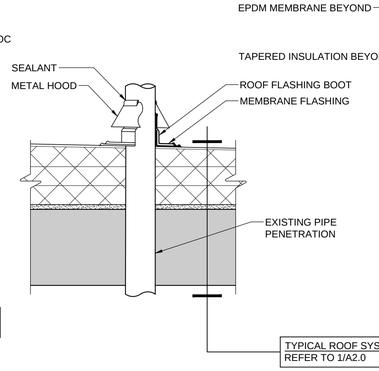
NORTH

GENERAL NOTES:

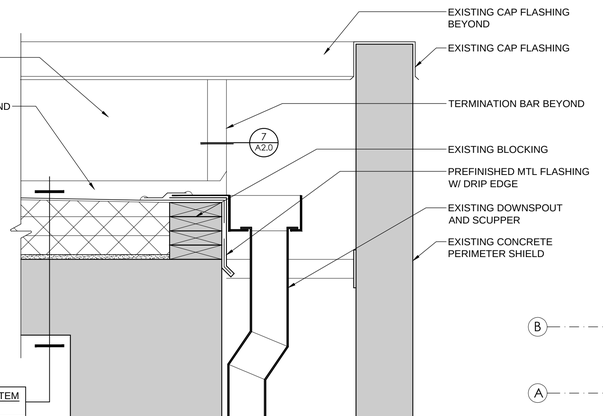
1. INSPECT WOOD DECK AND CURBS TO REMAIN - NOTIFY ARCHITECT OF ROTTEN OR DAMAGED SUBSTRATE.



4 A2.0 **ROOF TO WALL TRANSITION**
1-1/2"=1'-0"



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



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

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WILLIAM B. SCALZO

DATE: NOVEMBER 25, 2014

LICENSE NO: 18130

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PROJECT:

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1419 MAPLE GROVE RD
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THE CITY OF DULUTH MINNESOTA

OWNER:
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1532 W MICHIGAN STREET
DULUTH, MINNESOTA 55806

ROOF PLAN

DETAILS

REVISIONS:
1 REVISED - MARCH 10, 2015

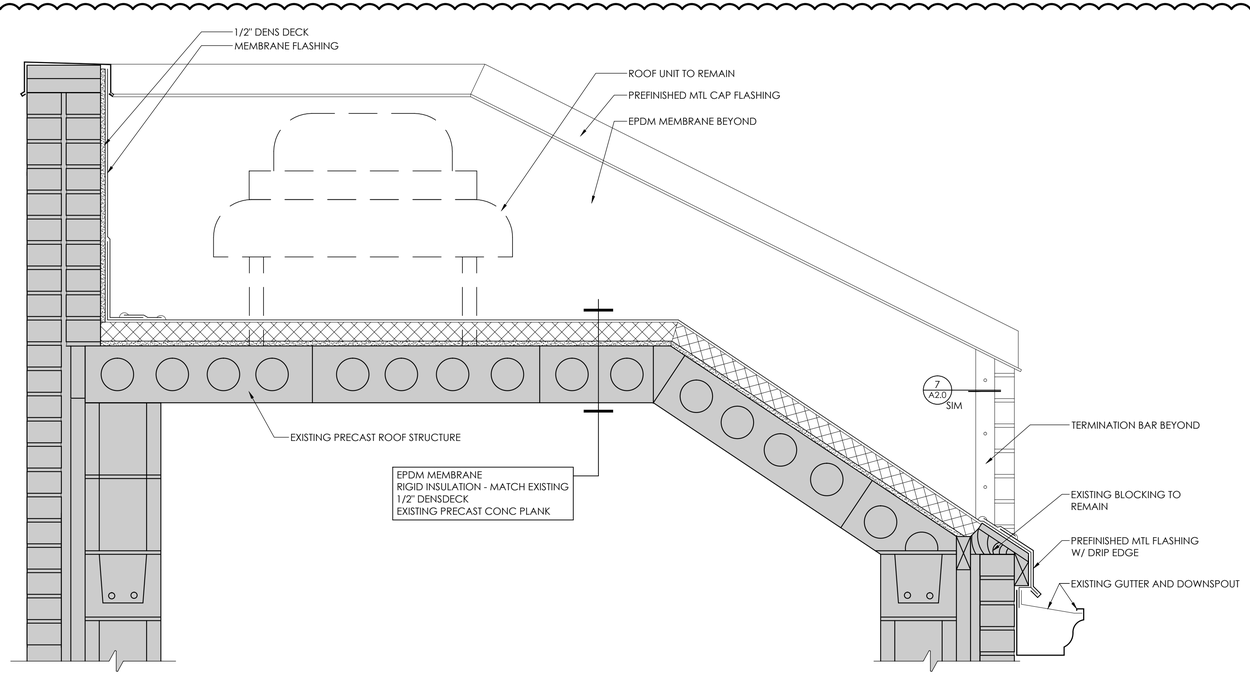
DATE: NOVEMBER 25, 2014
DRAWN: TJB, JPG
CHECKED: WBS
PROJECT: 1423

0 2"
FULL SCALE

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 POLYISOCYAURATE 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. NOT USED.
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.



1 A3.0 **HOSE TOWER ROOF**

1-1/2"=1'-0"

Northland Consulting Engineers L.L.P.

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 #7 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 #7 building located at 1419 Maple Grove Road in Duluth, Minnesota. There are two roof areas on this building, an upper and lower roof area.

The roof area over the garage is higher than the roof area over the living quarters/office area. Therefore, there is a potential for drifting snow load on the lower roof area due to the high/low roof condition. Based on our site visit and roof penetration it appears that the existing roof systems consists of an adhered EPDM roof membrane over 5 ½" of isocyanurate insulation on top of the existing pre-cast concrete plank. The roof areas are structurally sloped for drainage.

For both roof areas the existing roof framing system consists of 12" deep pre-cast concrete plank. The pre-cast concrete plank span a distance of 37'-0" for the lower roof area and 39'-0" for the upper roof area between masonry bearing walls. No ceiling lining was present in the garage area. The ceiling lining in the living quarters/office area consists of acoustic tile.

Original building structural drawings could not be located at the time of our site visit therefore the reinforcing strand size and spacing in the existing pre-cast plank could not be determined for our analysis. Without this information an exact live load capacity for the pre-cast plank cannot be calculated. However, based on PCI load tables the minimum reinforced 12" pre-cast plank has a live (snow) load capacity of 60 pounds per square foot (psf) for the upper roof and 65 psf for the lower roof. This capacity exceeds the 42 psf live load requirement for the upper roof area based on the current 2007 Minnesota State Building Code adopting and amending the 2006 International Building Code (IBC). The lower roof live load capacity does not meet the 100 psf drifting snow load we calculated for the lower roof area based on the current Minnesota State Building Code.

It is our professional opinion that the new roof system for the upper and lower roof areas on this building can match the existing roof system composition. Since we have to assume that the lower roof area does not meet the required drifting snow load, the R-value of the new roof system on the lower roof cannot be increased over the existing roof R-value.

Sincerely yours,

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.

Mark R. Udd, P.E. — 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

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