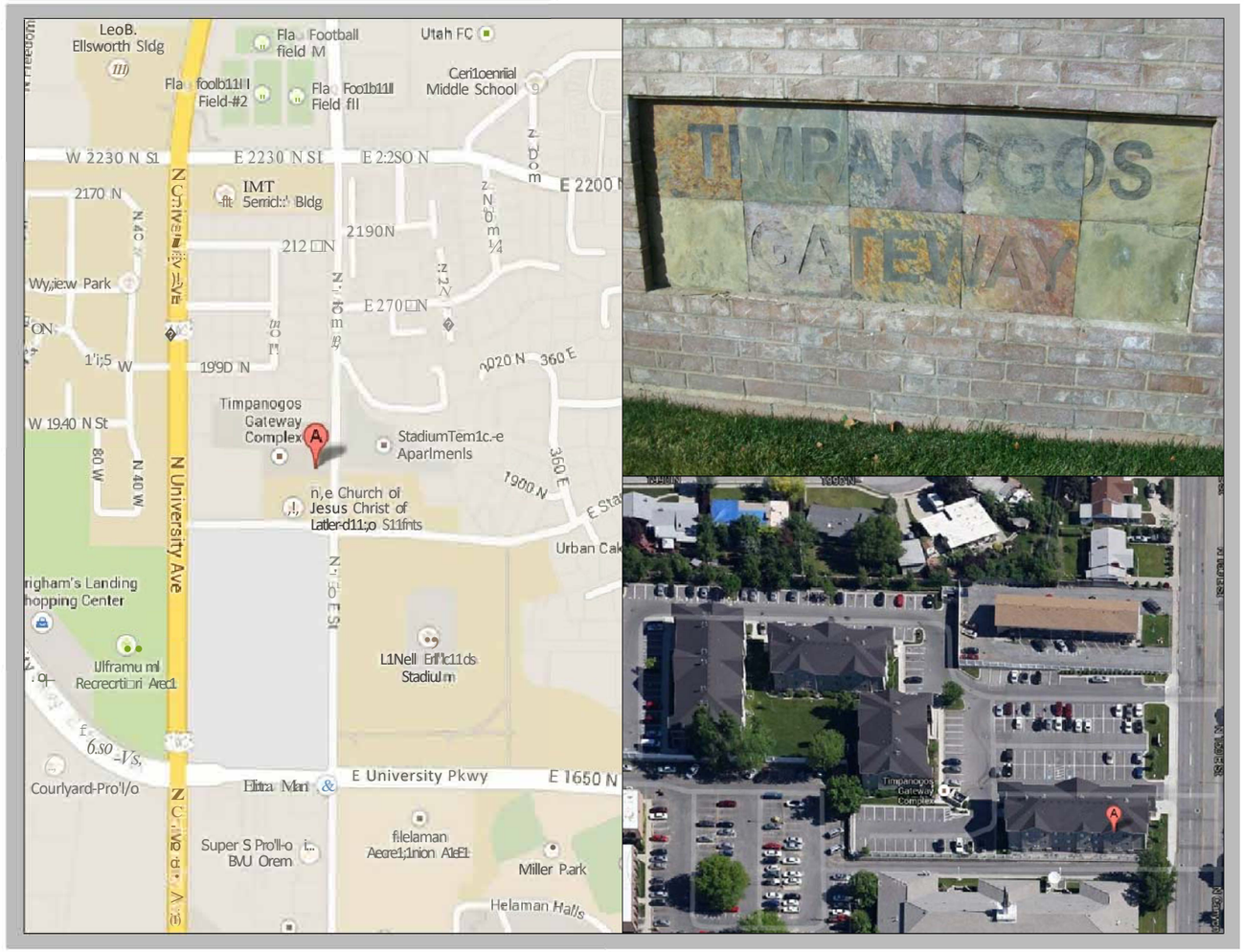
FTTP - FIBER TO THE PREMISE PROJECT

TIMPANOGOS GATEWAY
1931 N CANYON RD
PROVO, UT 84604



GOOGLE FIBER MDU DESIGN			DESIGN PRESENTED FOR APPROVAL	
MASTEC TASK#: 1931NCANRD-E	**FIBERHOOD:** TBD	**PROJECT CODE:** TBD	AGREED UPON BY:	DATE:
GEO CODE: 40.259533° ' -111.656400°	**COUNTY:** UTAH	**PROPERTY CONTACT:**	AGREED UPON BY:	DATE:
MASTEC FIELD ENGINEER:	**PROPERTY ATTENDEE:** KARLA	DRAWING NOT TO SCALE		
PROPERTY STYLE: LOW RISE	**PROPERTY TYPE:** CONDOS	DRAWN & ENGINEERED BY:		
LIVING UNITS: 57	**OFFICE / AMENITIES:** 0	**COMMERCIAL:** 0		
SHEET: 01	PAGE: COVER PAGE	**DATE:** 11/21/2013		

CONSTRUCTION NOTES

OSP NOTES

- BUILDINGS ARE FED FROM PEDS 6514, & PED 6445 AS SHOWN ON DRAWING.
- NEW 1" UNDERGROUND CONDUIT FROM PEDESTALS TO EACH NEW NOP BOX ON SIDE OF EACH BUILDING, INSTALL AS SHOWN.
- TEST ALL FIBERS FROM NOP TO EACH PEDESTAL & FIBER MEET POINT.

ISP NOTES

- FROM NOP BOX INSTALL FIBERS IN IVORY RAIN GUTTER MOLDING TO ROOF LINE.
- INSTALL ONE MICRO-DUCT PER-UNIT THROUGH ATTIC SPACE ATTACHED TO RAFTERS INTO BEDROOM WALK IN CLOSET.
- INSTALL FIBER JACK NEXT TO EXISTING TELEPHONE BOX WHICH CONTAINS EXISTING HOME RUN COAX & ETHERNET TO EACH ROOM. TELEPHONE BOX ALSO HAS DUPLEX RECEPTACLE FOR POWER INSIDE.
- TEST ALL FIBERS FROM FIBER JACK TO EACH NOP.
- FIRE STOP ALL HOLES TO SPECIFICATION AND CODE.
- 100% ACCESS IS REQUIRED DURING FIBER CONSTRUCTION.

SERVING ADDRESSES

1931 **N CANYON** RD - 57 LIVING UNITS (4 BUILDINGS-3 FLOORS EACH)
BUILDING 1969 N - UNITS 109,110,111,112,113,114,209,210,211,212,213,214,309,310,311,312,313,314
BUILDING 1963 **N** - UNITS 105,106,107,108,205,206,207,208,305,306,307,308
BUILDING 1937 **N** - UNITS 101, 102, 103,104,201,202,203,204,301,302,303,304
BUILDING 1931 **N** - UNITS 115,116,117,118,119,215,216,217,218,219,315,316,317,318,319

SAFETY IDENTIFICATION* PROTECTIVE MEASURES

APPROPRIATE CAUTION AND WORK SIGNS AND ALL OTHER REQUIRED SIGNS WILL BE PLACED AND MAINTAINED WHEN AND WHERE REQUIRED THROUGHOUT THE JOB SITE UNTIL THE JOB IS COMPLETED. THE PATHWAY CREW WILL BE REQUIRED TO PROVIDE ADEQUATE PROTECTION TO ALL VEHICULAR AND PEDESTRIAN TRAFFIC BY MEANS OF SIGNS, BARRICADES, WARNING LIGHTS, CONES, ETC.
WORK CREWS TO HAVE NX_UTILITIES ID BADGES. ORANGE WORK VEST TO BE WORN ON PROPERTY AT ALL TIMES. CREWS TO ADHERE TO NX_UTILITIES SAFETY MANUAL" NEX004". FOLLOW ALL OSHA/LOCAUSTATE SAFETY PRACTICES.

CONSTRUCTION PATHWAY CREW:

CLEAN UP WORK AREA DAILY. PROVIDE DAILY UPDATE TO PROJECT MANAGER VIA E-MAIL. PROVIDE ASBUILT UPON COMPLETION OF PROJECT. IF OBSERVED THAT SITE JOB IT IS NOT IN COMPLETE ACCORDANCE WITH PRINT, FOR ANY FIELD ISSUE, CONSULT THE FIELD SUPERVISOR.

LEGEND

NETWORK DEMARK **POINT**	B	**MICRO-DUCT**		**CORE DRILL**	
SPLICE POINT		**MICRO-DUCT RISER**		**PENETRATION**	
DISTR. / ACCESS FIBER		**MOLDING**		**POWER** OUTLET	db
DISTR. / ACCESS RISER		**MOLDING RISER**		CATV OUTLET	
VERACITY EQUIPMENT		**HAND VAULT**		**CONDUIT RISER**	
IPROVO PEDESTAL		**FIBER JACK**		**CONDUIT**	
FDH / FDT **MODULE COMBO**	R	**NIU PLATE**		**PULL BOX**	

DRAWN & ENGINEERED BY:

FIELD **ENGINEER:** MICHAEL **GIUSTINIANI**

DESIGN ENGINEER: **CASEY KNIGHT**

DESIGN	REV	DESCRIPTION	DATE
DRAWN BY: MASTEC / INIT		**INITIAL ISSUE**	11/21/2013
DRAWN BY:			
DRAWN BY:			
DRAWN BY:			

TIMPANOGOS GATEWAY
1931 N CANYON RD
PROVO, UT 84604

PROJECT CODE:
TBD

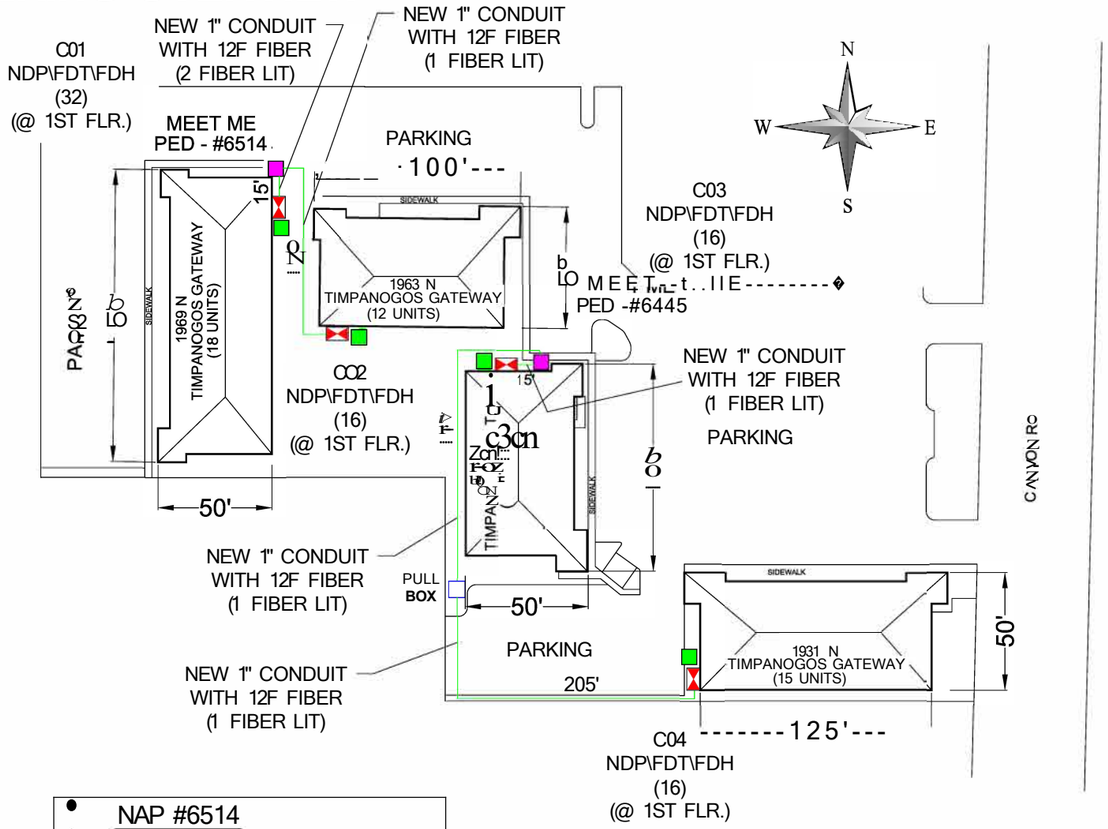
TASK#: 1931 NCANRD-E

FIBERHOOD: TBD

BUILDINGS: 4 **UNITS:** 57

SHEET 02

ENGINEERING OVERVIEW



- NAP #6514
- HUT #10
- (2)12F, 4 SPLICED INTO EXISTING FIBER
- 3 LIT UP
- MDU SPLITTER

- NAP #6645
- HUT #10
- (2)12F, 3 SPLICED INTO EXISTING FIBER
- 2 LIT UP
- MDU SPLITTER

NAP2

NAP

TYP. NOP WITH RAIN GUTTER AND MD RISER TO ATTIC

RISER TO ATTIC

BR B WIRING1

VERACITY

LEGEND

NETWORK DEMARK POINT	B	MICRO-DUCT		CORE DRILL	(i)
SPLICE POINT		MICRO-DUCT RISER		PENETRATION	
DISTR. / ACCESS FIBER		MOLDING		POWER OUTLET	db
DISTR. / ACCESS RISER		MOLDING RISER		CATV OUTLET	
VERACITY EQUIPMENT		HAND VAULT		CONDUIT RISER	
IPROVO PEDESTAL		FIBER JACK		CONDUIT	
FDH / FDT MODULE COMBO	R	NIU PLATE		PULL BOX	

DRAWN & ENGINEERED BY:

FIELD ENGINEER: MICHAEL GIUSTINIANI

DESIGN ENGINEER: CASEY KNIGHT

DESIGN	REV	DESCRIPTION	DATE
DRAWN BY: / INIT		INITIAL ISSUE	11/21/2013
DRAWN BY:			
DRAWN BY:			
DRAWN BY:			

TIMPANOGOS GATEWAY
1931 N CANYON RD
PROVO, UT 84604

PROJECT CODE: TBD

MASTEC TASK#: 1931 NCANRD-E

FIBERHOOD: TBD

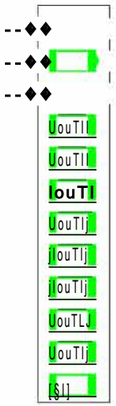
BUILDINGS: 4 UNITS: 57

SHEET 03

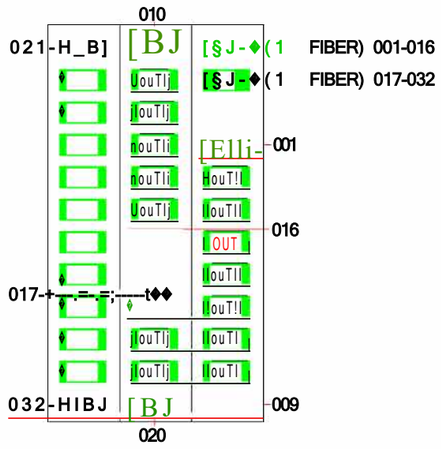
OPTICAL DESIGN

C01 NDP 1 ON
END OF BLDG. 1969N

(1 FIBER) 001 - 016 --◆◆ N FEED FIBER
(1 FIBER) 017 - 032 --◆◆ N FEED FIBER
(SPARE) --◆◆ N FEED FIBER

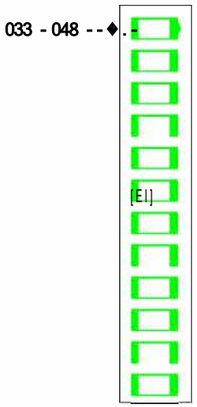


C01 (32 PORT OPTICAL HUB TERMINAL MODULE - FEEDS 18 UNITS)
(2) 1 x 16 SC CASS / SPLIT

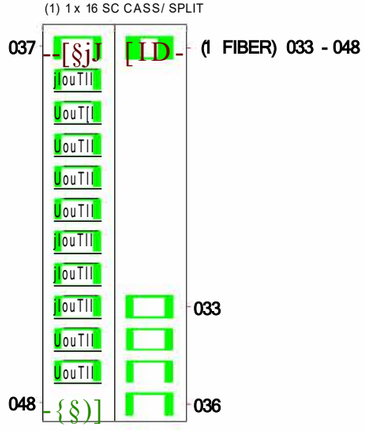


CC2 NDP 2 ON
END OF BLDG. 1963N

(1 FIBER) 033 - 048 --◆◆ N FEED FIBER

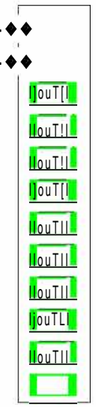


C01 (16 PORT OPTICAL HUB TERMINAL MODULE - FEEDS 12 UNITS)
END OF BLDG.151
(1) 1 x 16 SC CASS/ SPLIT

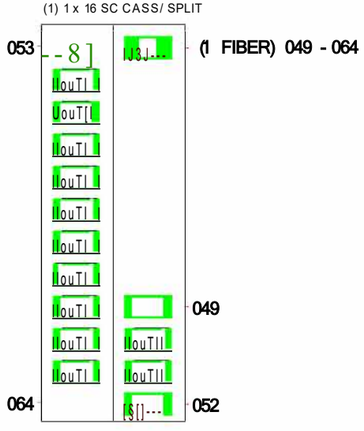


C03 NDP 3 ON
END OF BLDG. 1937N

(1 FIBER) 049 - 064 --◆◆ N FEED FIBER
(SPARE) --◆◆ N FEED FIBER

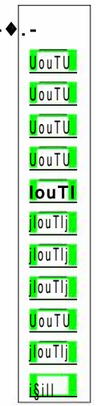


C01 (16 PORT OPTICAL HUB TERMINAL MODULE - FEEDS 12 UNITS)
END OF BLDG. 1937N
(1) 1 x 16 SC CASS/ SPLIT

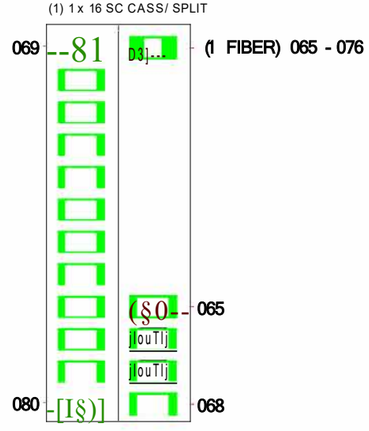


C04 NDP 4 ON
END OF BLDG. 1931N

(1 FIBER) 065 - 076 --◆◆ N FEED FIBER



C01 (16 PORT OPTICAL HUB TERMINAL MODULE - FEEDS 15 UNITS)
END OF BLDG. 1931N
(1) 1 x 16 SC CASS/ SPLIT



LEGEND

NETWORK DEMARK POINT	B	MICRO-DUCT		CORE DRILL	(i)
SPLICE POINT		MICRO-DUCT RISER		PENETRATION	
DISTR. / ACCESS FIBER		MOLDING		POWER OUTLET	db
DISTR. / ACCESS RISER		MOLDING RISER		CATV OUTLET	
VERACITY EQUIPMENT		HAND VAULT		CONDUIT RISER	
IPROVO PEDESTAL		FIBER JACK		CONDUIT	
FDH / FDT MODULE COMBO	R	NIU PLATE		PULL BOX	

DRAWN & ENGINEERED BY:

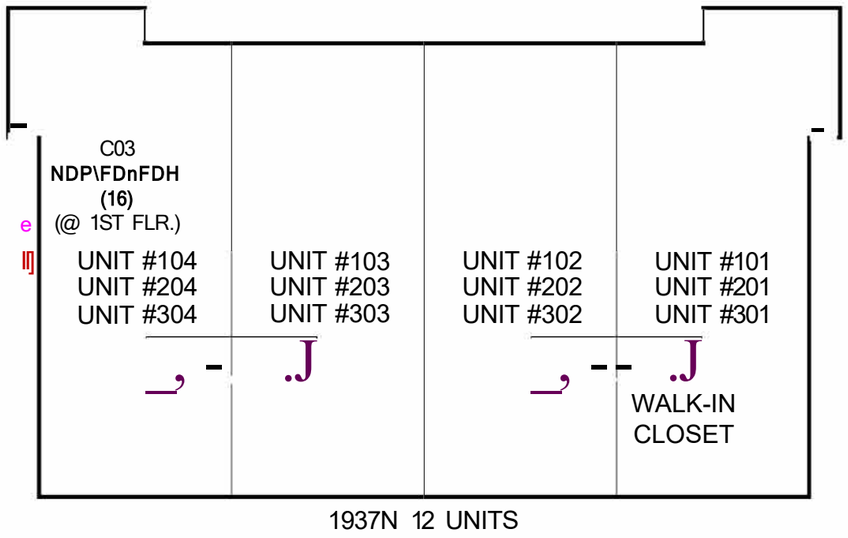
FIELD ENGINEER:I
DESIGN ENGINEER: CASEY KNIGHT

DESIGN	REV	DESCRIPTION	DATE
DRAWN BY: / INIT		INITIAL ISSUE	11/21/2013
DRAWN BY:			
DRAWN BY:			
DRAWN BY:			

TIMPANOGOS GATEWAY
1931 N CANYON RD
PROVO, UT 84604

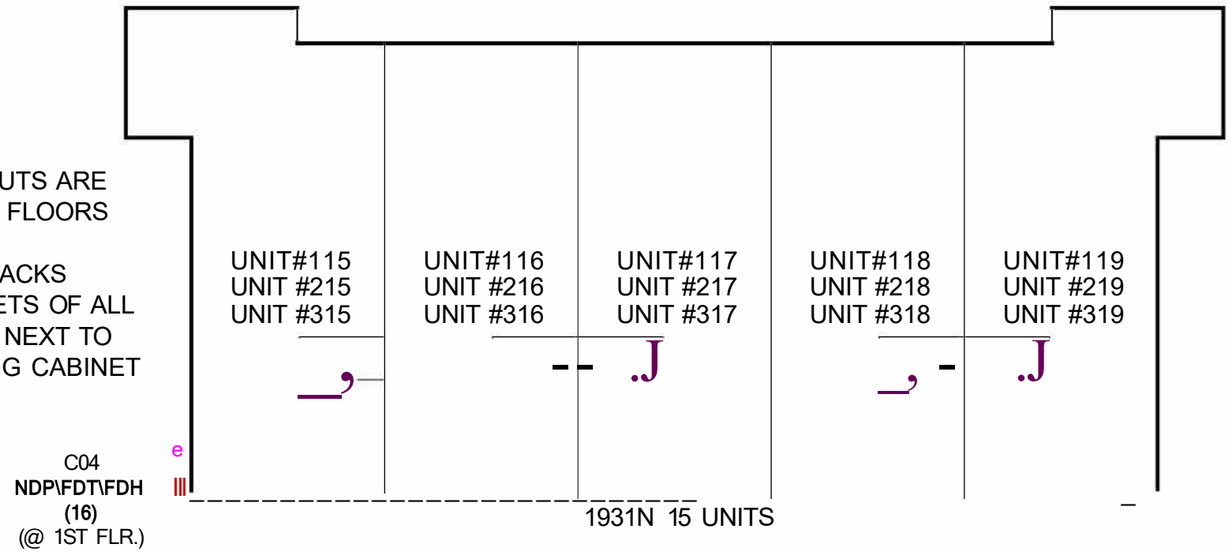
PROJECT CODE: **TBD**
MASTEC TASK#: **1931 NCANRD-E**
FIBERHOOD: **TBD**
BUILDINGS: **4** UNITS: **57**
SHEET **04**

BUILDING TOP VIEW FLOORS 1-3



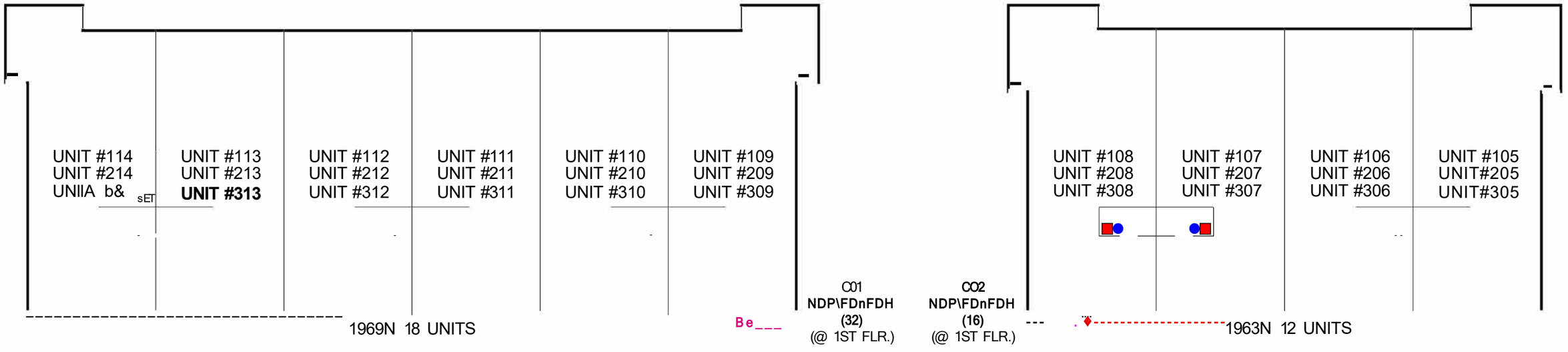
NOTE: UNIT LAYOUTS ARE TYPICAL FOR ALL FLOORS

NOTE: FIBER JACKS IN BEDROOM CLOSETS OF ALL UNITS INSTALLED NEXT TO STRUCTURED WIRING CABINET



NOTE: ATTIC ACCESS IN EACH 3RD FLOOR UNIT

IVORY RAIN GUTTER MOLDING FOR ALL EXTERIOR RISERS



LEGEND

NETWORK DEMARK POINT	B	MICRO-DUCT		CORE DRILL	
SPLICE POINT		MICRO-DUCT RISER		PENETRATION	
DISTR. / ACCESS FIBER		MOLDING		POWER OUTLET	db
DISTR. / ACCESS RISER		MOLDING RISER		CATV OUTLET	
VERACITY EQUIPMENT				CONDUIT RISER	
IPROVO PEDESTAL		FIBER JACK		CONDUIT	
FDH / FDT MODULE COMBO		NIU PLATE		PULL BOX	

DRAWN & ENGINEERED BY:

FIELD ENGINEER: MICHAEL GIUSTINIANI

DESIGN ENGINEER: CASEY KNIGHT

DESIGN	REV	DESCRIPTION	DATE
DRAWN BY: / INIT		INITIAL ISSUE	11/21/2013
DRAWN BY:			
DRAWN BY:			
DRAWN BY:			

TIMPANOGOS GATEWAY
1931 N CANYON RD
PROVO, UT 84604

PROJECT CODE: TBD

MASTEC TASK#: 1931 NCANRD-E

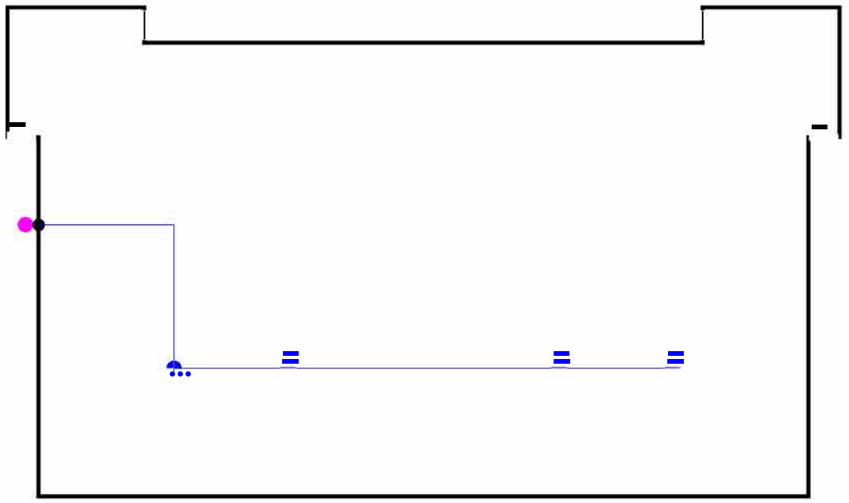
FIBERHOOD: TBD

BUILDINGS: 4 UNITS: 57

SHEET 05

BUILDING TOP VIEW

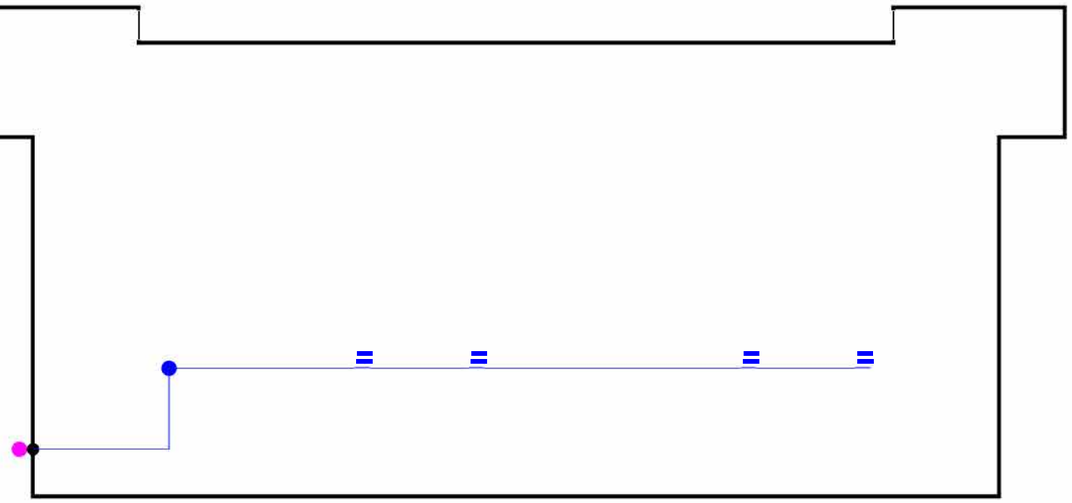
ATTIC



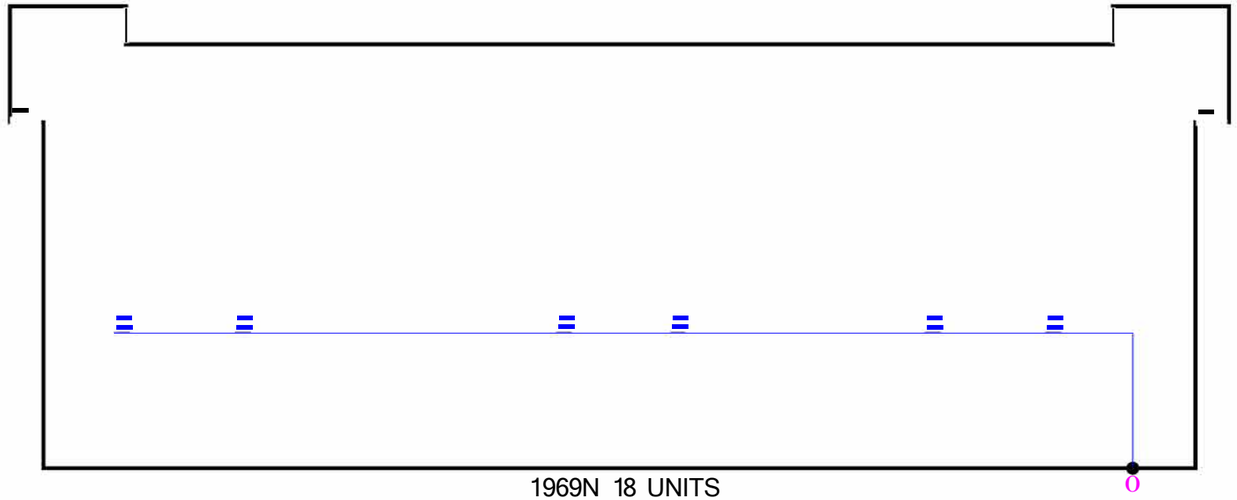
1937N 12 UNITS

IVORY RAIN GUTTER MOLDING FOR ALL EXTERIOR RISERS

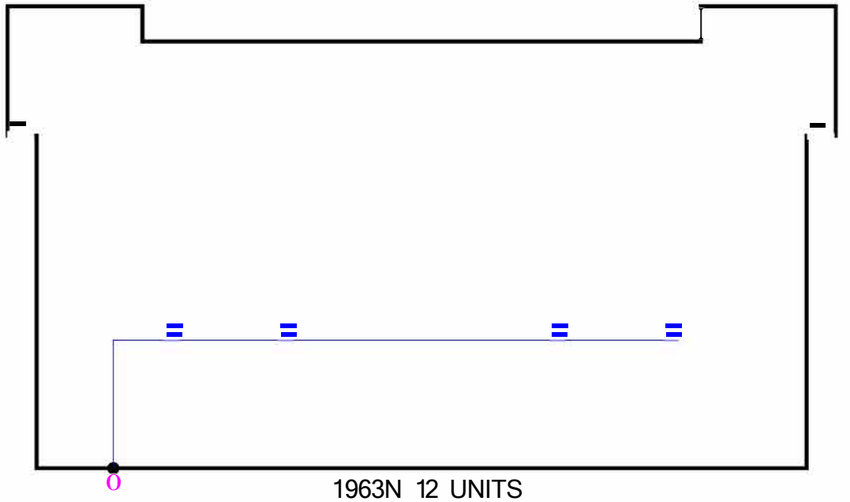
MICRODUCT RISERS FOR ALL UNITS ARE LOCATED IN STACKED BEDROOM CLOSETS



1931N 15 UNITS



1969N 18 UNITS



1963N 12 UNITS

LEGEND

NETWORK DEMARK POINT	B	MICRO-DUCT		CORE DRILL	
SPLICE POINT		MICRO-DUCT RISER		PENETRATION	
DISTR. / ACCESS FIBER		MOLDING		POWER OUTLET	db
DISTR. / ACCESS RISER		MOLDING RISER		CATV OUTLET	
VERACITY EQUIPMENT		HAND VAULT		CONDUIT RISER	
IPROVO PEDESTAL		FIBER JACK		CONDUIT	
FDH / FDT MODULE COMBO		NIU PLATE		PULL BOX	

FIELD ENGINEER: MICHAEL GIUSTINIANI

DESIGN ENGINEER: CASEY KNIGHT

DESIGN	REV	DESCRIPTION	DATE
DRAWN BY: / INIT		INITIAL ISSUE	11/21/2013
DRAWN BY:			
DRAWN BY:			
DRAWN BY:			

TIMPANOGOS GATEWAY
1931 N CANYON RD
PROVO, UT 84604

PROJECT CODE: TBD

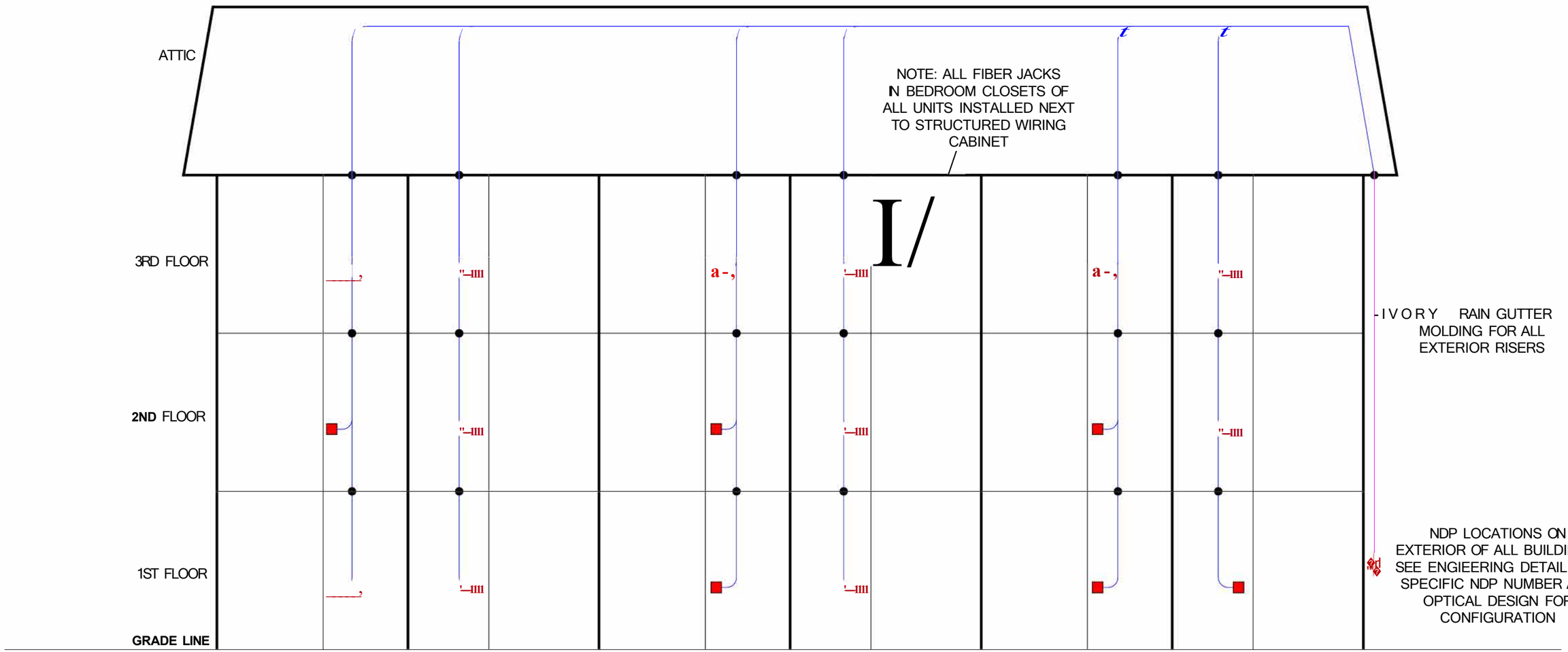
MASTEC TASK#: 1931 NCANRD-E

FIBERHOOD: TBD

BUILDINGS: 4 UNITS: 57

SHEET 06

RISER DIAGRAM



RISER DETAIL IS TYPICAL FOR ALL BUILDINGS REGARDLESS OF NUMBER OF UNITS. NUMBER OF RISERS FOR EACH BUILDING MY VARY TO ACCOMMODATE THE ACTUAL NUMBER OF UNITS. MICRODUCT RISERS TRAVEL THROUGH STACKED BEDROOM CLOSETS OF ALL UNITS

LEGEND

NETWORK DEMARK POINT	B	MICRO-DUCT		CORE DRILL	
SPLICE POINT		MICRO-DUCT RISER		PENETRATION	
DISTR. / ACCESS FIBER		MOLDING		POWER OUTLET	db
DISTR. / ACCESS RISER		MOLDING RISER		CATV OUTLET	
VERACITY EQUIPMENT		HAND VAULT		CONDUIT RISER	
IPROVO PEDESTAL		FIBER JACK		CONDUIT	
FDH / FDT MODULE COMBO	R	NIU PLATE		PULL BOX	

DRAWN & ENGINEERED BY:

FIELD **ENGINEER:** MICHAEL **GIUSTINIANI**

DESIGN ENGINEER: **CASEY KNIGHT**

DESIGN	REV	DESCRIPTION	DATE
DRAWN / INIT		INITIAL ISSUE	11/21/2013
DRAWN BY:			
DRAWN BY:			
DRAWN BY:			

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PROJECT CODE: TBD

MASTEC TASK#: 1931 NCANRD-E

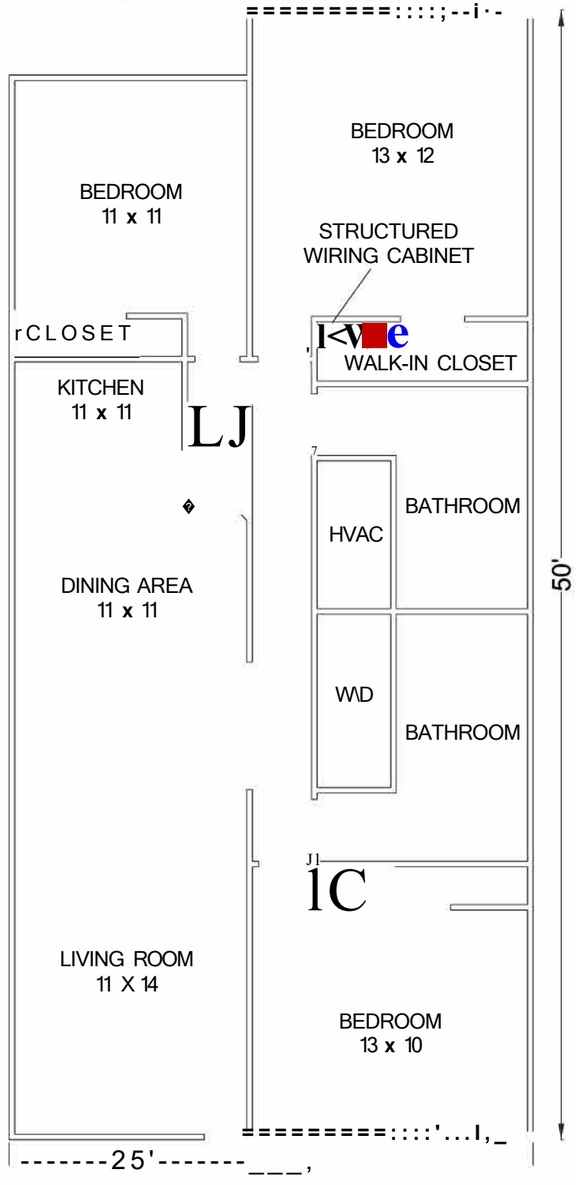
FIBERHOOD: TBD

BUILDINGS: 4 **UNITS:** 57

SHEET 07

FLOOR PLANS

NOTE: FLOOR PLAN TYPICAL FOR
ALL UNITS IN ALL BUILDINGS



LEGEND

NETWORK DEMARK POINT	B	MICRO-DUCT		CORE DRILL	
SPLICE POINT		MICRO-DUCT RISER		PENETRATION	
DISTR. / ACCESS FIBER		MOLDING		POWER OUTLET	db
DISTR. / ACCESS RISER		MOLDING RISER		CATV OUTLET	
VERACITY EQUIPMENT		HAND VAULT		CONDUIT RISER	
IPROVO PEDESTAL		FIBER JACK		CONDUIT	
FDH / FDT MODULE COMBO	R	NIU PLATE		PULL BOX	

DRAWN & ENGINEERED BY:

FIELD ENGINEER: MICHAEL GIUSTINIANI

DESIGN ENGINEER: CRAIG KNIGHT

DESIGN	REV	DESCRIPTION	DATE
DRAWN BY: / INIT		INITIAL ISSUE	11/21/2013
DRAWN BY:			
DRAWN BY:			
DRAWN BY:			

TIMPANOGOS GATEWAY
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PROJECT CODE: TBD

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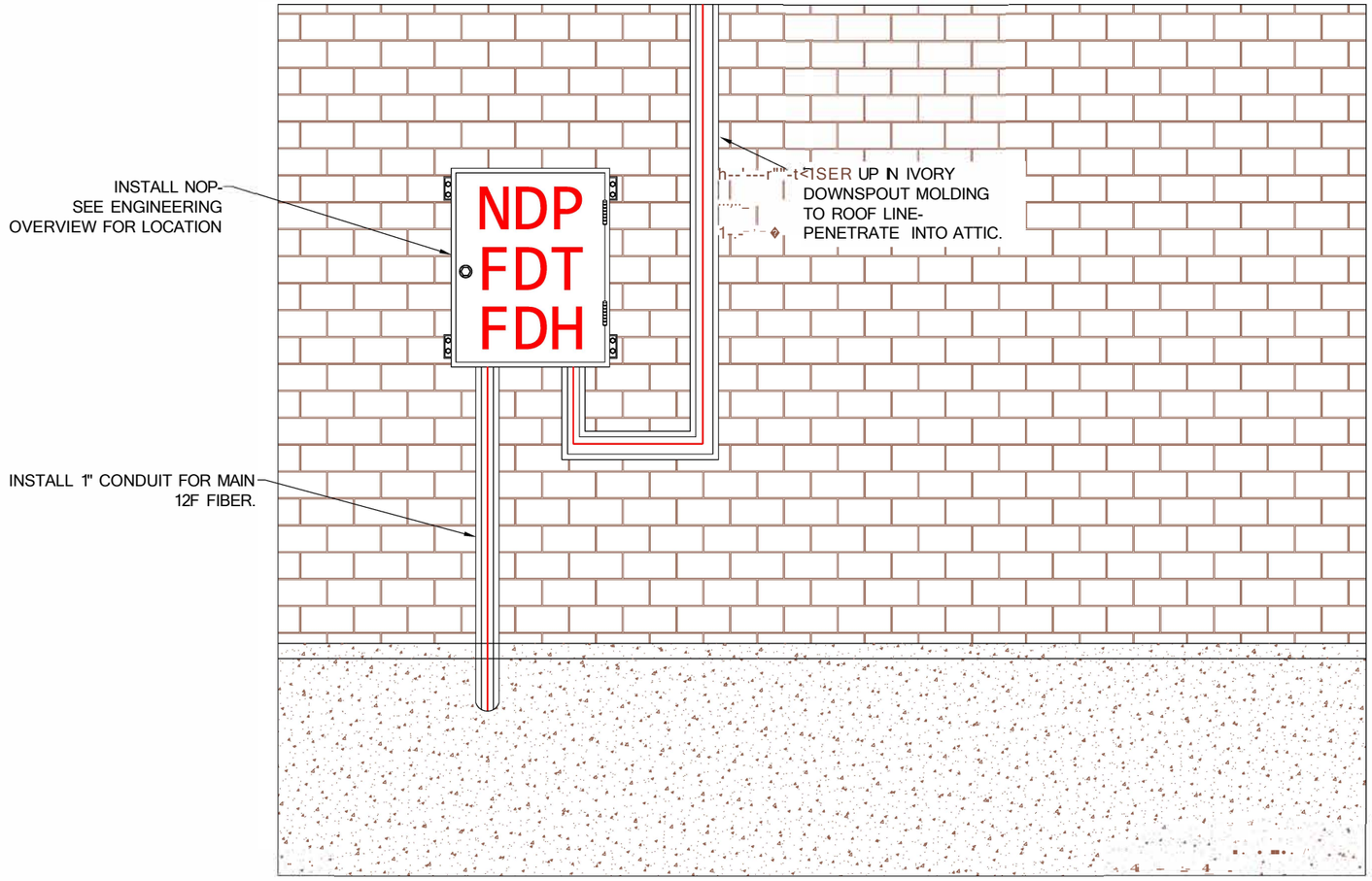
BUILDINGS: 4 UNITS: 57

SHEET 08

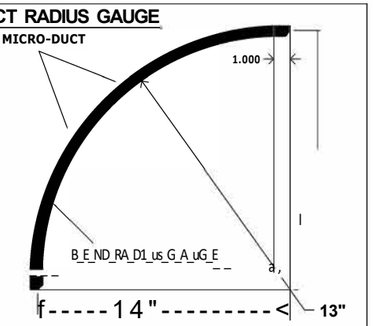
NDP INSTALLATION



NOP INSTALLATION TYPICAL FOR ALL BUILDINGS SEE INFO BELOW FOR SPECIFIC CONFIGURATION

C01 NDP\FDnFDH	C02 NDP\FDT\FDH	C03 NDP\FDnFDH	C04 NDP\FDnFDH
(32) (@ 1ST FLR.)	(16) (@ 1ST FLR.)	(16) (@ 1ST FLR.)	(16) (@ 1ST FLR.)
2 FIBERS LIT	1 FIBER LIT	1 FIBER LIT	1 FIBER LIT
FROM PED# 6514	FROM PED# 6514	FROM PED #6445	FROM PED #6445

MICRO-DUCT RADIUS GAUGE



THIS GAUGE IS DESIGNED TO BE USED TO INSURE THE BENDS IN THE MICRO-DUCT HAVE NOT EXCEEDED THE MINIMUM BEND RADIUS (FIGURE).
LARGE BEND RADIUS IS OKAY AND RECOMMENDED.
THE PART NUMBER IS 22-48: MICRO-DUCT BEND RADIUS GAUGE.

LEGEND

NETWORK DEMARK POINT	B	MICRO-DUCT		CORE DRILL	(i)
SPLICE POINT		MICRO-DUCT RISER		PENETRATION	
DISTR. / ACCESS FIBER		MOLDING		POWER OUTLET	db
DISTR. / ACCESS RISER		MOLDING RISER		CATV OUTLET	
VERACITY EQUIPMENT		HAND VAULT		CONDUIT RISER	
IPROVO PEDESTAL		FIBER JACK		CONDUIT	
FDH / FDT MODULE COMBO	R	NIU PLATE		PULL BOX	

DRAWN & ENGINEERED BY:

FIELD ENGINEER: MICHAEL GIUSTINIANI

DESIGN ENGINEER: CASEY KNIGHT

DESIGN	REV	DESCRIPTION	DATE
DRAWN / INIT		INITIAL ISSUE	11/21/2013
DRAWN BY:			
DRAWN BY:			
DRAWN BY:			

TIMPANOGOS GATEWAY
1931 N CANYON RD
PROVO, UT 84604

PROJECT CODE: TBD

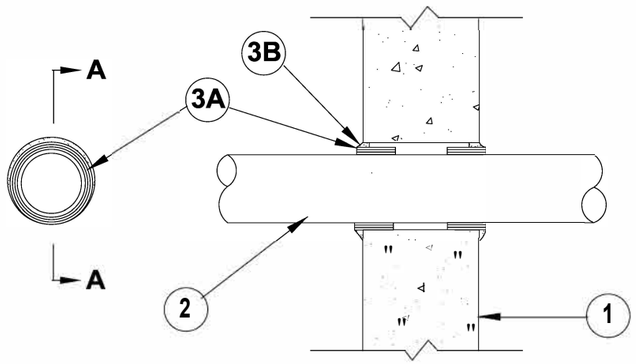
MASTEC TASK#: 1931 NCANRD-E

FIBERHOOD: TBD

BUILDINGS: 4 UNITS: 57

SHEET 09

System No.W-I-2152
September 08, 2004
F Rating – 2 Hr
T Rating - 2 Hr



SECTION A-A

1. Wall Assembly - Min 6 in. (152 mm) \hick reinforced lightweight or normal weigh\ (100-150 pcf or 1600-2400 kg/m3) concrete wall. Wall may also be constructed of any UL Classified **Concrete Blocks*.** Max diam of opening is 4-1/2 in. (114 mm).

See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. Through Penetrants - One nonmetallic pipe or conduit concentrically or eccentrically within the fires\op system. The annular space between pene\rant and sleeve shall be min 3/8 in. (10 mm) \o max 5/8 in. (16 mm). Penetrant \o be rigidly supported on both sides of wall assembly. The following types and sizes of nonmetallic pipes or conduits:

A. **Polyvinyl Chloride (PVC) Pipe** - Nom 3 in. (76 mm) diam (or smaller) Schedule 40 solid core or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

B. **Rigid Nonmetallic Conduit++** - Nom 3 in. (76 mm) diam (or smaller) Schedule 40 PVC conduit installed in accordance with Article 347 of the Notional Electrical Code (NFPA No. 70).

C. **Chlorinated Polyvinyl Chloride (CPVC) Pipe** - Nom 3 in. (76 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.

D. **Acrylonitrile Butadiene Styrene (ABS) Pipe** - Nom 3 in. (76 mm) diam (or smaller) Schedule 40 solid core or cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

3. Firestop System - The fires\op system shall consist of \he following:

A. **Fill,Void or Cavity Materials* - Wrap Strip** - Nom 1/B in. (3.2 mm) thick intumescent material supplied in 2 in. (51 mm) wide strips. Min three layers of wrap strip tightly wrapped around nonmetallic pipe and completely wrapped with min 3 mil foil tape. Wrap strip to be slid into opening such tho\ \he outer edge of wrap strip extends approx 1/2 in. from both surfaces of wall.

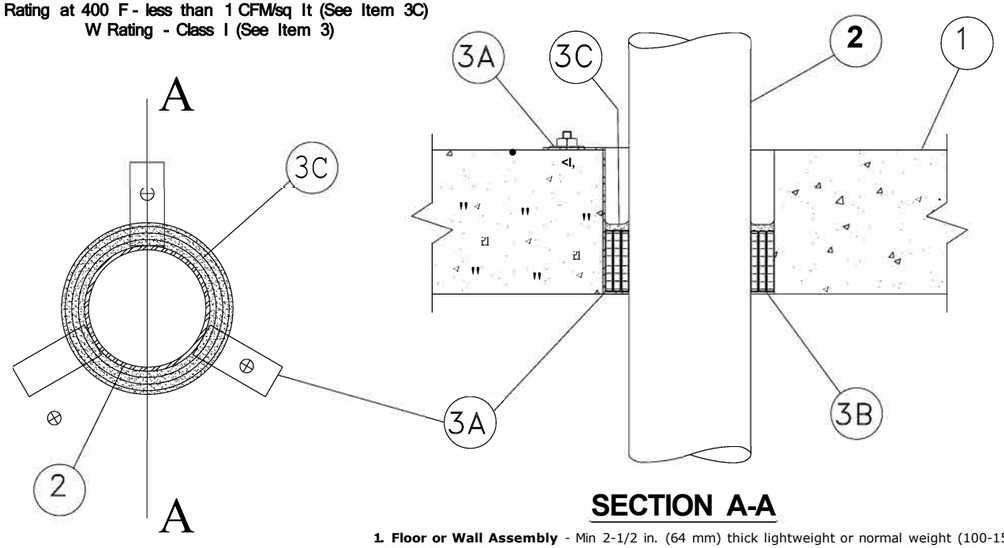
3M Company - Ultra GS

B. **Fill,Void or Cavity Material* - Caulk or Sealant** - Min 5/8 in. (16 mm) thickness of caulk or seal an\ applied within annulus, flush with both surfaces of wall. Min 1/2 in. (13 mm) diam bead of caulk or sealant applied to concrete/wrap strip interface at point contact location on both sides of wall.

3M COMPANY - IC 15WB, CP 25WB+ caulk or FB-3000 WT sealant

*Bearing the UL Classification Marking

System No. C-AJ-2002
August 23, 2004
(Formerly System No. 64-B)
F Rating - 2 Hr
T Ratings - 0 and 2 Hr
L Rating at Ambient - 7 CFM/sq It
L Rating at 400 F - less than 1 CFM/sq It (See Item 3C)
W Rating - Class I (See Item 3)



SECTION A-A

1. Floor or Wall Assembly - Min 2-1/2 in. (64 mm) thick lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks*.** Max diam of circular opening is 6-1/2 in. (165 mm).
See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

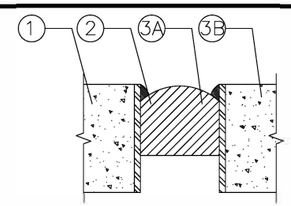
2. Nonmetallic Pipe or Conduit - Nom 4 in. (102 mm) diam (or smaller) Schedule 40 solid core or cellular core, polyvinyl chloride (PVC) pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems or **Rigid Nonmetallic Conduit++** or SDR 13.5 chlorinated polyvinyl chloride (CPVC) pipe for use in closed (process or supply) piping systems. A max of one pipe or conduit is permitted in the firestop system. Except as noted in Item B, the pipe or conduit shall be centered in the through opening. Pipe or conduit to be rigidly supported on both sides of floor or wall assembly.
See **Rigid Nonmetallic Conduit** (DZKT) category in the UL Electrical Construction Materials Directory for names of manufacturers.

3. Firestop System - The hourly T Ratings for the firestop system are dependent upon the firestop orientation (wall or floor), the size of the nonmetallic pipe or conduit, and the floor thickness, as tabulated below:

Orientation (a)	Nom Pipe Diam in. (mm)	Annular Space in. (mm)	F Rating Hr	T Rating Hr
F (b)	1/2 to 2 (13 to 51)	1/4 to 1 (6 to 25)	2	0
F (b)	2-1/2, 3 (64, 76)	1/2 to 1 (13 to 25)	2	0
W,F	1/2 to 2 (13 to 51)	1/2 to 1 (6 to 25)	2	2
W,F	2-1/2, 3 (64, 76)	1/2 to 1 (13 to 25)	2	2
W,F	3-1/2, 4 (89, 102)	3/4 to 1 (19 to 25)	2	2

(a) W = wall, F = floor
(b) Min concrete floor thickness is 2-1/2 in. (64 mm).
The details of the firestop system shall be as follows:

A. Steel Support Clips - Nom 1 in. (25 mm) wide by nom 0.019 in. (0.5 mm) thick (28 gauge) galv steel strips field-formed into "Z"-shape with height of z-shape equal to the floor thickness and with width of bottom (as installed) leg of sufficient length to span annular space. Top (as installed) leg of Z shape to be min 2 in. (51 mm) long and may or may not be secured to top surface
into "L"-shape with height equal to 2 in. (51 mm) and with bottom (as installed) leg of sufficient length to span annular space. Clips secured to outermost wrap strip layer with steel wire tie prior to insertion in through opening. Min of three steel support clips to be used, symmetrically located, with bottom leg of clips flush with bottom plane of floor. When annular space around nom 1/2 in. to 2 in. (13 mm to 51mm) diam pipe in floor assembly is 1/4 in. to 3/8 in. (6 mm to 10 mm) , steel support clips are not required.



1) Floor or Wall Assembly- Min4 - 1/2 in. (144 mm) thick reinforced lightweight or normal weight (100-150 pcfor 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*.
See Concrete Blocks (CAZT) category in the fire Resistance Directory for names of **manufacturers.**

2) Nonmetallic Sleeve - Nom 4 in. diam. (or smaller) Schedule 40 (or heavier) polyvinyl Chloride (STEEL) sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces. Sleeve may extend max. 2 in. (51 mm) above top surface of floor or both surfaces of wall. When sleeve extends above top surface of floor or either surface of wall, T Rating is **O**Hr.

3) Firestop System - The firestop System shall consist of the following:
A. Fill, Void or Cavity Materials* - Plug - Plug sized for the sleeve friction - fitted within the the sleeve with edges recessed 1/2 in. (13 mm) from the top surface of the floor or from both surfaces of the wall.
HILT! CONSTRUCTION CHEMICALS, DIV. OF HILT! INC-CP 658T Firestop Plug.
B. Fill, Void or Cavity Materials* - Putty- Nom 1/2 in. (13 mm) diam. bead of putty applied around periphery of opening at plug/ sleeve interface.
HILT! CONSTRUCTION CHEMICALS, DIV. OF HILT! INC-CP 618T Firestop Putty Stick.

* Bearing the UL Classification Mark.

FIRESTOP PLUG DETAIL

LEGEND

NETWORK DEMARK POINT	B	MICRO-DUCT		CORE DRILL	
SPLICE POINT		MICRO-DUCT RISER		PENETRATION	
DISTR. / ACCESS FIBER		MOLDING		POWER OUTLET	db
DISTR. / ACCESS RISER		MOLDING RISER		CATV OUTLET	
VERACITY EQUIPMENT		HAND VAULT		CONDUIT RISER	
IPROVO PEDESTAL		FIBER JACK		CONDUIT	
FDH / FDT MODULE COMBO	R	NIU PLATE		PULL BOX	

DRAWN & ENGINEERED BY:

FIELD ENGINEER: MICHAEL GIUSTINIANI
DESIGN ENGINEER: **CASEY KNIGHT**

DESIGN	REV	DESCRIPTION	DATE
DRAWN BY: / INIT		**INITIAL ISSUE**	11/21/2013
DRAWN BY:			
DRAWN BY:			
DRAWN BY:			

TIMPANOGOS GATEWAY
1931 N CANYON RD
PROVO, UT 84604

PROJECT CODE:
TBD

MASTEC TASK#: 1931 NCANRD-E

FIBERHOOD: TBD

BUILDINGS: 4 **UNITS: 57**

SHEET
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