Highland Township Fire Station No. 1

Highland Township

1600 W. Highland Rd. Highland, MI 48357

CONSTRUCTION

PARTNERS



Architect

Architect:

PARTNERS in Architecture, PLC

Highland Township Fire Department

65 Market Street Mount Clemens, MI 48043 (Phone) 586-469-3600 (Fax) 586-469-3607 250 W Livingston Rd Highland, MI 48357 (Phone) (248) 887-8688

Builder:

Civil Engineer:

Axiom Construction Services Group, LLC

Environmental Engineers, Inc.

7789 E. M-36 Whitemore Lake, MI 48189 (Phone) 248-446 1104 (Fax) 248-446 1105 18620 W. Ten Mile Rd. Southfield, MI 48075 (Phone) 248-424-9510

Structural Engineer: Shymanski & Assoc.

Mech. / Elec. Engineer:

MA Engineering

33426 5 Mile Rd 48154 Livonia, Michigan (Phone) 734-855-4810

400 S. Old Woodward Ave Birmingham, MI 48009 (Phone) 248-258-1610

| Sheet Number | Sheet Title |
|----------------|---|
| A0-00 | Cover Sheet |
| Civil | |
| TS-1 | Overall Topographic Survey |
| TS-1A | Site Topographic Survey |
| SP-1 | Site Layout Plan |
| SD-1 | Site Demolition Plan |
| SE-1 | Site Soil Erosion & Sedimentation Control Plan |
| C-1 | Site Grading & Paving Plan |
| C-2 | Site Stormwater Management Plan & Details |
| C-3 | Site Utilities Plan |
| C-4 | Site Utilities Profiles |
| C-5 | Site Septic System Details |
| C-6 | Site Engineering Details |
| C-7 | M.D.O.T. Standard Details |
| SESC | O.C.W.R.C. Soil Erosion & Sedimentation Control Deta |
| ST-1 | Highland Township Standard Storm Sewer Details |
| ST-2 | Highland Township Standard Storm Sewer Details |
| WM-1 | O.C.W.R.C. Standard Water Main Details |
| WM-2 | O.C.W.R.C. Standard Water Main Details |
| WM-3 | O.C.W.R.C. Standard Water Main Details |
| | |
| Architectural | |
| A0-01 | General Project Information |
| A0-02 | Life Safety Code Information Ream Finish Cabadula & Wall Types |
| A0-03 | Room Finish Schedule & Wall Types Door Schodule & Frame Types |
| A0-04 A0-13 | Door Schedule & Frame Types Opening Details |
| A0-13 A0-14 | Opening Details Opening Details |
| A2-01 | Architectural Site Details |
| A3-01 | Main Level Floor Plan |
| A3-01 A3-02 | Masonry Dimension Plan |
| A3-02 A3-03 | Main Level Dimension Plan |
| A3-10 | Enlarged Floor Plans |
| A3-10 A3-20 | Plan Details |
| A3-20 A3-21 | Plan Details |
| A3-21 | Plan Details |
| A3-30 | Roof Plan |
| A3-31 | Roof Details |
| A4-01 | Reflected Ceiling Plans |
| A4-02 | Ceiling Details |
| A5-01 | Exterior Elevations |
| A5-02 | Exterior Elevations |
| A5-10 | Building Sections |
| A5-11 | Building Sections |
| A6-01 | Wall Sections |
| | |

| Sheet Number | |
|----------------|--|
| A6-03 | Wall Sections |
| A6-04 | Wall Sections |
| A6-10 | Section Details |
| A6-11 | Section Details |
| A8-01 | Interior Elevations |
| A8-02 | Interior Elevations |
| A8-03 | Millwork Details |
| Structural | |
| S3-01 | Foundation Plan |
| S3-02 | Mezzanine Framing Plan |
| S3-03 | Roof Framing Plan |
| S4-00 | General Notes |
| S4-01 | General Notes |
| S4-02 | General Notes |
| S4-03 | Details |
| S5-00 | Details |
| S5-01 | Details |
| S5-02 | Details |
| Mochanical | |
| Mechanical | Machanical Lagand and Abbraviations |
| M0-01 | Mechanical Legend and Abbreviations Mechanical Site Plan |
| M1-00 M1-01 | |
| M1-02 | Floor Plans - Sanitary & Vent Floor Plans - Domestic Water and Gas |
| M2-01 | Floor Plans - HVAC |
| M2-02 | Roof Plan - HVAC |
| M3-01 | Floor Plans - Piping |
| M4-01 | Mechanical Schedules |
| M4-01 | Mechanical Schedules |
| M5-01 | Mechanical Details |
| M5-02 | Mechanical Details |
| M6-01 | Temperature Controls |
| M6-02 | Temperature Controls |
| FP1-01 | Floor Plans - Fire Protection |
| Flactic 1 | |
| Electrical | Flootrical Lawrence Cabadadas Tables and C |
| E0-01 | Electrical Legend, Schedules, Tables and General Note |
| E0-02 | Electrical Riser Diagram Wire and Lighting Fixture Cabadulas and Control Matrix |
| E0-03 | Wire and Lighting Fixture Schedules and Control Matrix |
| E0-04 | Electrical Panel Schedules |
| E1-00 | Electrical Site Plan |
| E2-00 | Floor Plans - Lighting |
| E3-00 | Floor Plans - Power |
| E5-00 | Electrical Details |

Drawing Index

PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

opyrigini 2020

CONSULTANT

I/EV/ DL ANI

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

Bidding - Construction 03/27/20
Addendum #1 04/20/20
Construction Set 05/04/20

DRAWN BY

AR

CHECKED BY

CHECKED BY
LL / AM
APPROVED BY

SHEET NAME

COVER SHEET

SHEET NO. A0-00

ARCHITECTURAL - ASI-03 R1

Project Name:

Highland Township – Highland Township Fire Station No. 1

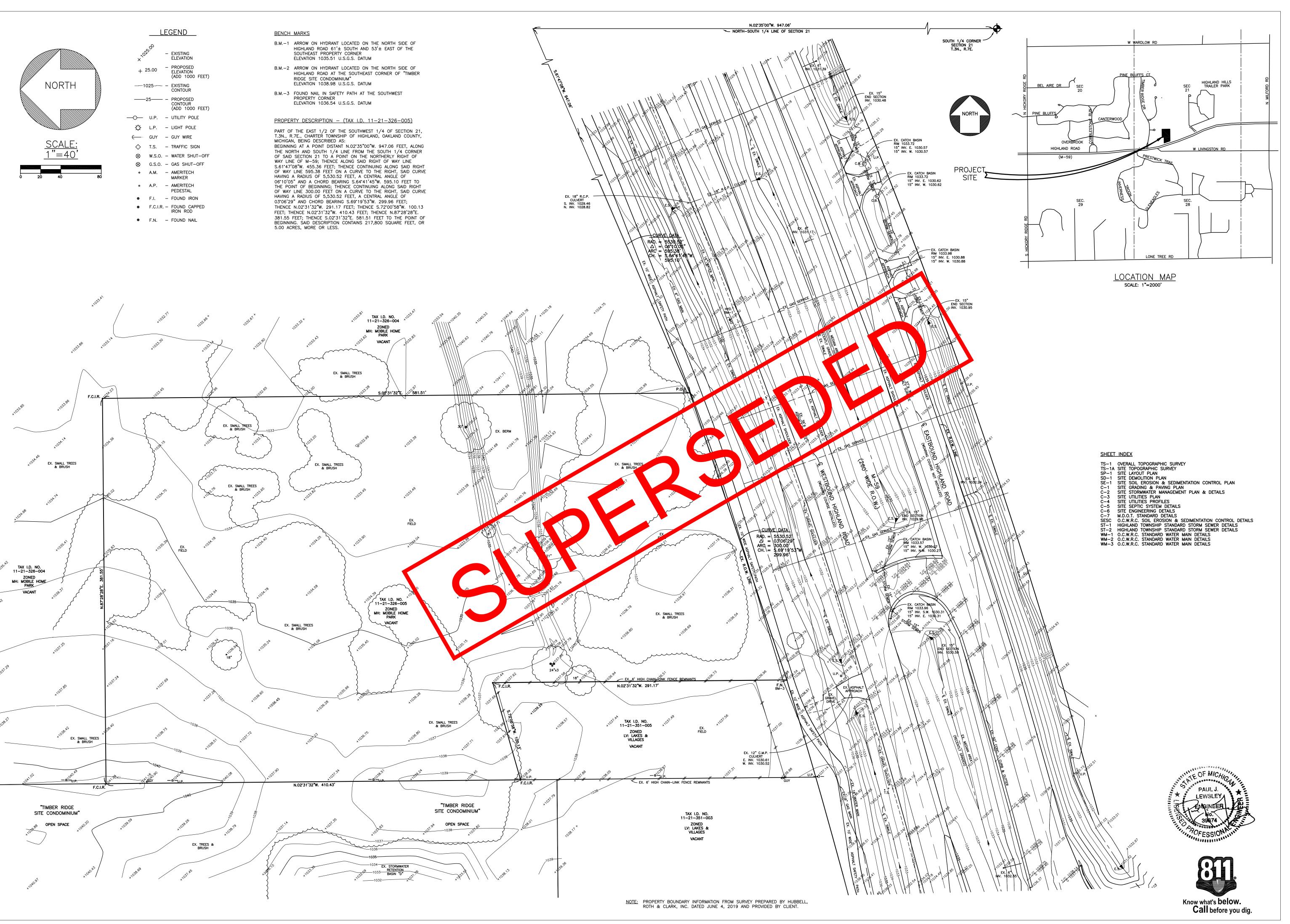
ASI No: Three (3) R1

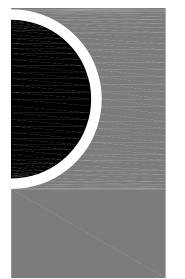
18-122A 1600 W. Highland Rd. Highland, MI 48357 Project Number: Project Location:

Issue Date: October 28, 2020

A0-00 COVER SHEET (NOT ISSUED)

A. Add Sheet "A6-05 WALL SECTIONS" to the drawing index.





PARTNERS in Architecture, PLC 65 MARKET STREET

Statement of Intellectual Property

MOUNT CLEMENS, MI 48043

P 586.469.3600

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent

of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

ENVIRONMENTAL
ENGINEERS, INC.

18620 WEST TEN MILE ROAD
SOUTHFIELD, MICHIGAN 48075
PHONE: 248/424-9510
FAX: 248/424-2954
E-MAIL: pjlewsley@envengrs.com

I/EV/ DL AN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

REVISED 03/20/20 - BID SET

BIDDING - CONSTRUCTION 03/27/2020

REVISED 04/20/20 - ADDENDUM No. 1 1 CONSTRUCTION SET 05/04/2020

APPROVED BY

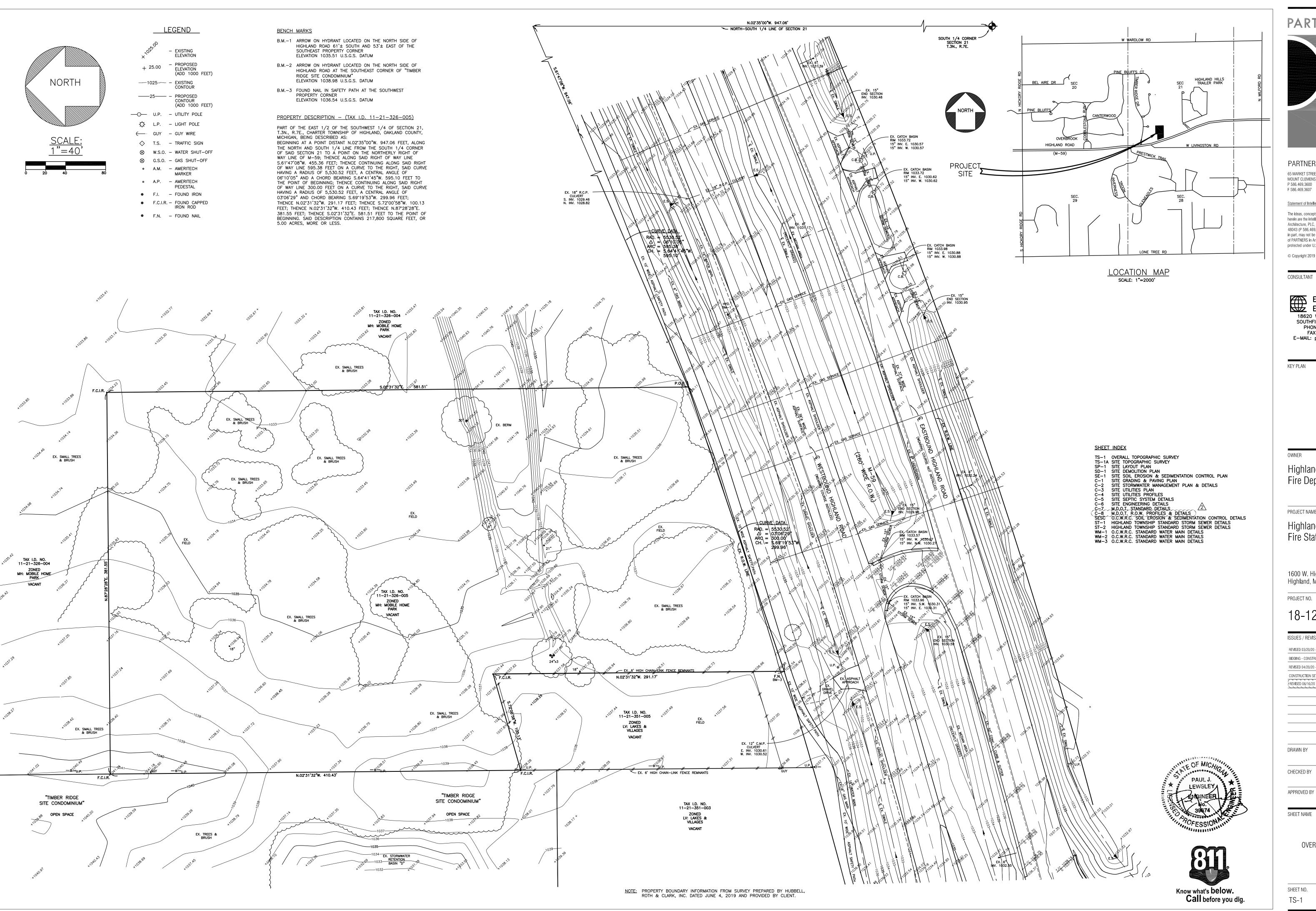
CHECKED BY

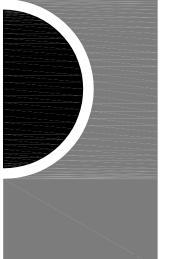
DRAWN BY

SHEET NAME

OVERALL TOPOGRAPHIC SURVEY

SHEET NO.





PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

ENVIRONMENTAL ENGINEERS, INC. 18620 WEST TEN MILE ROAD SOUTHFIELD, MICHIGAN 48075 PHONE: 248/424-9510 FAX: 248/424-2954 E-MAIL: pjlewsley@envengrs.com

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

REVISED 03/20/20 - BID SET BIDDING - CONSTRUCTION 03/27/2020

REVISED 04/20/20 - ADDENDUM No. 1

CONSTRUCTION SET 05/04/2020 REVISED 06/16/20 - CCD #2

DRAWN BY

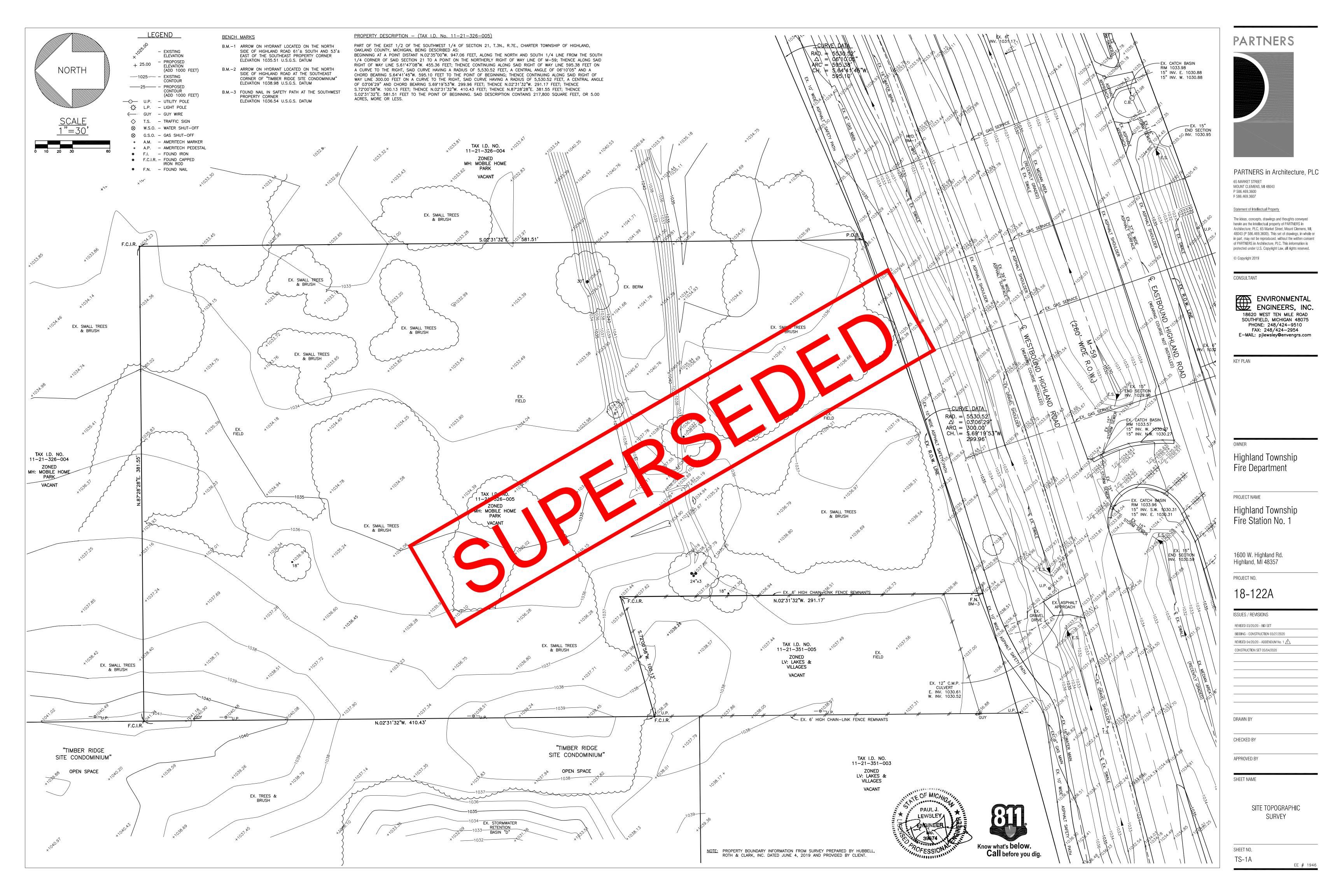
CHECKED BY

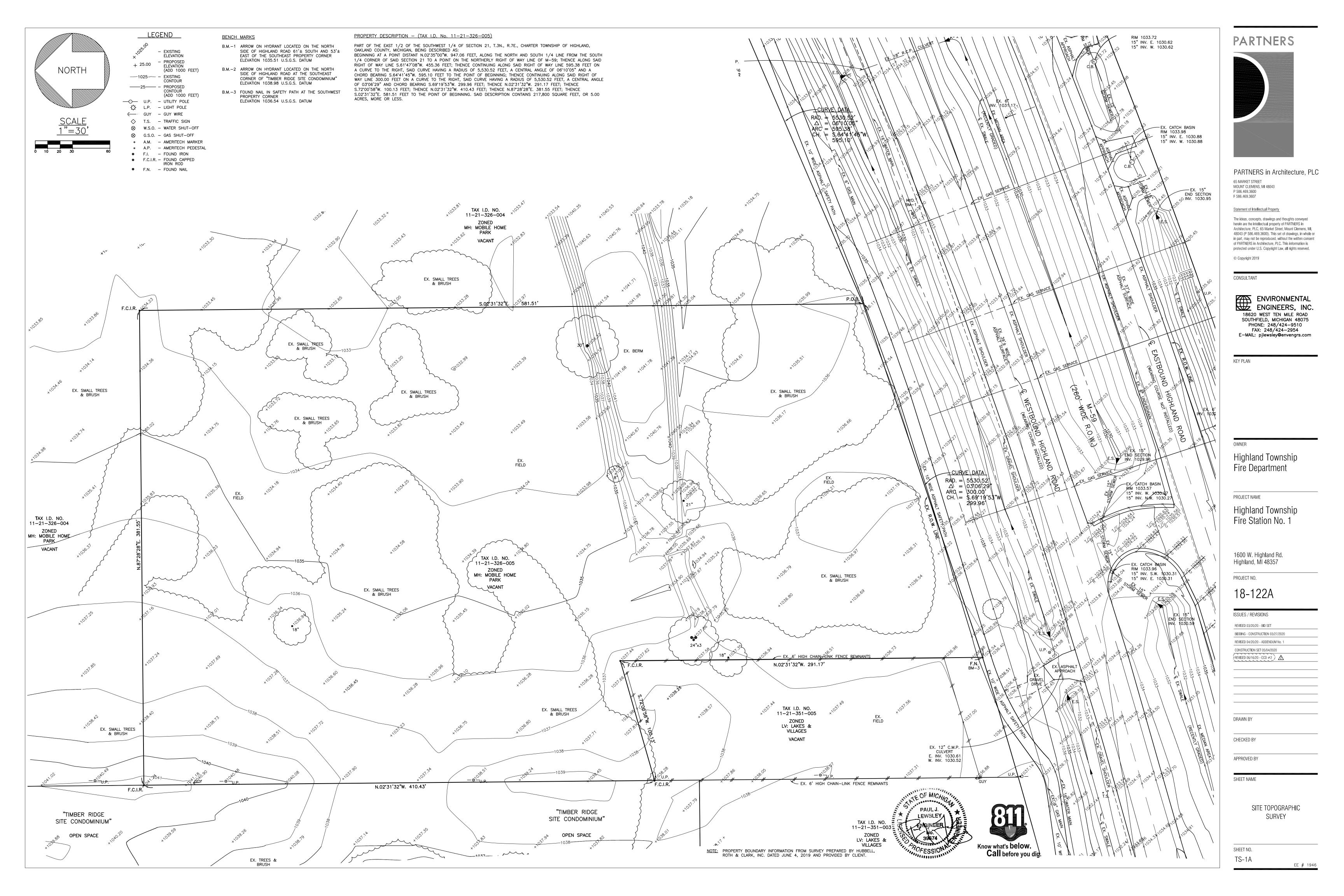
APPROVED BY

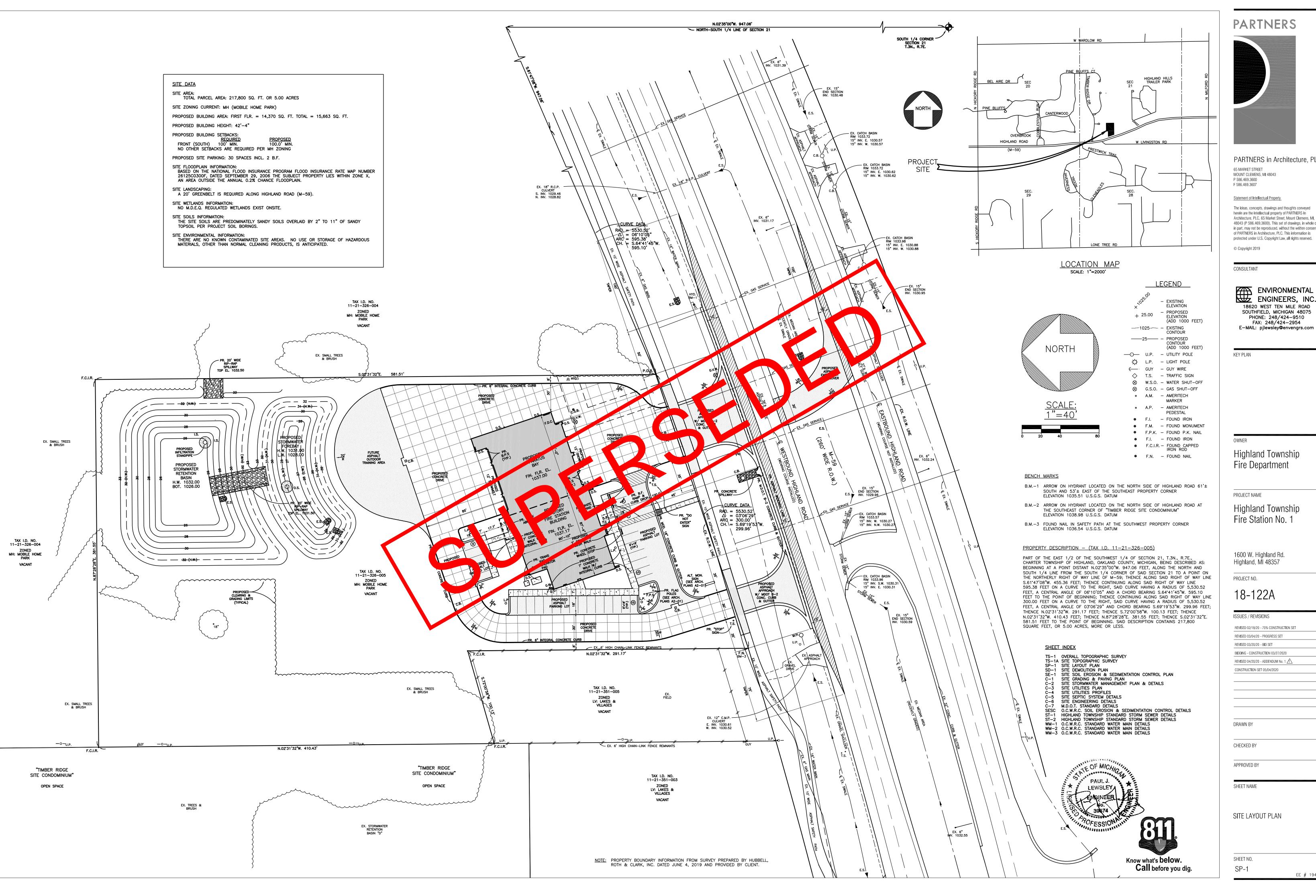
SHEET NAME

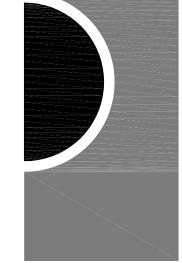
OVERALL TOPOGRAPHIC SURVEY

SHEET NO.







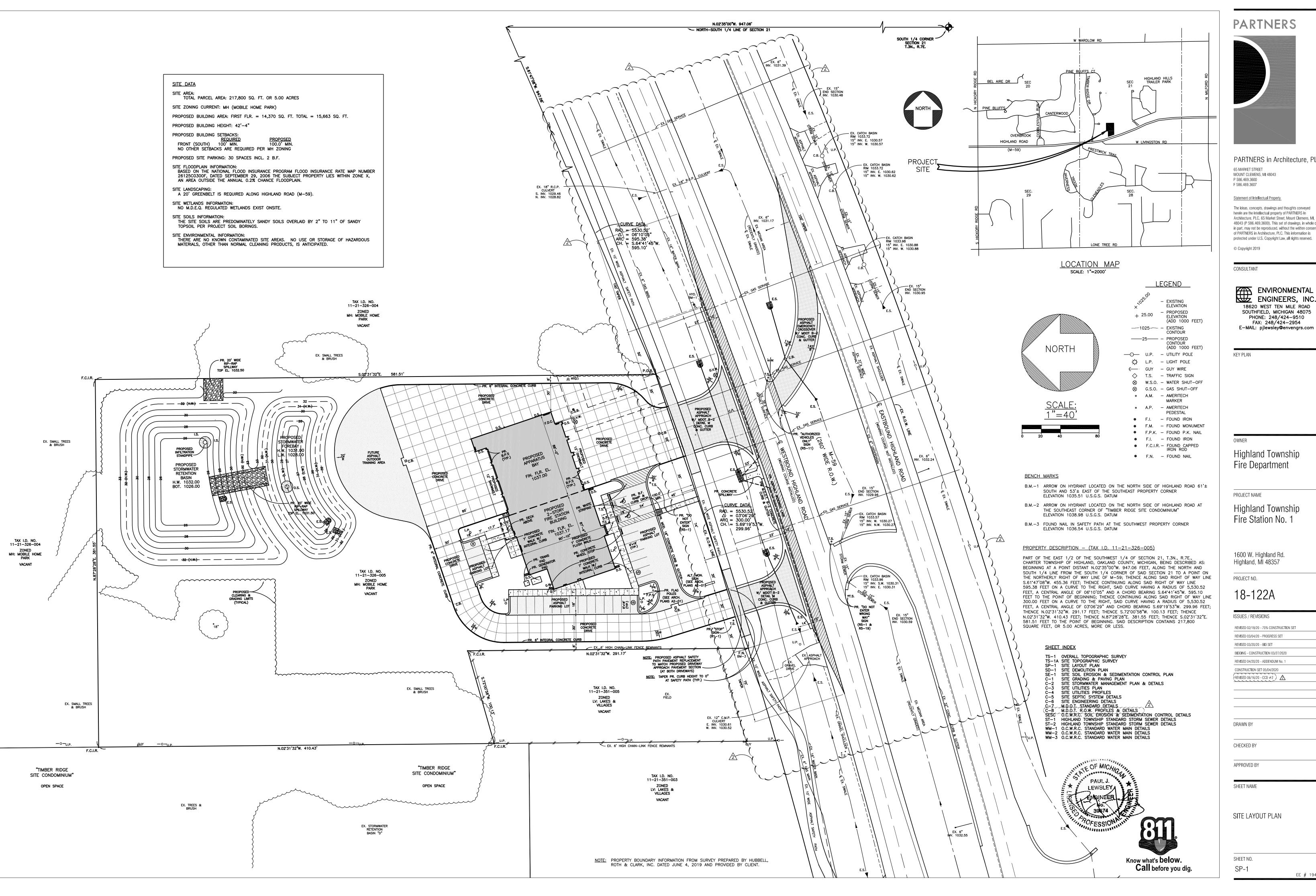


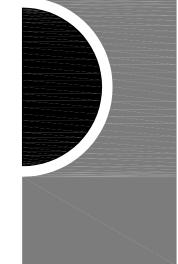
The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

ENVIRONMENTAL ENGINEERS, INC. 18620 WEST TEN MILE ROAD SOUTHFIELD, MICHIGAN 48075 PHONE: 248/424-9510 FAX: 248/424-2954

Highland Township

Highland Township



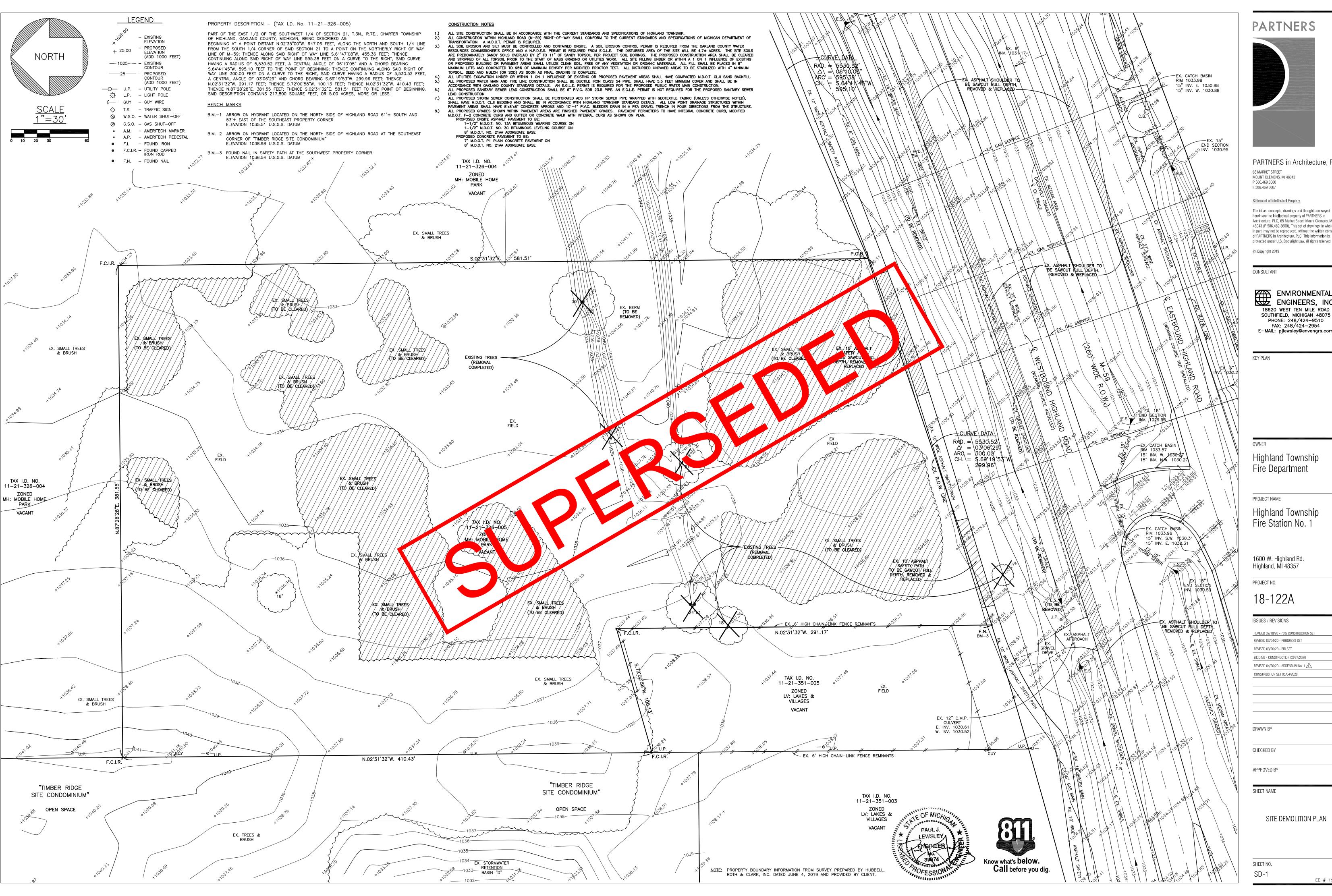


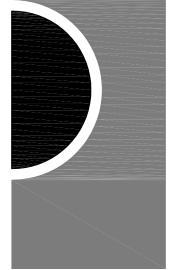
The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

ENVIRONMENTAL ENGINEERS, INC. 18620 WEST TEN MILE ROAD SOUTHFIELD, MICHIGAN 48075 PHONE: 248/424-9510 FAX: 248/424-2954

Highland Township

Highland Township



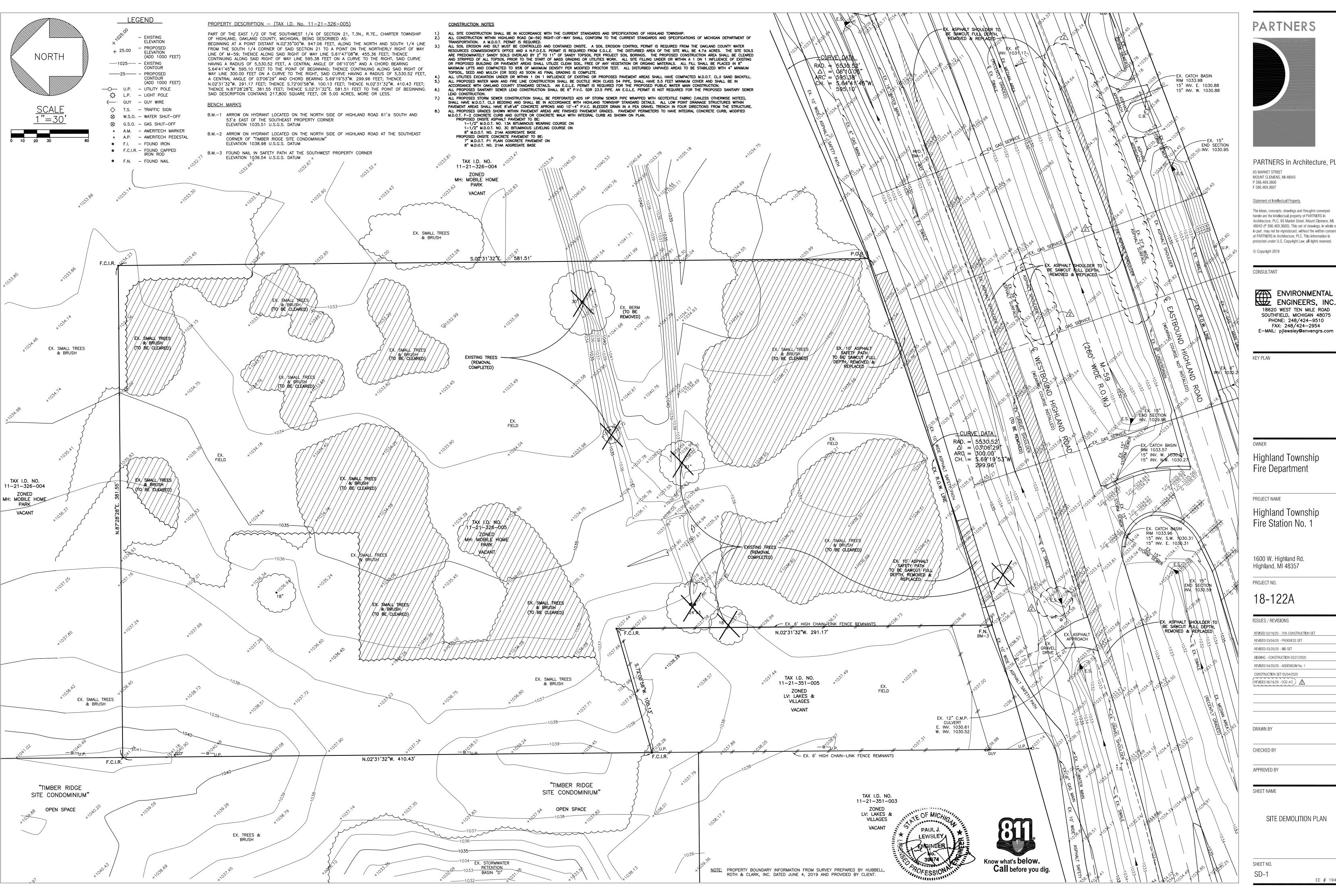


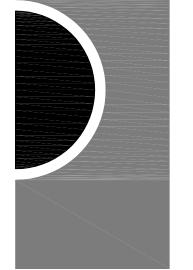
The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

ENVIRONMENTAL ENGINEERS, INC. 18620 WEST TEN MILE ROAD

SOUTHFIELD, MICHIGAN 48075 PHONE: 248/424-9510 FAX: 248/424-2954 E-MAIL: pjlewsley@envengrs.com

Highland Township

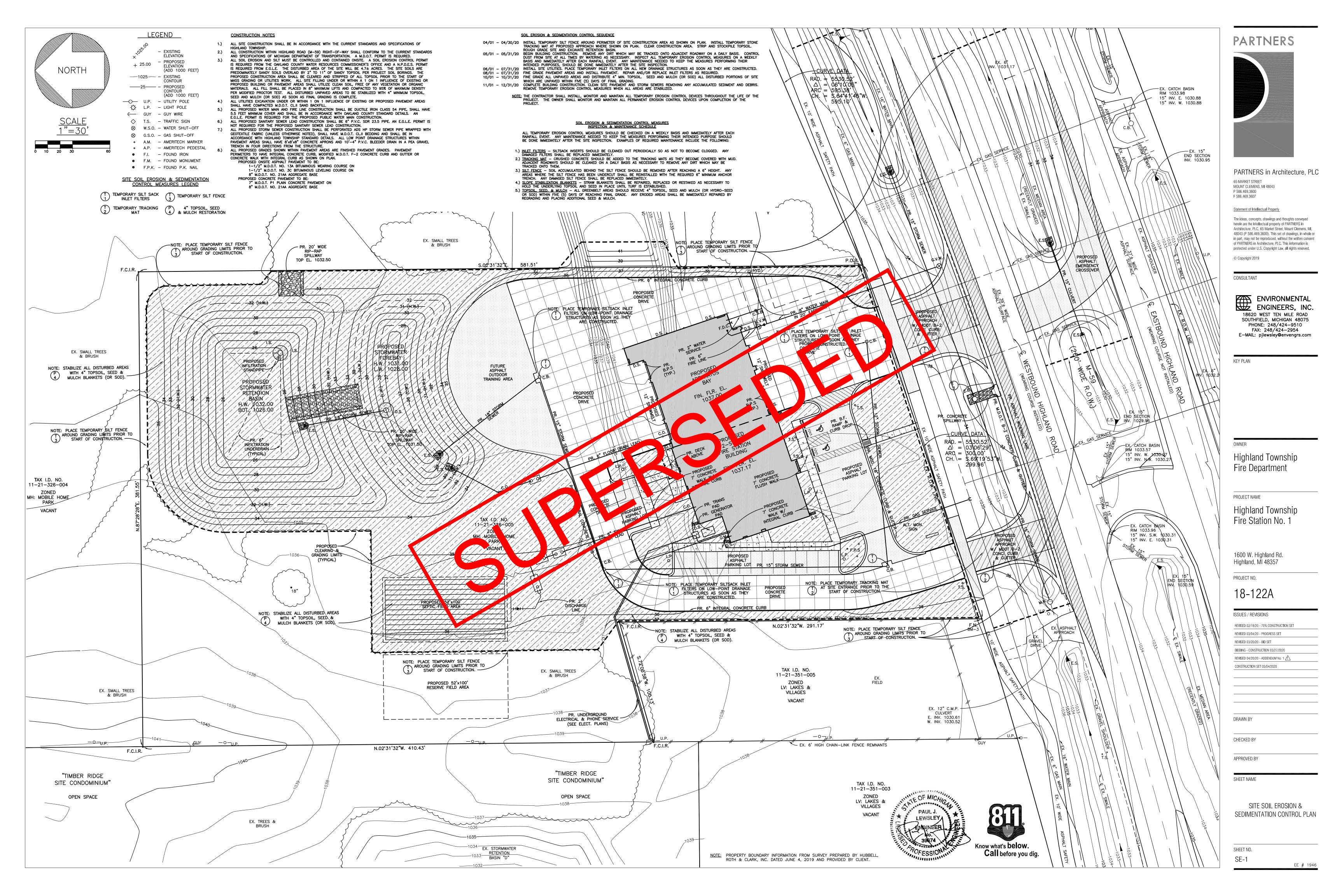


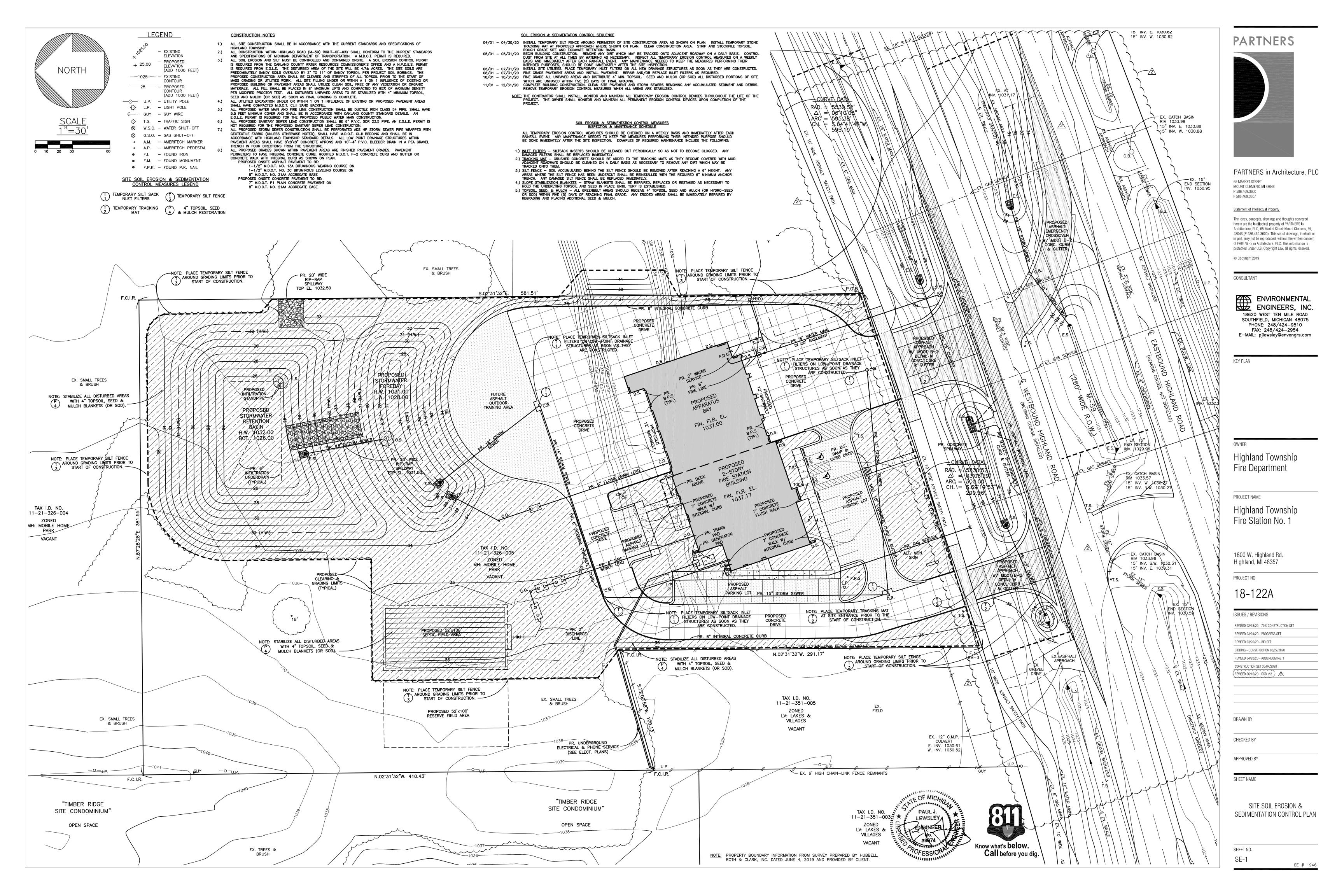


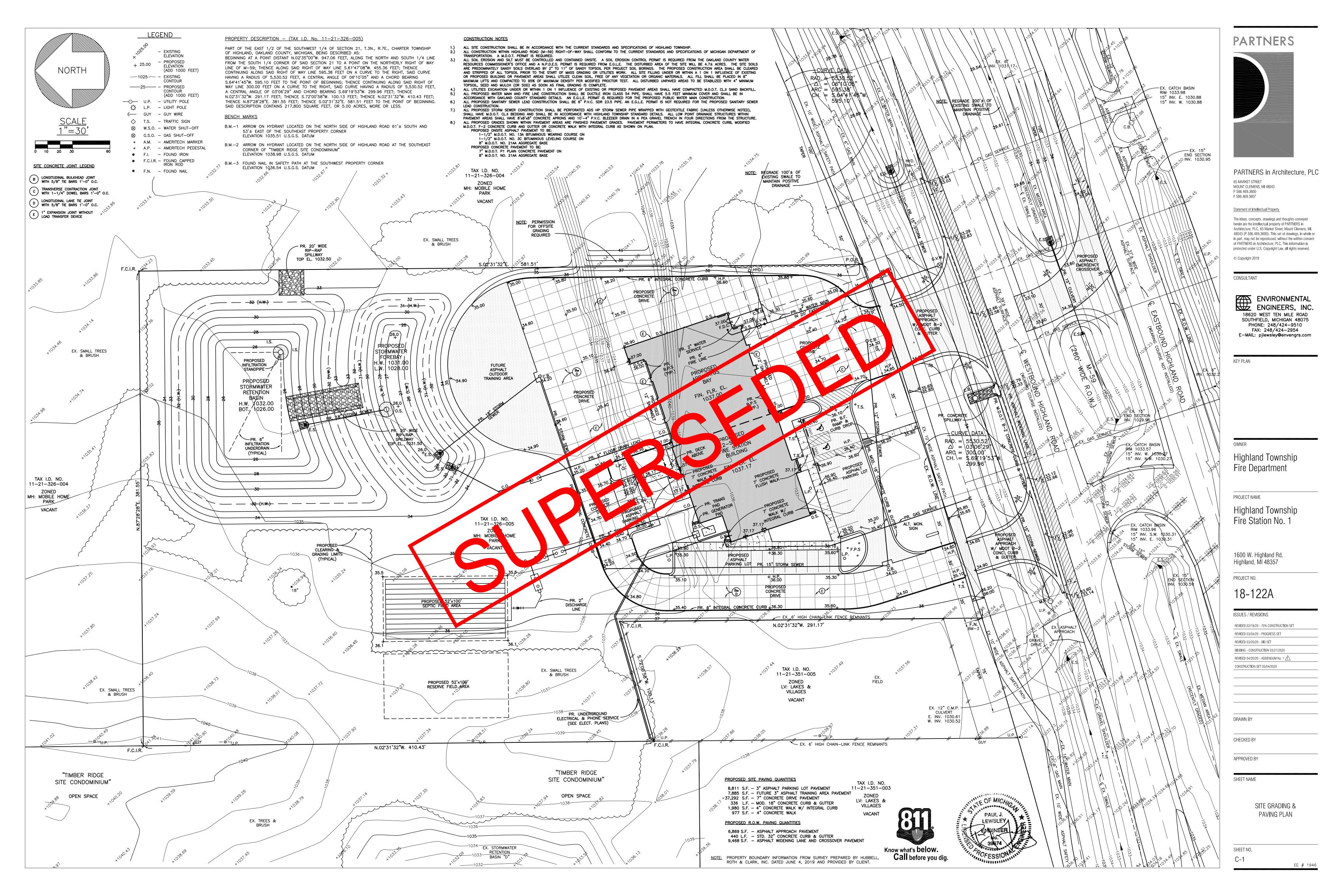
The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent

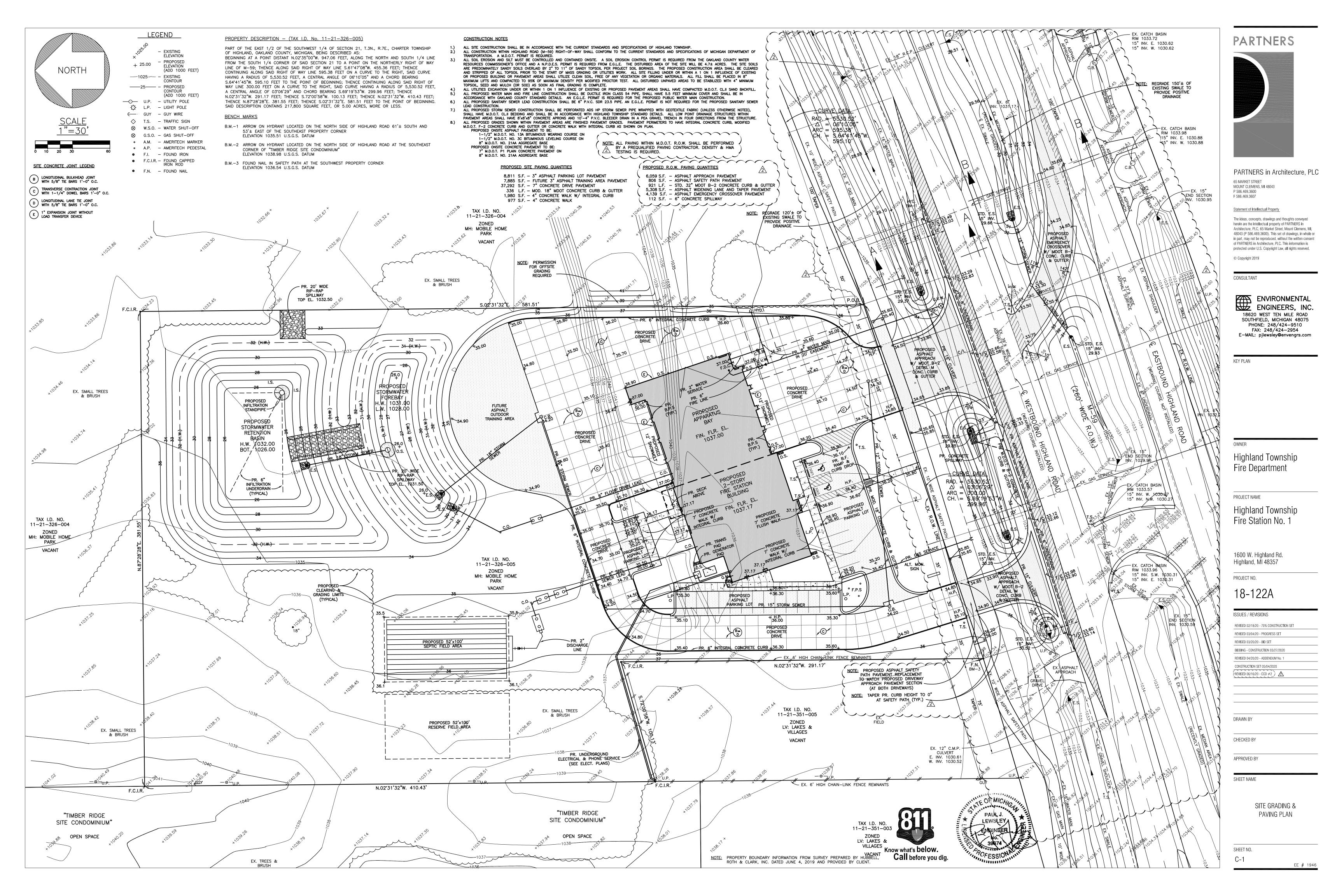
ENVIRONMENTAL ENGINEERS, INC. 18620 WEST TEN MILE ROAD SOUTHFIELD, MICHIGAN 48075 PHONE: 248/424-9510 FAX: 248/424-2954

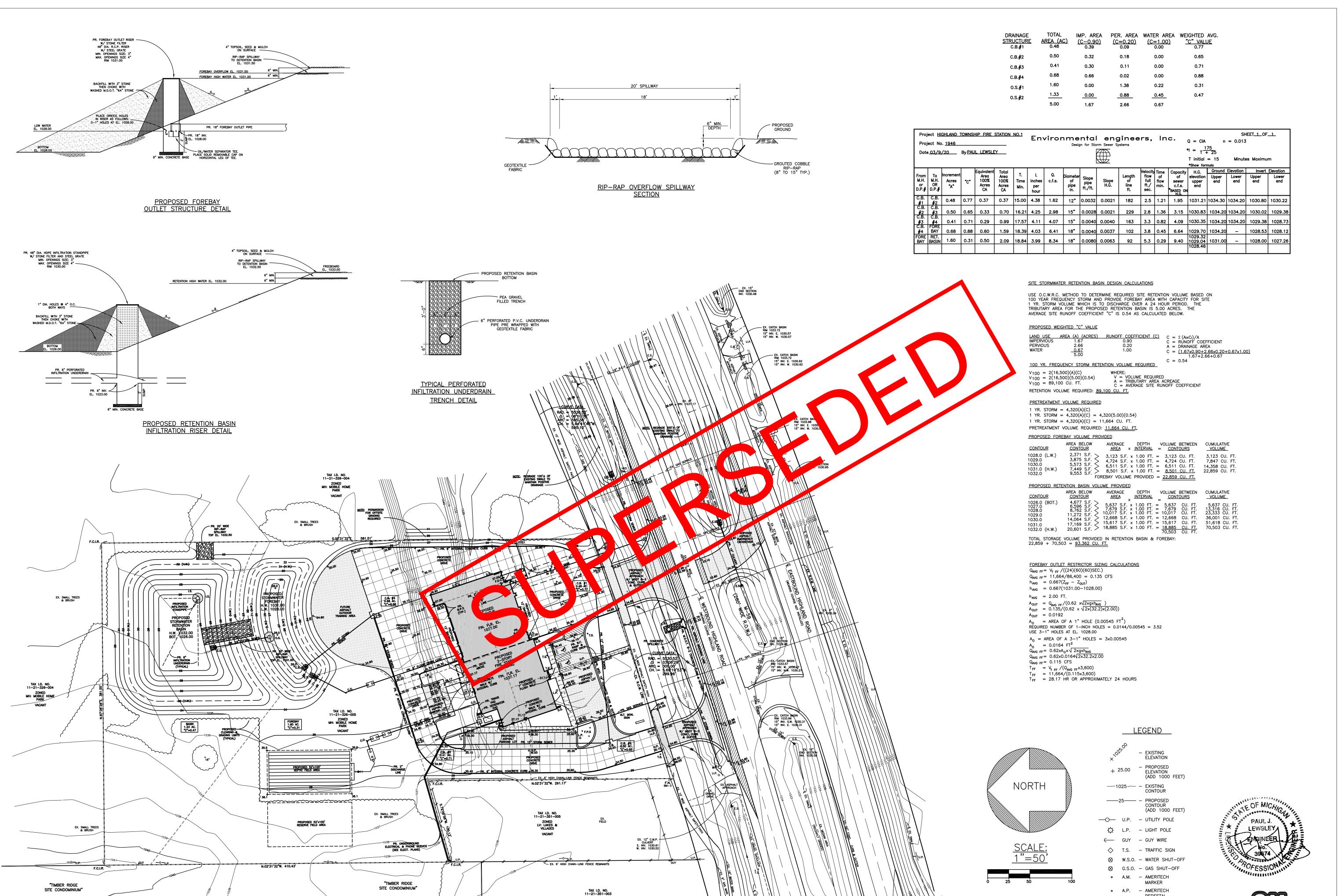
Highland Township











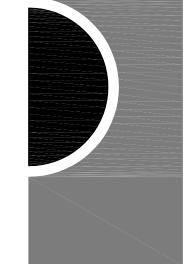
ZONED LV: LAKES &: VILLAGES

NOTE: PROPERTY BOUNDARY INFORMATION FROM SURVEY PREPARED BY HUBBELL,

ROTH & CLARK, INC. DATED JUNE 4, 2019 AND PROVIDED BY CLIENT.

OPEN SPACE

PARTNERS



PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

ENVIRONMENTAL
ENGINEERS, INC.

18620 WEST TEN MILE ROAD
SOUTHFIELD, MICHIGAN 48075
PHONE: 248/424-9510
FAX: 248/424-2954

E-MAIL: pjlewsley@envengrs.com

KEY PLAN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

REVISED 02/20/20 - 70% CONSTRUCTION SET

REVISED 03/04/20 - PROGRESS SET

REVISED 03/20/20 - BID SET

BIDDING - CONSTRUCTION 03/27/2020

REVISED 04/20/20 - ADDENDUM No. 1

CONSTRUCTION SET 05/04/2020

DRAWN BY

CHECKED BY

APPROVED BY

SHEET NAME

SITE STORMWATER MANAGEMENT PLAN & DETAILS

SHEET NO.

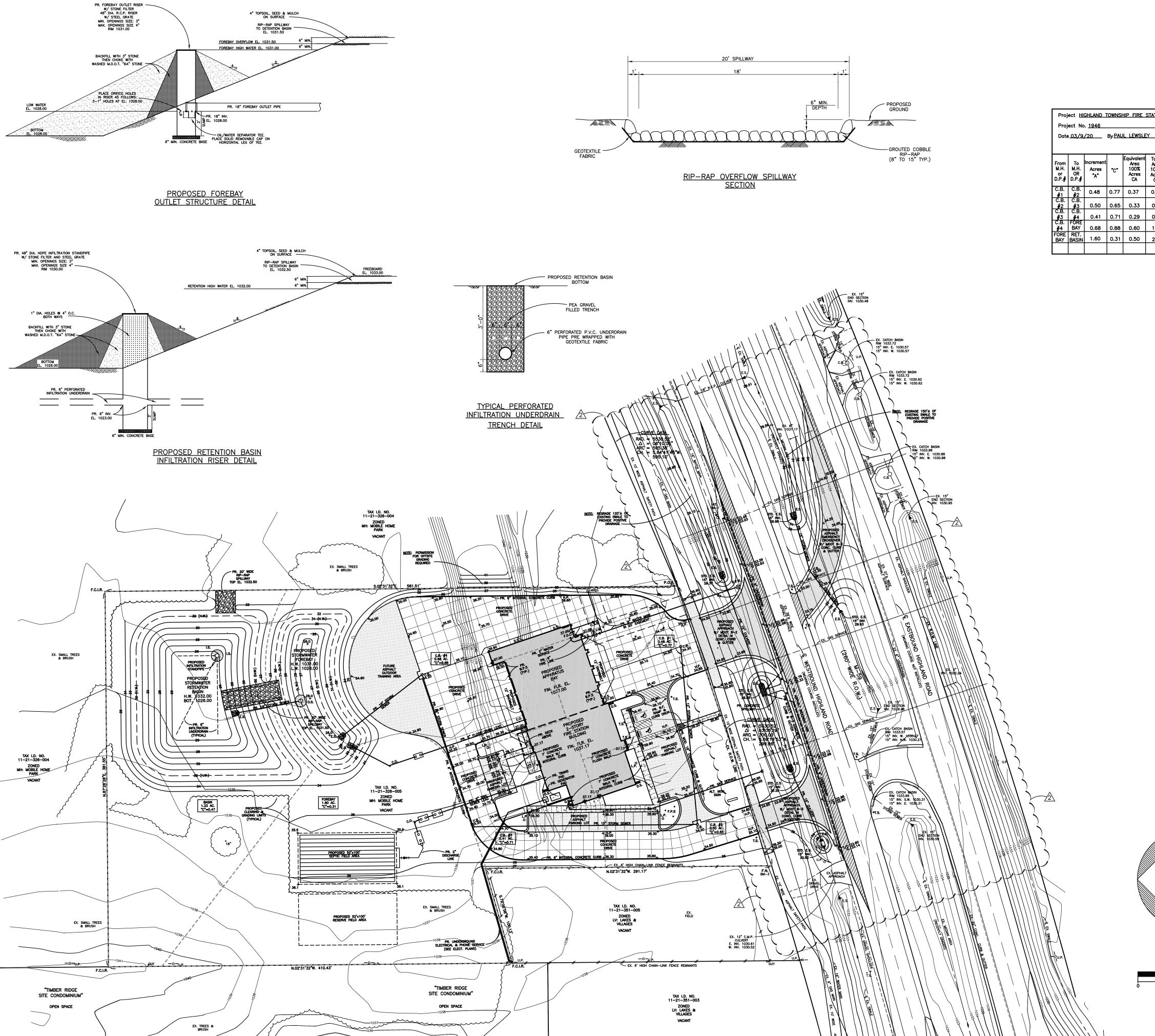
Know what's below.

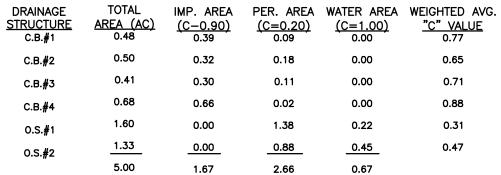
Call before you dig.

PEDESTAL

● F.I. – FOUND IRON

F.M. – FOUND MONUMENTF.P.K. – FOUND P.K. NAIL





| Proj | Project HIGHLAND TOWNSHIP FIRE STATION NO.1 Project No. 1946 Date 03/9/20 By PAUL LEWSLEY Environmental engineers, Inc. Design for Storm Sewer Systems * = 175 | | | | | | | | | | | | | | | | | | | |
|-----------------------------|--|---------------------------|------|---|--------------------------------------|--------------------|-----------------------------|--------------|-------------------------------|--------------------------|---------------|-----------------------------|--|----------------------------|--|-------------------------------|------------------------|---------------------------|------------------------|---------------------------|
| From M.H. or D.P.# | To M.H. OR D.P.# | Increment Acres "A" | "C" | Equivalent Area 100% Acres CA | Total Area 100% Acres CA | T. Time Min. | l. inches per hour | Q. c.f.s. | Diameter of pipe in. | Slope pipe ft./ft. | Slope H.G. | Length of line ft. | Velocity flow full ft./ sec. | Time of flow min. | Capacity of sewer c.f.s. *BASED ON H.G. | elevation upper end | Ground Upper end | Elevation Lower end | Invert Upper end | Elevation Lower end |
| C.B. #1 | C.B. #2 | 0.48 | 0.77 | 0.37 | 0.37 | 15.00 | 4.38 | 1.62 | 12" | 0.0032 | 0.0021 | 182 | 2.5 | 1.21 | 1.95 | | 1034.30 | 1034.20 | 1030.80 | 1030.22 |
| C.B. #2 C.B. #3 | C.B. #3 C.B. #4 | 0.50 0.41 | 0.65 | 0.33 | 0.70 0.99 | 16.21 17.57 | | 2.98 4.07 | 15" 15" | 0.0028 | | 229 163 | 2.8 | 1.36 0.82 | 3.15 4.09 | | | 1034.20 1034.20 | | |
| C.B. #4 | FÖRE BAY | 0.68 | 0.88 | 0.60 | 1.59 | 18.39 | | 6.41 | 18" | 0.0040 | | 102 | 3.8 | 0.45 | | 1029.70 | | | 1028.53 | |
| FORE | RET. BASIN | 1.60 | 0.31 | 0.50 | 2.09 | 18.84 | 3.99 | 8.34 | 18" | 0.0080 | 0.0063 | 92 | 5.3 | 0.29 | 9.40 | 1029.32 1029.04 1028.46 | 1031.00 | _ | 1028.00 | 1027.26 |

SITE STORMWATER RETENTION BASIN DESIGN CALCULATIONS

USE O.C.W.R.C. METHOD TO DETERMINE REQUIRED SITE RETENTION VOLUME BASED ON 100 YEAR FREQUENCY STORM AND PROVIDE FOREBAY AREA WITH CAPACITY FOR SITE 1 YR. STORM VOLUME WHICH IS TO DISCHARGE OVER A 24 HOUR PERIOD. THE TRIBUTARY AREA FOR THE PROPOSED RETENTION BASIN IS 5.00 ACRES. THE AVERAGE SITE RUNOFF COEFFICIENT "C" IS 0.54 AS CALCULATED BELOW.

| PROPOSED W | <u>EIGHTED "C" VALUE</u> | | | |
|---|--------------------------------------|--|------------|---|
| LAND USE IMPERVIOUS PERVIOUS WATER | AREA (A) (ACRES) 1.67 2.66 0.67 5.00 | RUNOFF COEFFICIENT (C) 0.90 0.20 1.00 | C = A = | Σ (AιxCi)/A RUNOFF COEFFICIENT DRAINAGE AREA (1.67x0.90+2.66x0.20+0.67x1.00) 1.67+2.66+0.67 |

C = 0.54

100 YR. FREQUENCY STORM RETENTION VOLUME REQUIRED $V_{100} = 2(16,500)(A)(C)$ V = VOLUME REQUIRED
A = TRIBUTARY AREA ACREAGE
C = AVERAGE SITE RUNOFF COEFFICIENT $V_{100} = 2(16,500)(5.00)(0.54)$

 $V_{100} = 89,100$ CU. FT. RETENTION VOLUME REQUIRED: 89,100 CU. FT.

PRETREATMENT VOLUME REQUIRED 1 YR. STORM = 4,320(A)(C)

1 YR. STORM = 4,320(A)(C) = 4,320(5.00)(0.54)1 YR. STORM = 4,320(A)(C) = 11,664 CU. FT. PRETREATMENT VOLUME REQUIRED: 11.664 CU. FT. PROPOSED FOREBAY VOLUME PROVIDED

AREA BELOW AVERAGE DEPTH VOLUME BETWEEN CUMULATIVE CONTOUR AREA × INTERVAL = CONTOURS VOLUME CONTOUR 2,371 S.F. 3,123 S.F. × 1.00 FT. = 3,123 CU. FT. 3,123 CU. FT. 5,573 S.F. 4,724 S.F. × 1.00 FT. = 4,724 CU. FT. 7,449 S.F. 8,501 S.F. × 1.00 FT. = 8,501 CU. FT. 2,859 CU. FT. 7,449 S.F. 8,501 S.F. × 1.00 FT. = 8,501 CU. FT. 2,859 CU. FT. 1028.0 (L.W.) 1029.0 1030.0 1031.0 (H.W.)

| 1031.0 (H.W.) 1032.0 | 9,553 S.F. > FC | 8,501 S.F. x 1.00 FT. = 8.501 CU. FT. 22,859 CU. FT. REBAY VOLUME PROVIDED = 22.859 CU. FT. |
|--|--|--|
| PROPOSED RETE | ENTION BASIN VOL | UME_PROVIDED |
| CONTOUR | AREA BELOW CONTOUR | AVERAGE DEPTH VOLUME BETWEEN CUMULATIVE AREA INTERVAL CONTOURS VOLUME VOLUME |
| 1026.0 (BOT.) 1027.0 1028.0 1029.0 1030.0 1031.0 1032.0 (H.W.) | 4,677 S.F. 6,596 S.F. 8,762 S.F. 11,272 S.F. 14,064 S.F. 17,169 S.F. 20,601 S.F. | 5,637 S.F. x 1.00 FT. = 5,637 CU. FT. 7,679 S.F. x 1.00 FT. = 7,679 CU. FT. 13,316 CU. FT. 10,017 S.F. x 1.00 FT. = 10,017 CU. FT. 23,333 CU. FT. 12,668 S.F. x 1.00 FT. = 12,668 CU. FT. 36,001 CU. FT. 15,617 S.F. x 1.00 FT. = 15,617 CU. FT. 51,618 CU. FT. 18,885 S.F. x 1.00 FT. = 18,885 CU. FT. 70,503 CU. FT. |

TOTAL STORAGE VOLUME PROVIDED IN RETENTION BASIN & FOREBAY: 22,859 + 70,503 = <u>93,362 CU. FT.</u>

FOREBAY OUTLET RESTRICTOR SIZING CALCULATIONS

 $Q_{AVG\ FF} = V_{T\ FF} / ((24)(60)(60)SEC.)$

 $Q_{AVG\ FF} = 11,664/86,400 = 0.135 CFS$ $h_{AVG} = 0.667(Z_{FF} - Z_{OUT})$

 $h_{AVG} = 0.667(1031.00 - 1028.00)$

 $h_{AVG} = 2.00$ FT.

 $A_{OUT} = Q_{AVG FF} / (0.62 \times \sqrt{2 \times g \times h_{AVG}})$ $A_{OUT} = 0.135 / (0.62 \times \sqrt{2 \times (32.2) \times (2.00)})$ $A_{OUT} = 0.0192$

 $A_0 = AREA OF A 1" HOLE (0.00545 FT^2)$ REQUIRED NUMBER OF 1-INCH HOLES = 0.0144/0.00545 = 3.52 USE 3-1" HOLES AT EL. 1028.00

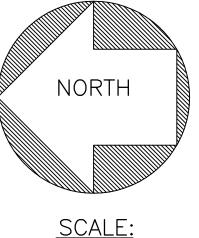
 $A_0 = AREA OF A 3-1" HOLES = 3x0.00545$

 $A_0 = 0.0164 \text{ FT}^2$ $Q_{AVG} \text{ FF} = 0.62 \times A_0 \times \sqrt{2 \times gxh_{AVG}}$ $Q_{AVG} \text{ FF} = 0.62 \times 0.0164 \sqrt{2 \times 32.2 \times 2.00}$

 $Q_{AVG\ FF} = 0.115\ CFS$

 $T_{FF} = V_{T FF} / (Q_{AVG FF} \times 3,600)$ $T_{FF} = 11,664 / (0.115 \times 3,600)$ $T_{FF} = 28.17 \text{ HR OR APPROXIMATELY 24 HOURS}$

___LEGEND



NOTE: PROPERTY BOUNDARY INFORMATION FROM SURVEY PREPARED BY HUBBELL,

ROTH & CLARK, INC. DATED JUNE 4, 2019 AND PROVIDED BY CLIENT.

ELEVATION ---1025--------25---- - PROPOSED (ADD 1000 FEET) —⊙— U.P. – UTILITY POLE ∴ L.P. – LIGHT POLE ← GUY - GUY WIRE

- PROPOSED

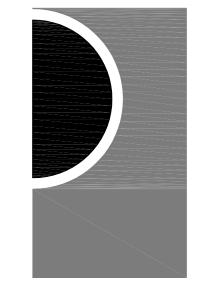
W.S.O. − WATER SHUT−OFF

⊗ G.S.O. – GAS SHUT-OFF ♦ A.M. – AMERITECH ■ A.P. – AMERITECH

PEDESTAL ● F.I. – FOUND IRON ● F.M. – FOUND MONUMENT • F.P.K. – FOUND P.K. NAIL

Know what's below. Call before you dig.

PARTNERS



PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

ENVIRONMENTAL ENGINEERS, INC. 18620 WEST TEN MILE ROAD SOUTHFIELD, MICHIGAN 48075 PHONE: 248/424-9510 FAX: 248/424-2954

E-MAIL: pjlewsley@envengrs.com

KEY PLAN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd.

Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

REVISED 02/20/20 - 70% CONSTRUCTION SET REVISED 03/04/20 - PROGRESS SET

REVISED 03/20/20 - BID SET

BIDDING - CONSTRUCTION 03/27/2020 REVISED 04/20/20 - ADDENDUM No. 1

CONSTRUCTION SET 05/04/2020

REVISED 06/16/20 - CCD #2) 🖄

DRAWN BY

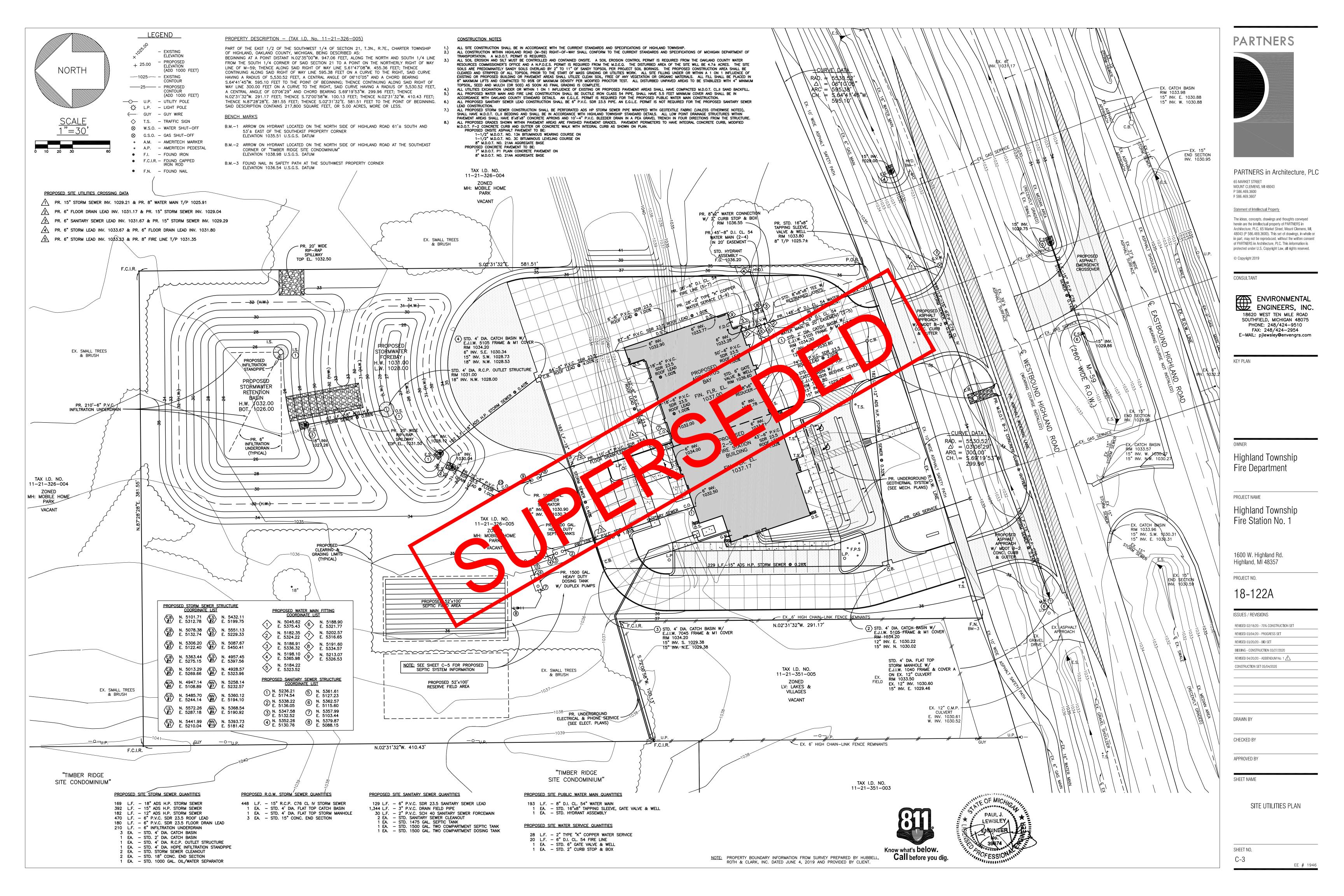
CHECKED BY

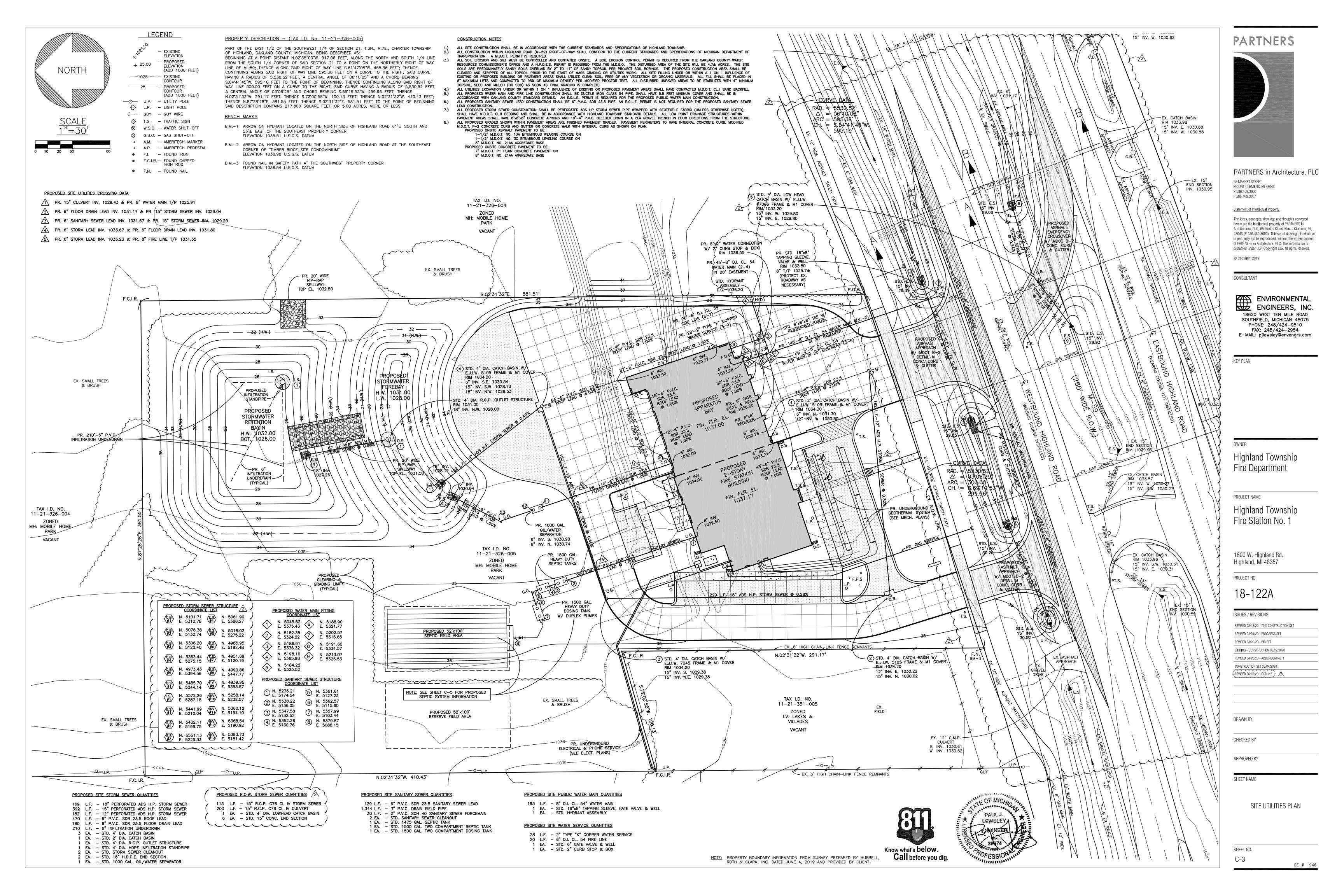
APPROVED BY

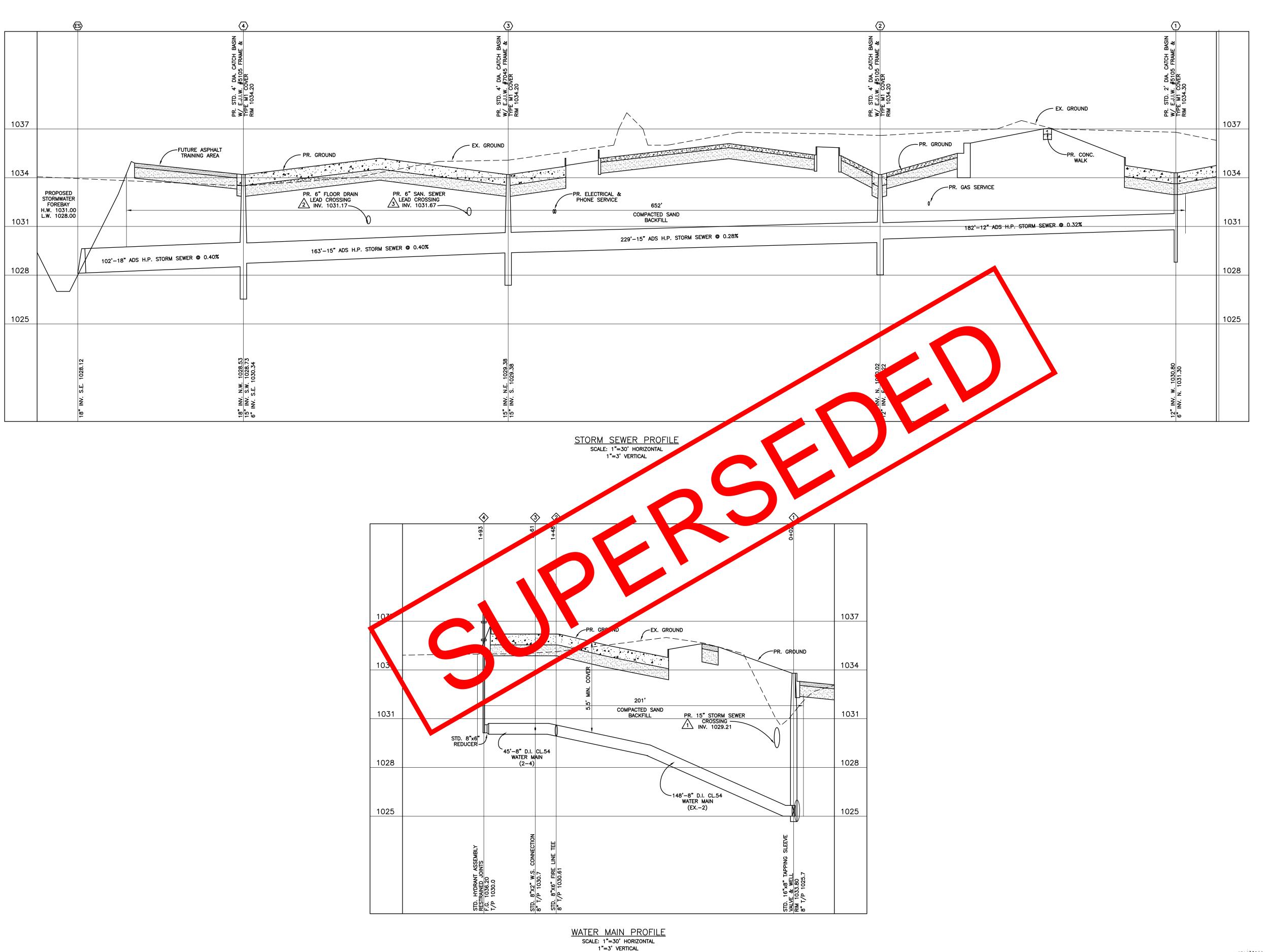
SHEET NAME

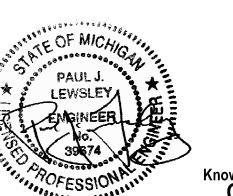
SITE STORMWATER MANAGEMENT PLAN & DETAILS

SHEET NO. C-2

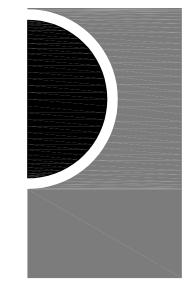












PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

P 586.469.3600

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

ENVIRONMENTAL ENGINEERS, INC. 18620 WEST TEN MILE ROAD SOUTHFIELD, MICHIGAN 48075 PHONE: 248/424-9510 FAX: 248/424-2954 E-MAIL: pjlewsley@envengrs.com

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, Ml 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

REVISED 02/18/20 - 70% CONSTRUCTION SET REVISED 03/04/20 - PROGRESS SET

REVISED 03/20/20 - BID SET BIDDING - CONSTRUCTION 03/27/2020

REVISED 04/20/20 - ADDENDUM No. 1 🔨 CONSTRUCTION SET 05/04/2020

DRAWN BY

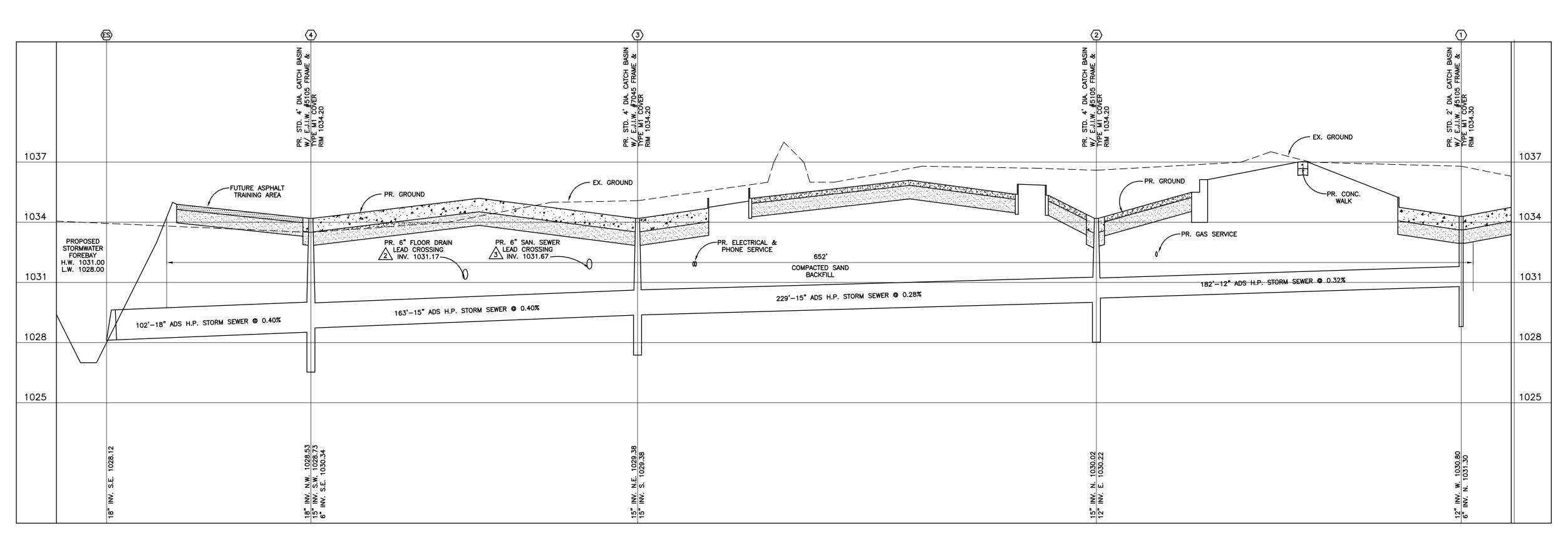
CHECKED BY

APPROVED BY

SHEET NAME

SITE UTILITIES PROFILES

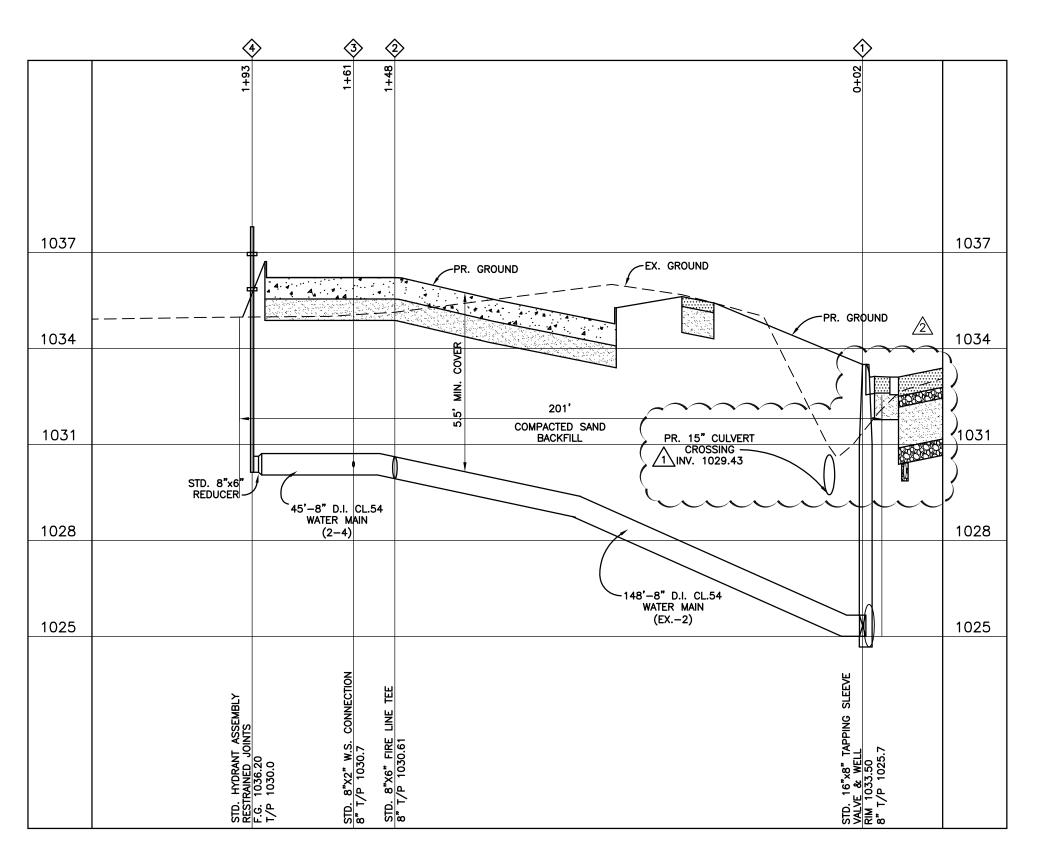
SHEET NO. C-4



STORM SEWER PROFILE

SCALE: 1"=30' HORIZONTAL

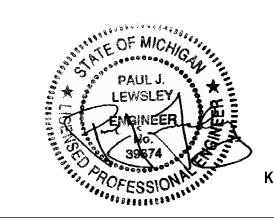
1"=3' VERTICAL



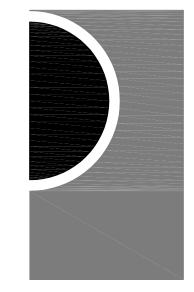
WATER MAIN PROFILE

SCALE: 1"=30' HORIZONTAL

1"=3' VERTICAL







PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

ENVIRONMENTAL
ENGINEERS, INC.

18620 WEST TEN MILE ROAD
SOUTHFIELD, MICHIGAN 48075
PHONE: 248/424-9510
FAX: 248/424-2954
E-MAIL: pjlewsley@envengrs.com

KEΛ Ы ΨΙ

0/

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

REVISED 02/18/20 - 70% CONSTRUCTION SET

REVISED 03/04/20 - PROGRESS SET

REVISED 03/20/20 - BID SET

BIDDING - CONSTRUCTION 03/27/2020

REVISED 04/20/20 - ADDENDUM No. 1 CONSTRUCTION SET 05/04/2020

REVISED 06/16/20 - CCD #2

DRAWN BY

CHECKED BY

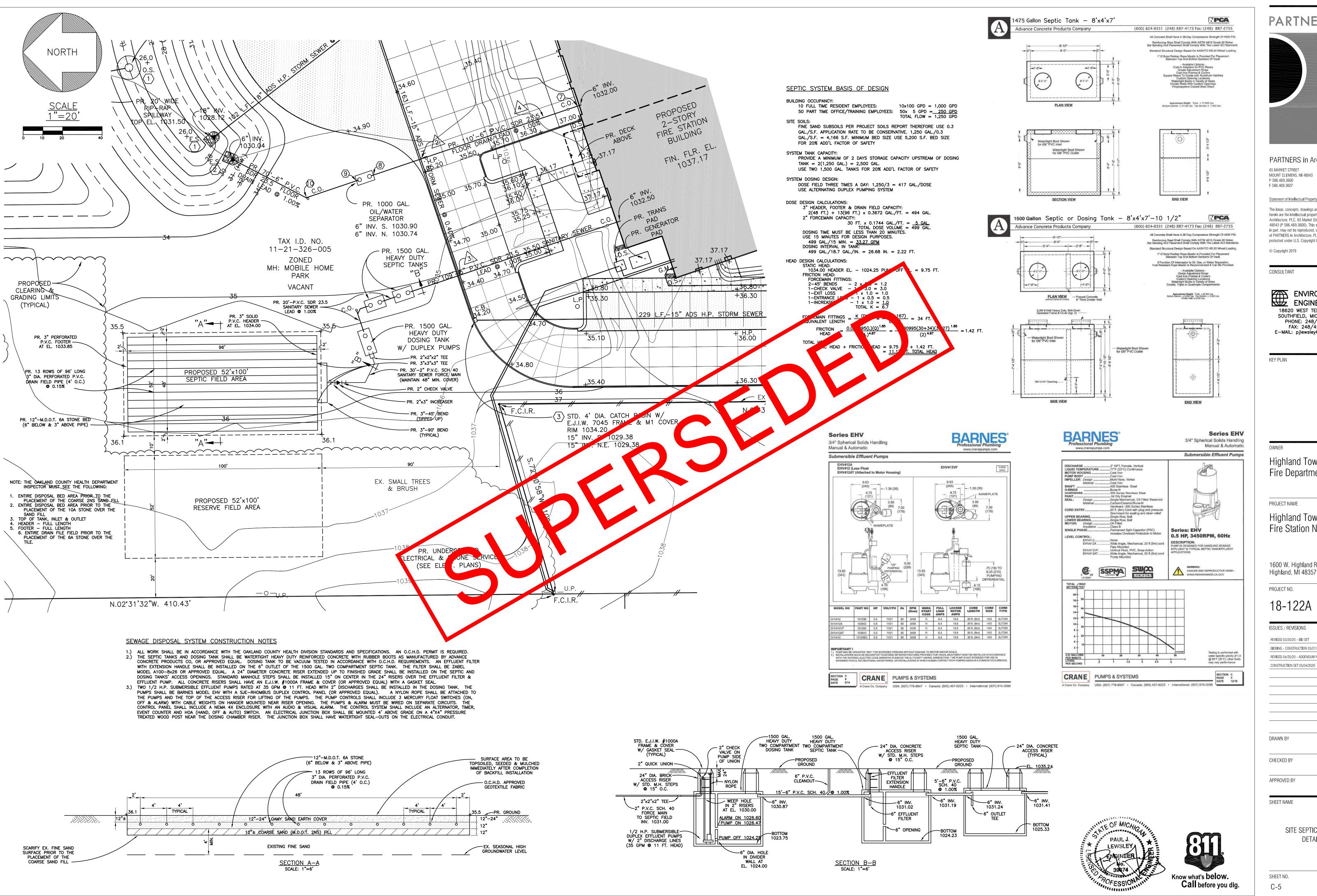
APPROVED BY

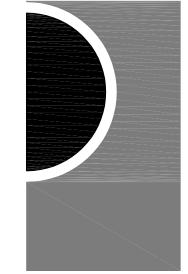
SHEET NAME

SITE UTILITIES PROFILES

SHEET NO.

C-4





PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

CONSULTANT

ENVIRONMENTAL ENGINEERS, INC. 18620 WEST TEN MILE ROAD SOUTHFIELD, MICHIGAN 48075 PHONE: 248/424-9510 FAX: 248/424-2954 E-MAIL: pjlewsley@envengrs.com

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No.

1600 W. Highland Rd.

18-122A

ISSUES / REVISIONS REVISED 03/20/20 - BID SET

BIDDING - CONSTRUCTION 03/27/2020 REVISED 04/20/20 - ADDENDUM No. 1 CONSTRUCTION SET 05/04/2020

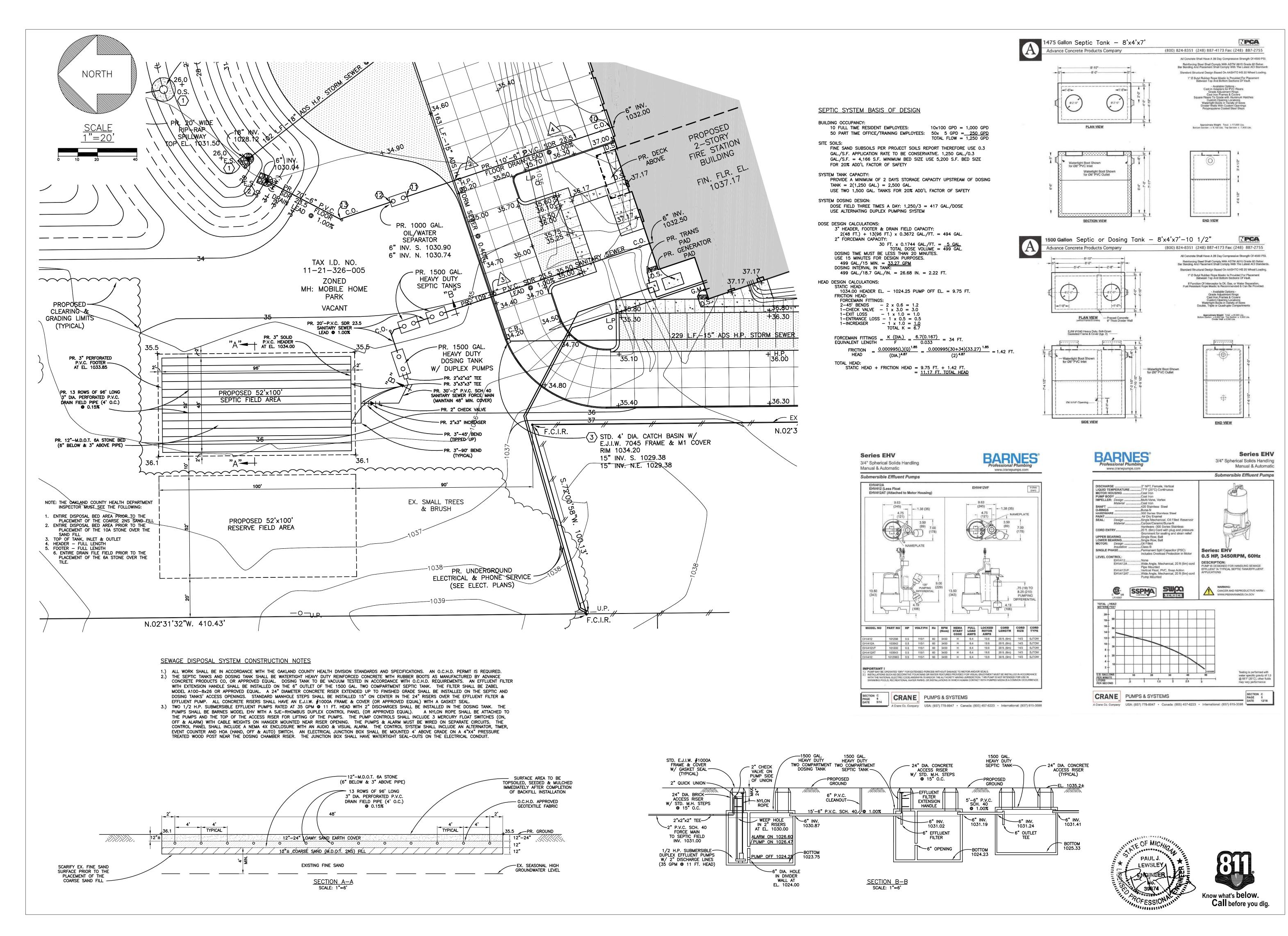
DRAWN BY

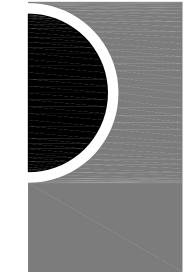
CHECKED BY

APPROVED BY

SITE SEPTIC SYSTEM DETAILS

SHEET NO.





PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

P 586.469.3600

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

CONSULTANT

© Copyright 2019

NSULTANT

ENVIRONMENTAL
ENGINEERS, INC.

18620 WEST TEN MILE ROAD
SOUTHFIELD, MICHIGAN 48075
PHONE: 248/424-9510
FAX: 248/424-2954
E-MAIL: pjlewsley@envengrs.com

EY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd.

PROJECT NO.

Highland, MI 48357

18-122A

ISSUES / REVISIONS

REVISED 03/20/20 - BID SET
BIDDING - CONSTRUCTION 03/27/2020

REVISED 06/16/20 - CCD #2) 2

REVISED 04/20/20 - ADDENDUM No. 1

CONSTRUCTION SET 05/04/2020

DRAWN BY

CHECKED BY

APPROVED BY

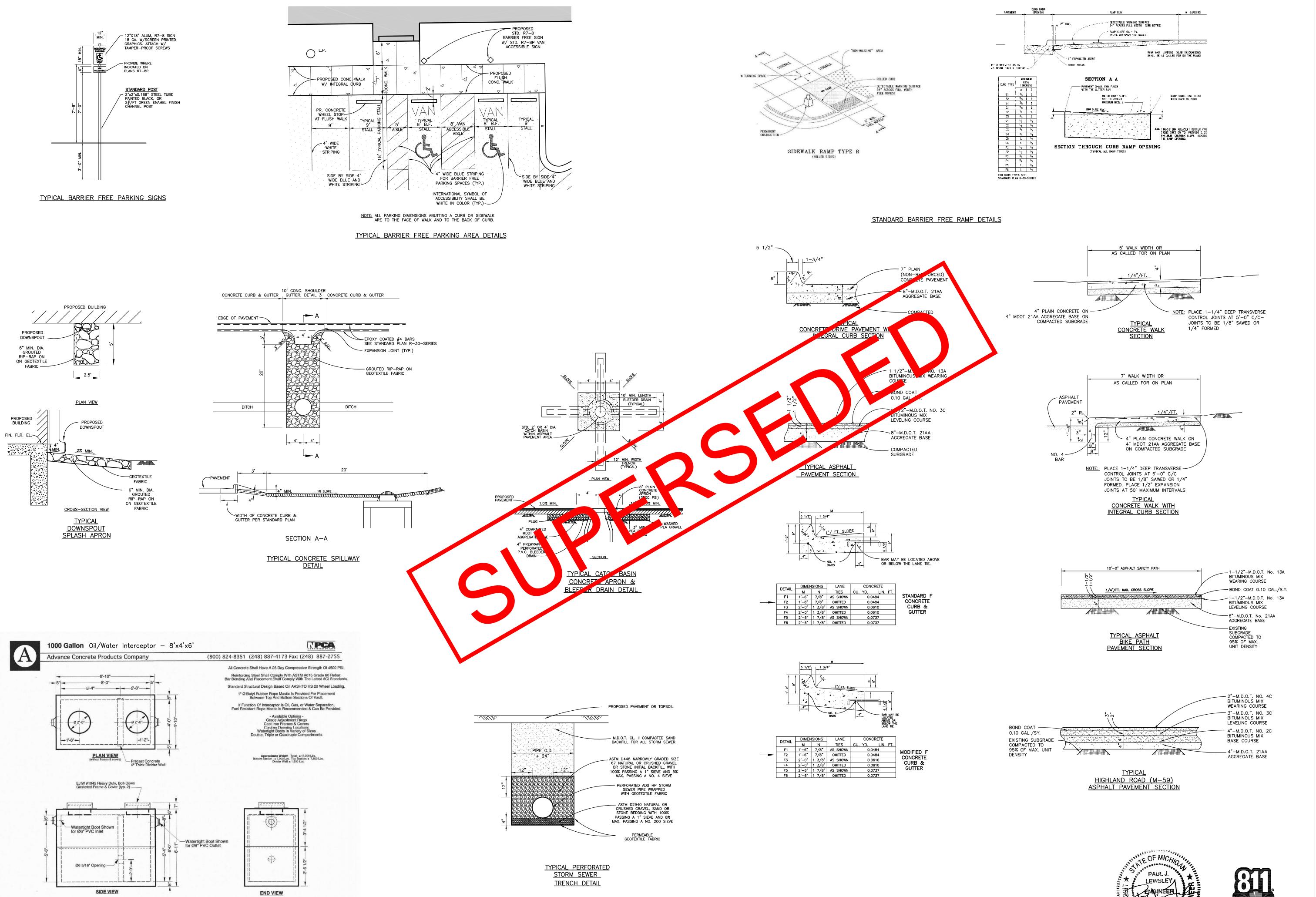
SHEET NAME

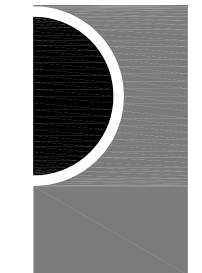
SHEET NO.

C-5

SITE SEPTIC SYSTEM

DETAILS





PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

P 586.469.3600 F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

ENVIRONMENTAL
ENGINEERS, INC.

18620 WEST TEN MILE ROAD
SOUTHFIELD, MICHIGAN 48075
PHONE: 248/424-9510
FAX: 248/424-2954
E-MAIL: pjlewsley@envengrs.com

KEY PLAN

OWNED

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, Ml 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

REVISED 02/18/20 - 70% CONSTRUCTION SET

REVISED 03/04/20 - PROGRESS SET

REVISED 03/20/20 - BID SET

BIDDING - CONSTRUCTION 03/27/2020

REVISED 04/20/20 - ADDENDUM No. 1 CONSTRUCTION SET 05/04/2020

CHECKED BY

DRAWN BY

APPROVED BY

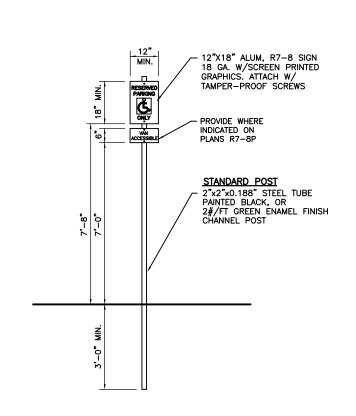
SHEET NAME

SITE ENGINEERING DETAILS

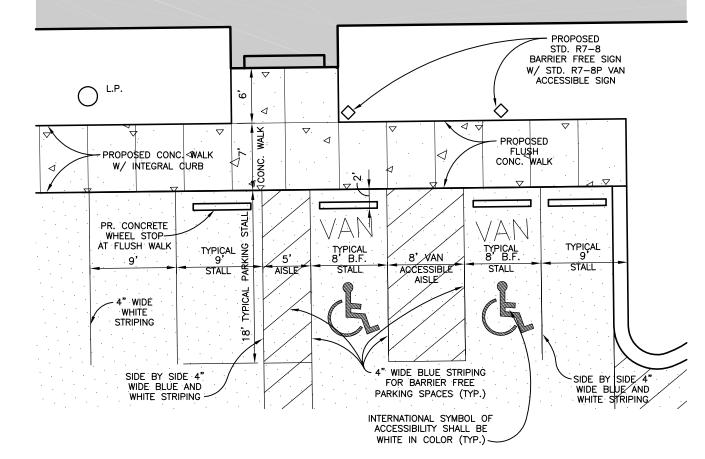
SHEET NO.

Know what's below.

Call before you dig.

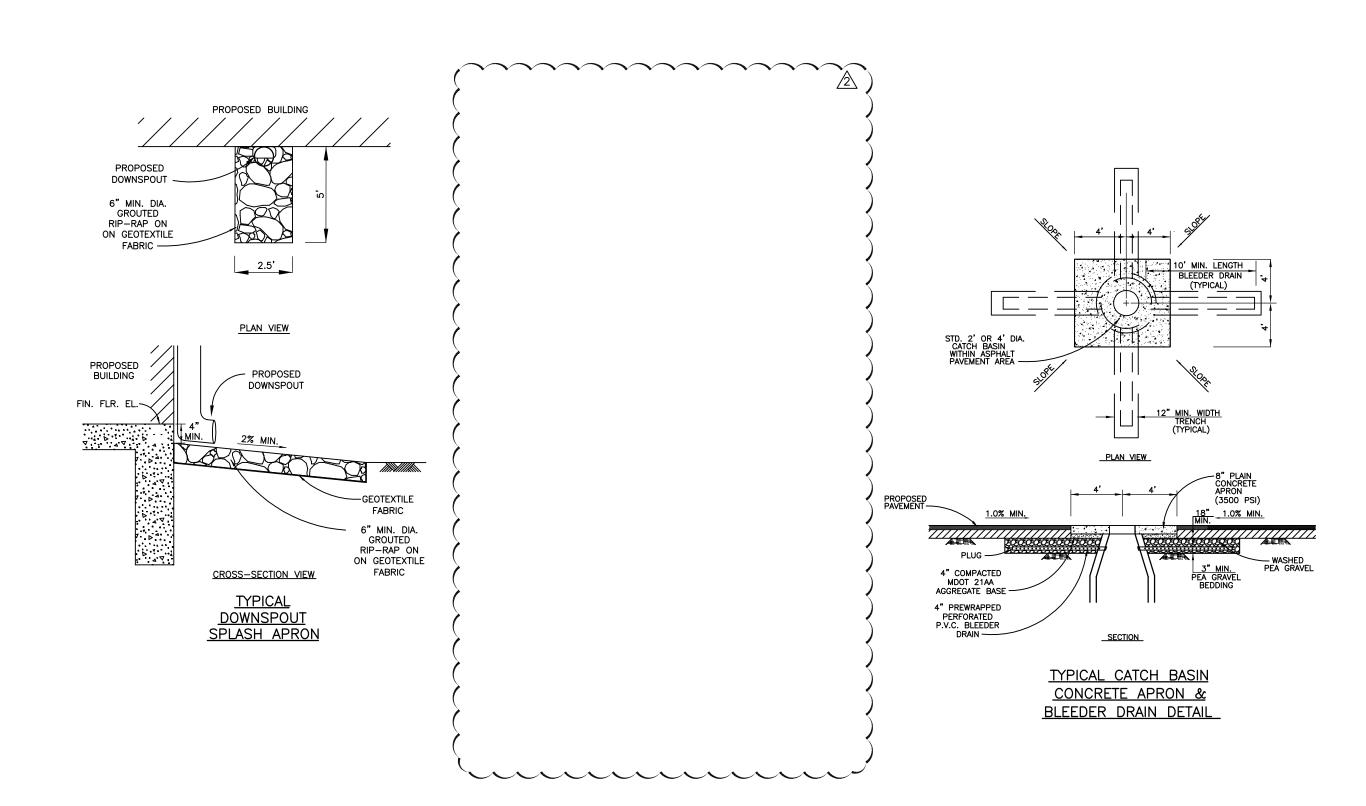


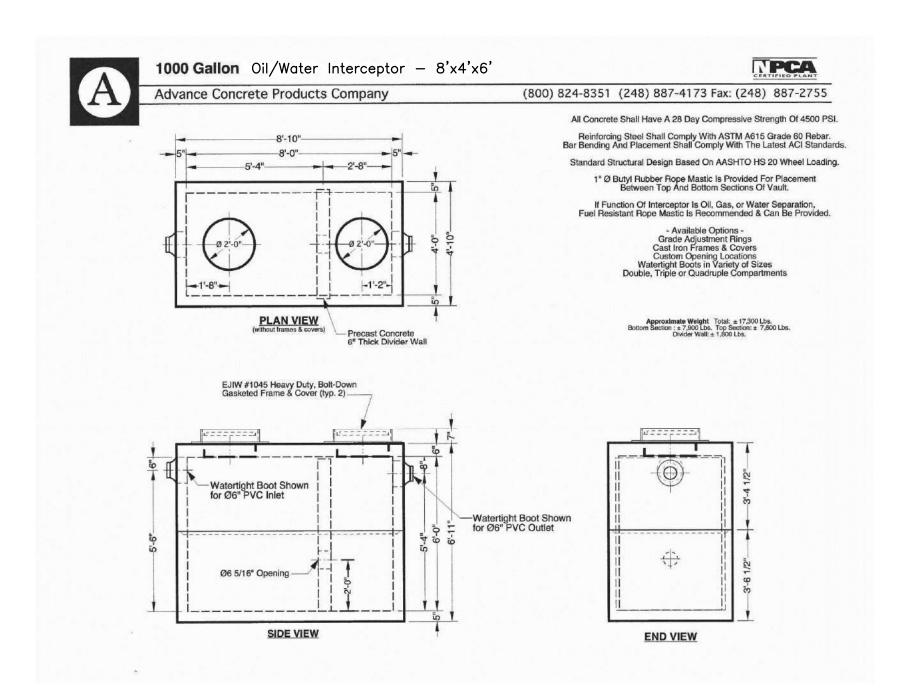
TYPICAL BARRIER FREE PARKING SIGNS

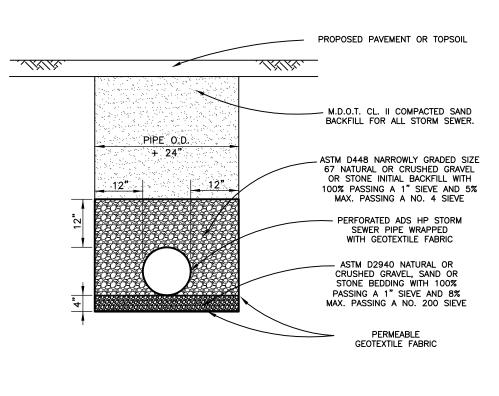


NOTE: ALL PARKING DIMENSIONS ABUTTING A CURB OR SIDEWALK ARE TO THE FACE OF WALK AND TO THE BACK OF CURB.

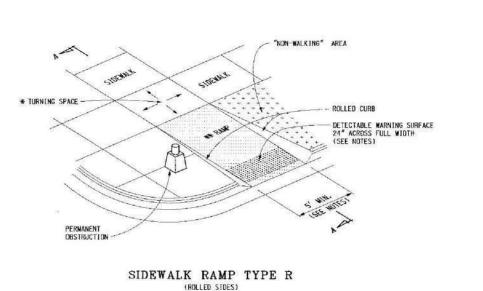
TYPICAL BARRIER FREE PARKING AREA DETAILS

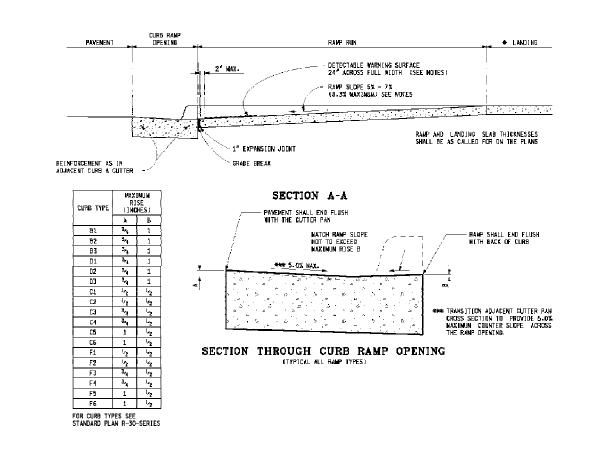




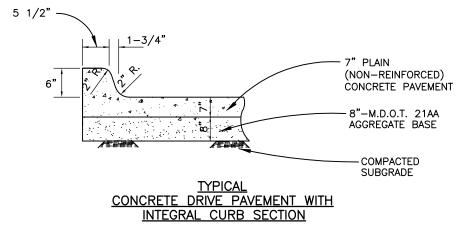


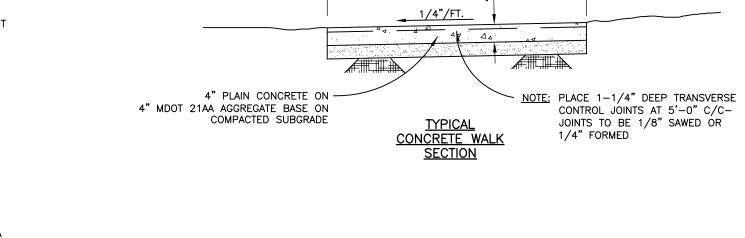
TYPICAL PERFORATED STORM SEWER TRENCH DETAIL

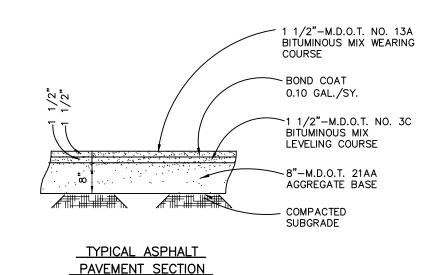


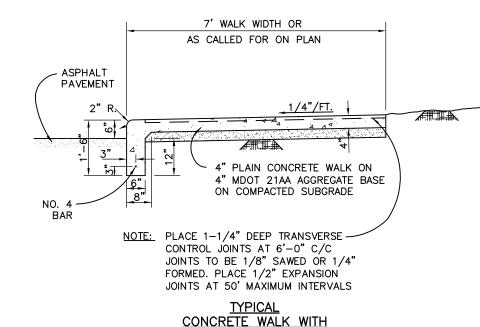


STANDARD BARRIER FREE RAMP DETAILS

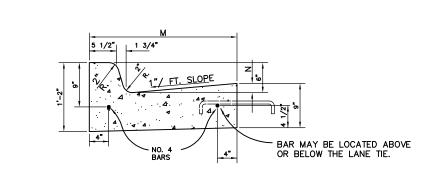


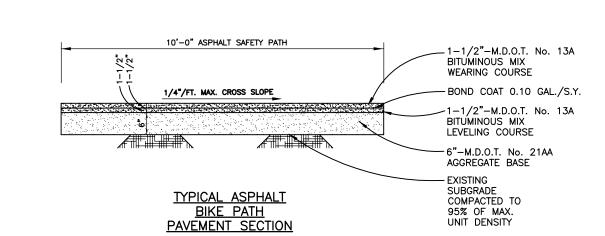


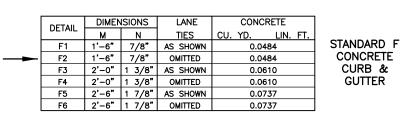


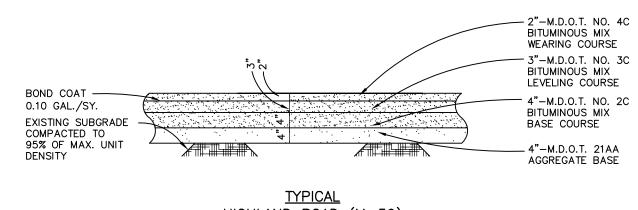


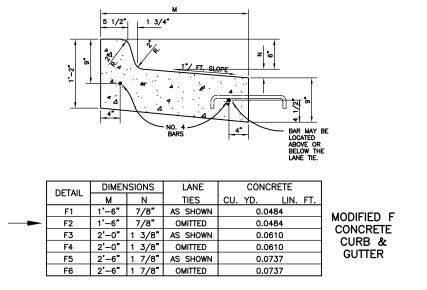
5' WALK WIDTH OR AS CALLED FOR ON PLAN

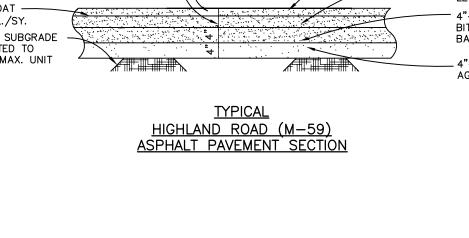


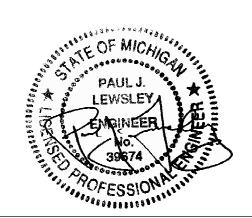






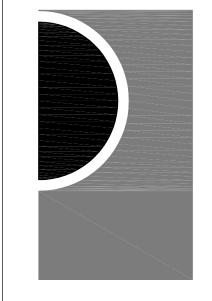








PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

Statement of Intellectual Property

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

ENVIRONMENTAL ENGINEERS, INC. 18620 WEST TEN MILE ROAD SOUTHFIELD, MICHIGAN 48075 PHONE: 248/424-9510 FAX: 248/424-2954 E-MAIL: pjlewsley@envengrs.com

KEY PLAN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

REVISED 03/20/20 - BID SET

REVISED 02/18/20 - 70% CONSTRUCTION SET REVISED 03/04/20 - PROGRESS SET

BIDDING - CONSTRUCTION 03/27/2020 REVISED 04/20/20 - ADDENDUM No. 1 CONSTRUCTION SET 05/04/2020

REVISED 06/16/20 - CCD #2) 🛕

DRAWN BY

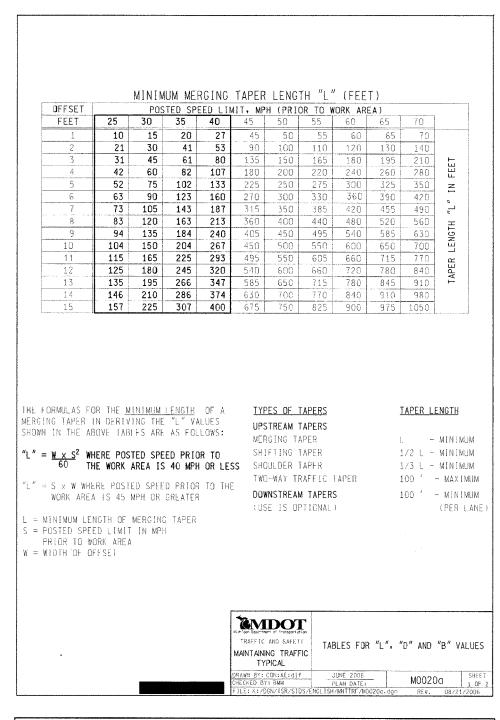
CHECKED BY

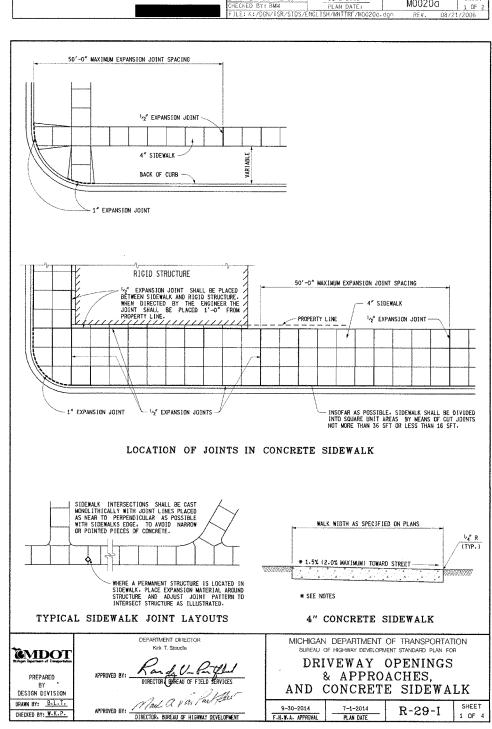
APPROVED BY

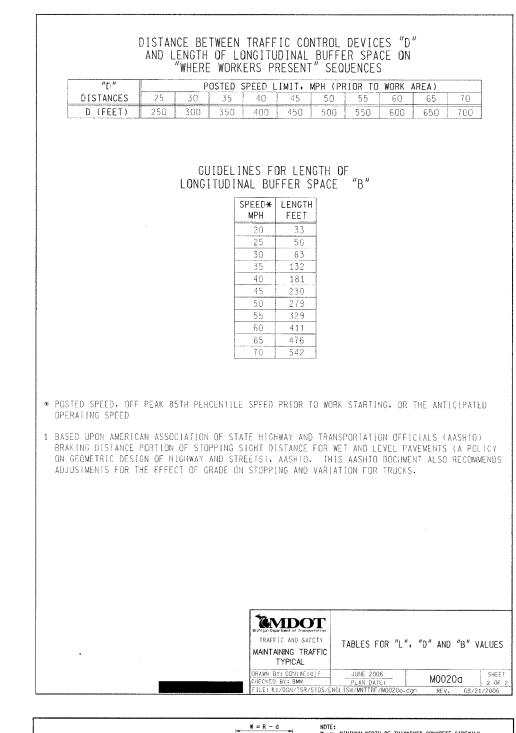
SHEET NAME

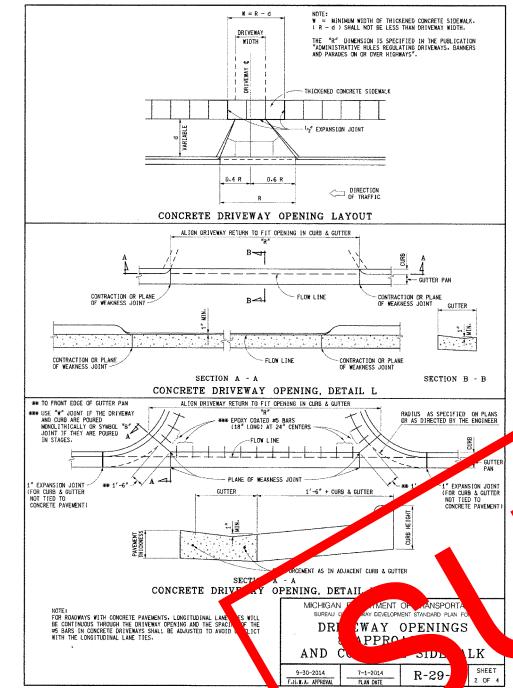
SITE ENGINEERING DETAILS

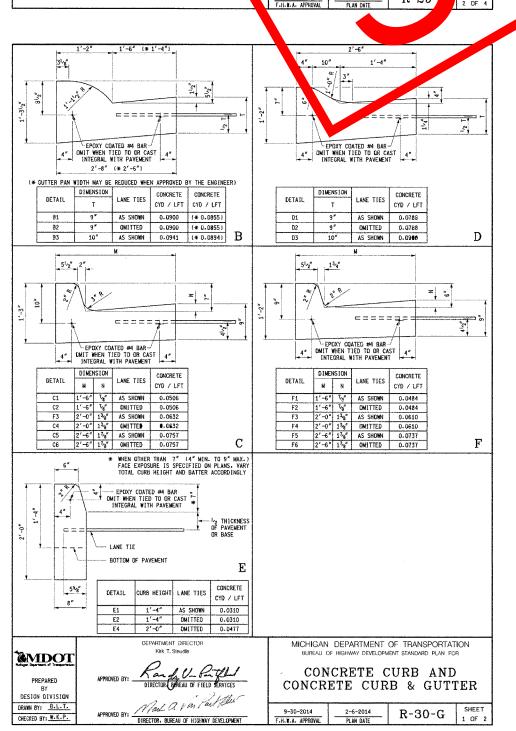
SHEET NO. C-6

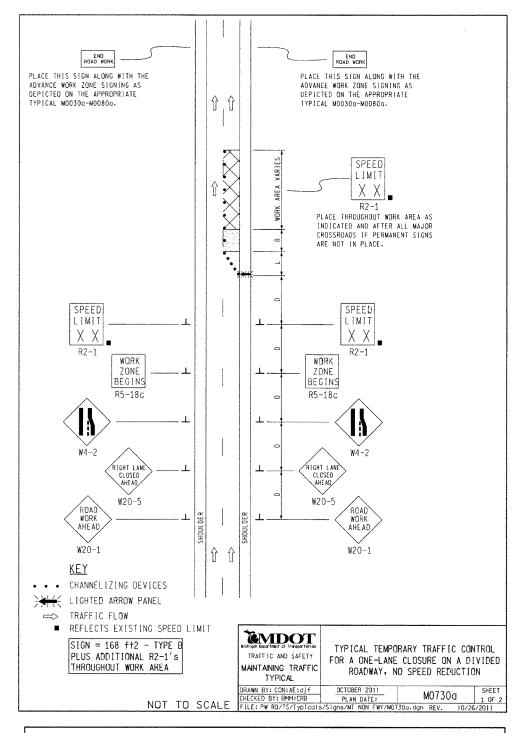


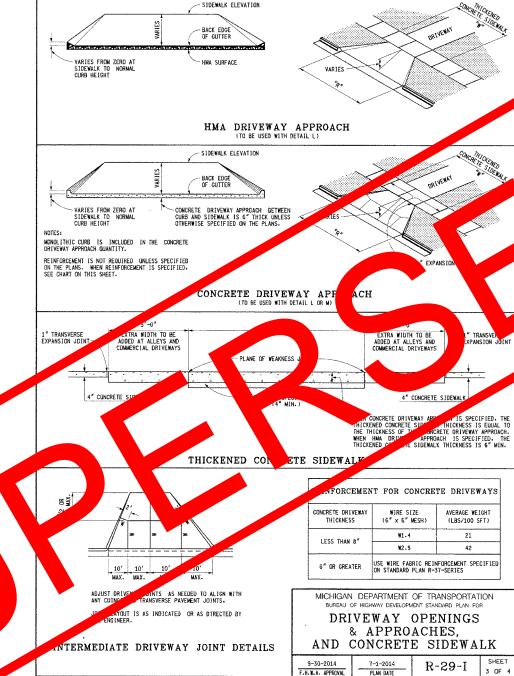


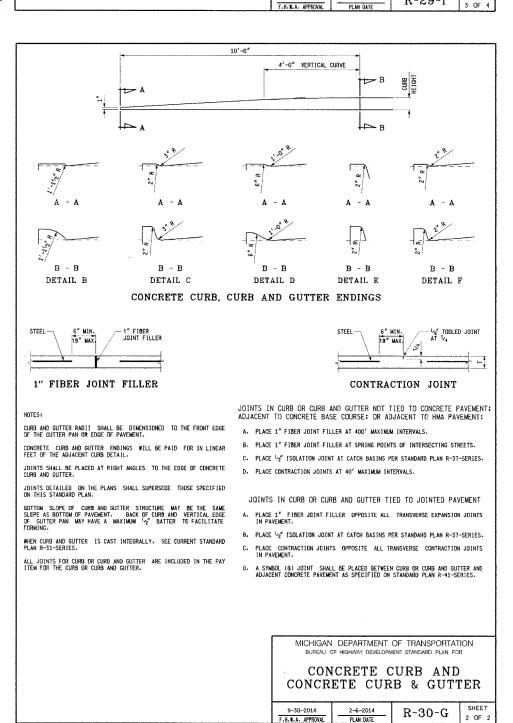


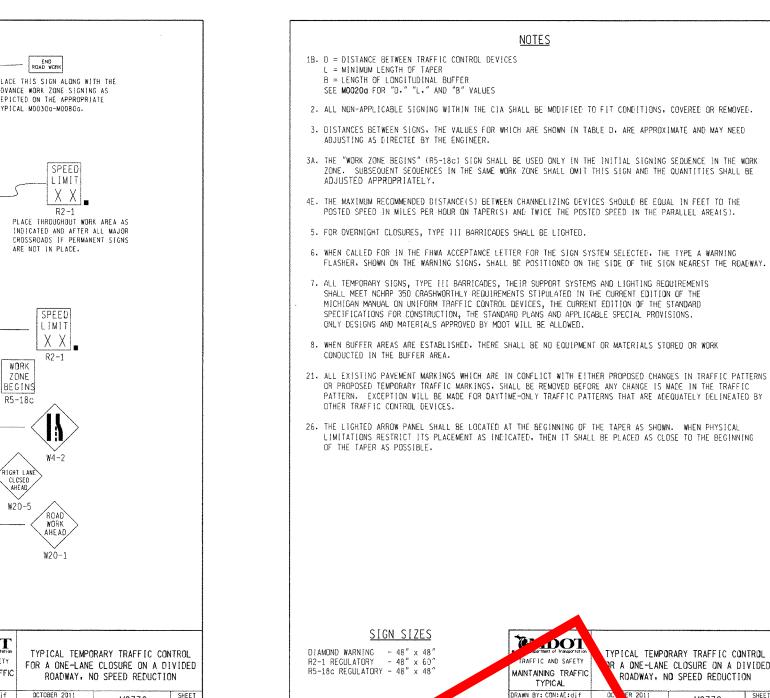


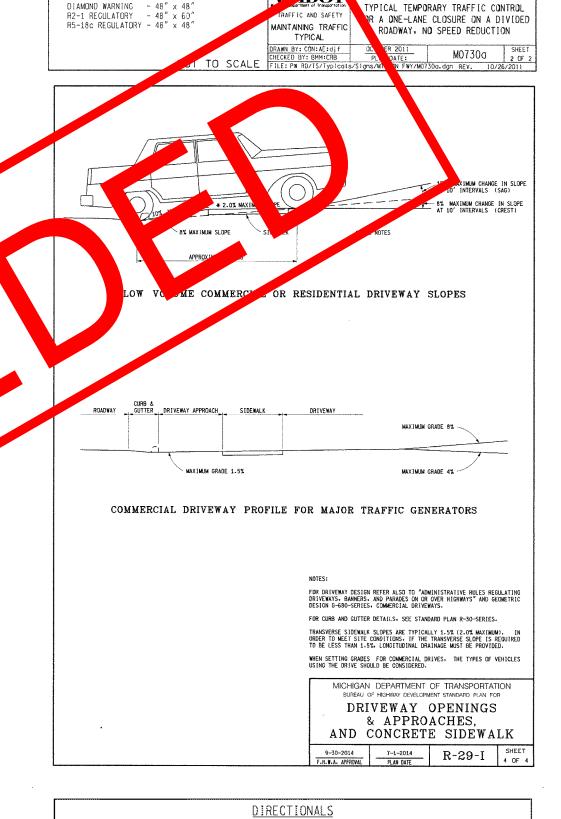


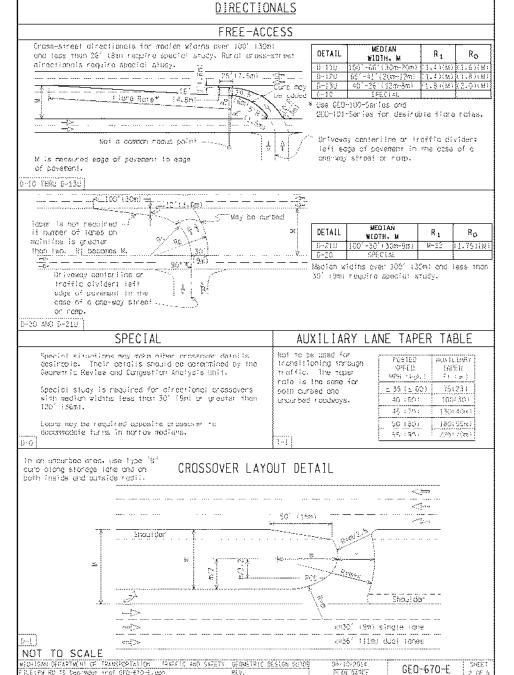


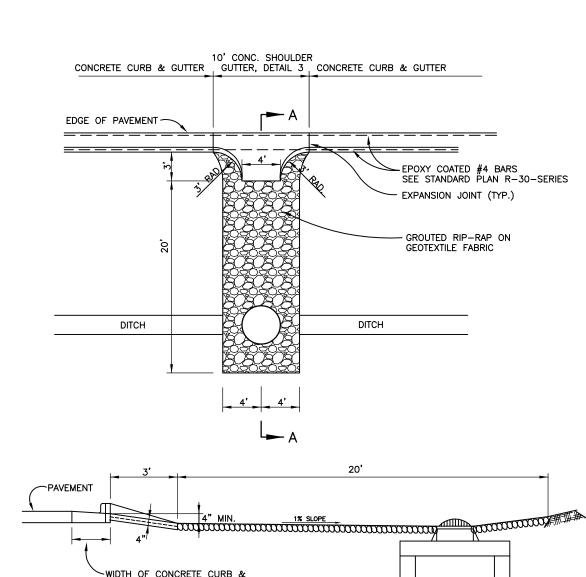










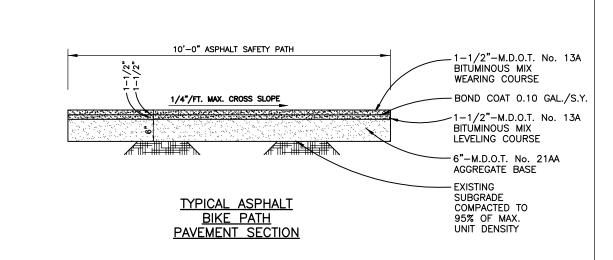


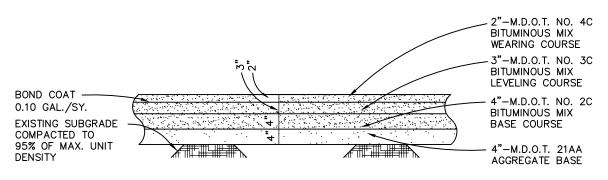
SECTION A-A

TYPICAL CONCRETE SPILLWAY

<u>DETAIL</u>

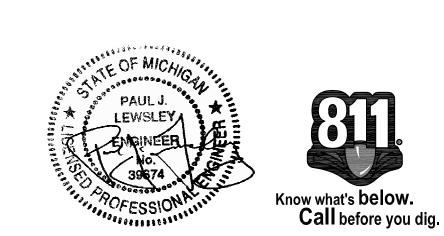
GUTTER PER STANDARD PLAN



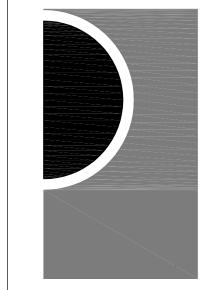


TYPICAL

HIGHLAND ROAD (M-59) <u>ASPHALT PAVEMENT SECTION</u>







PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

Statement of Intellectual Property

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC, This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

ENVIRONMENTAL ENGINEERS, INC. 18620 WEST TEN MILE ROAD SOUTHFIELD, MICHIGAN 48075 PHONE: 248/424-9510 FAX: 248/424-2954 E-MAIL: pjlewsley@envengrs.com

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No.

1600 W. Highland Rd Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS REVISED 02/18/20 - 70% CONSTRUCTION SET REVISED 03/04/20 - PROGRESS SET

REVISED 03/20/20 - BID SET BIDDING - CONSTRUCTION 03/27/2020 REVISED 04/20/20 - ADDENDUM No. 1 🚹 CONSTRUCTION SET 05/04/2020

DRAWN BY

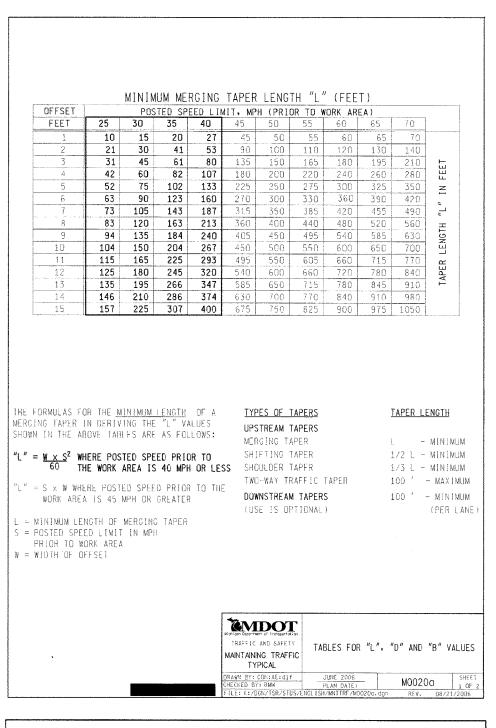
CHECKED BY

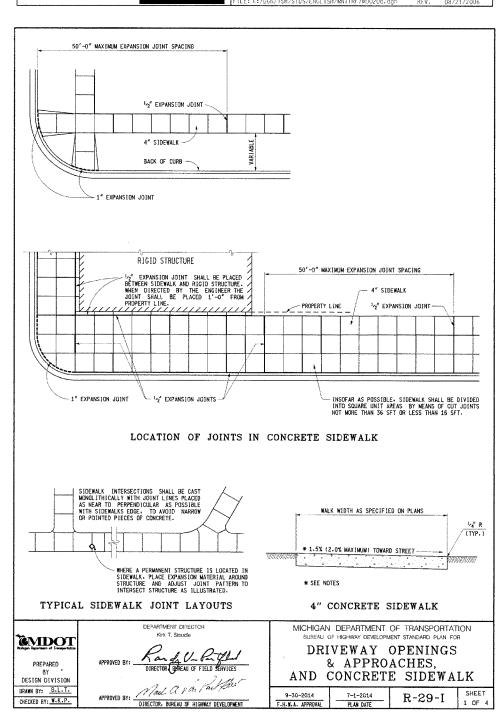
APPROVED BY

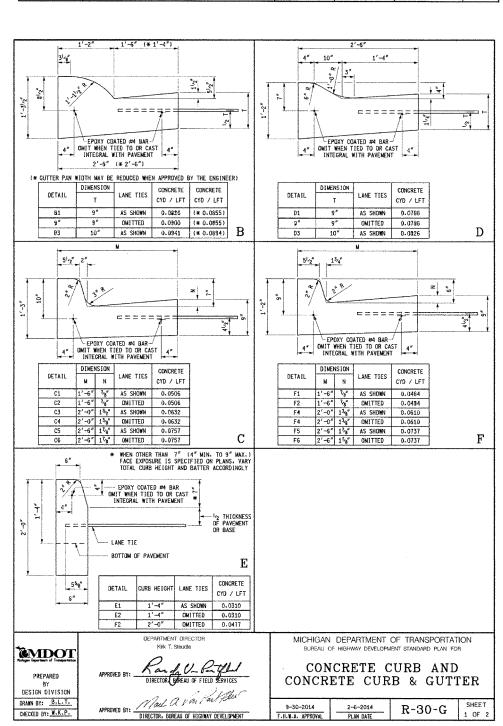
SHEET NAME

M.D.O.T. STANDARD DETAILS

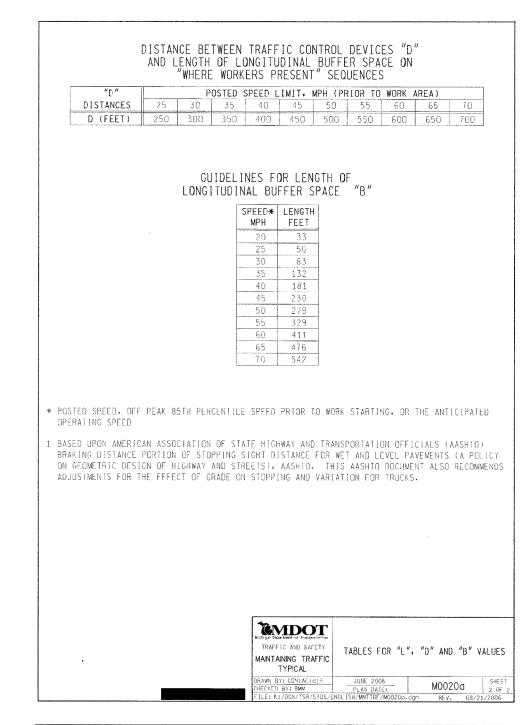
SHEET NO. C-7

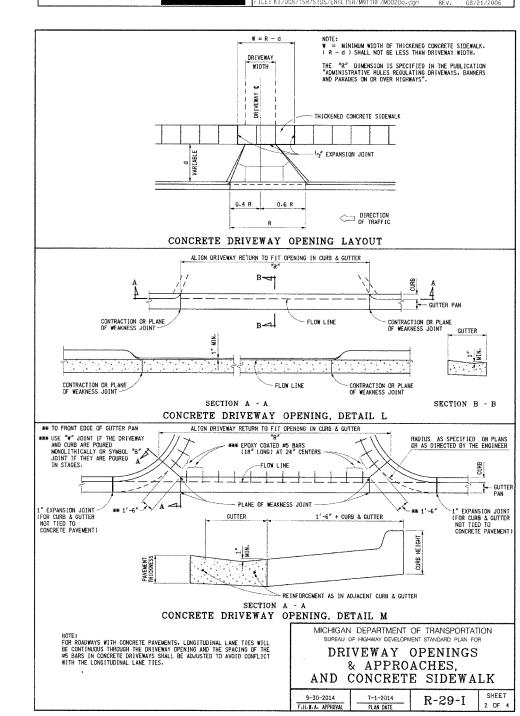


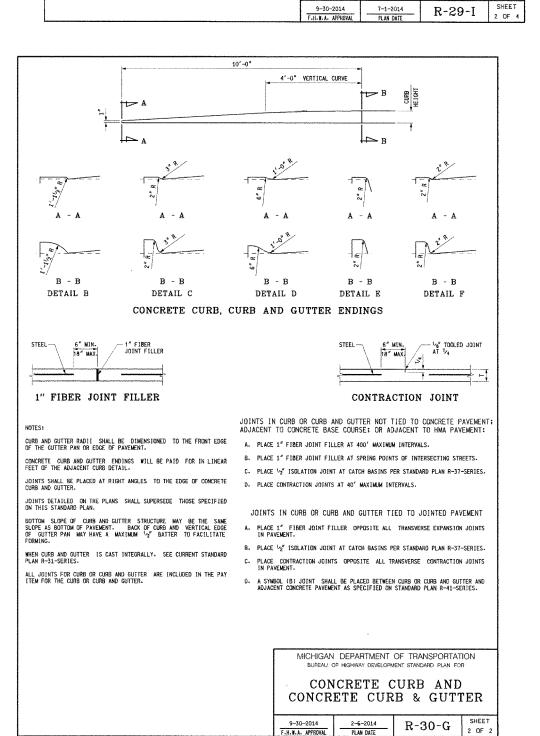


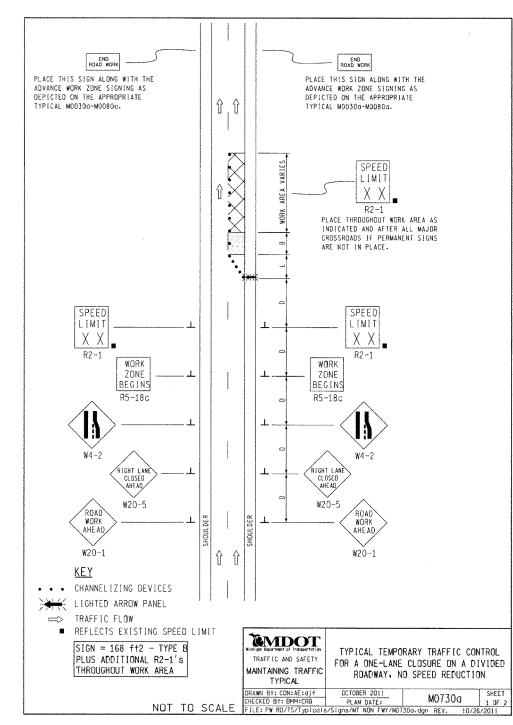


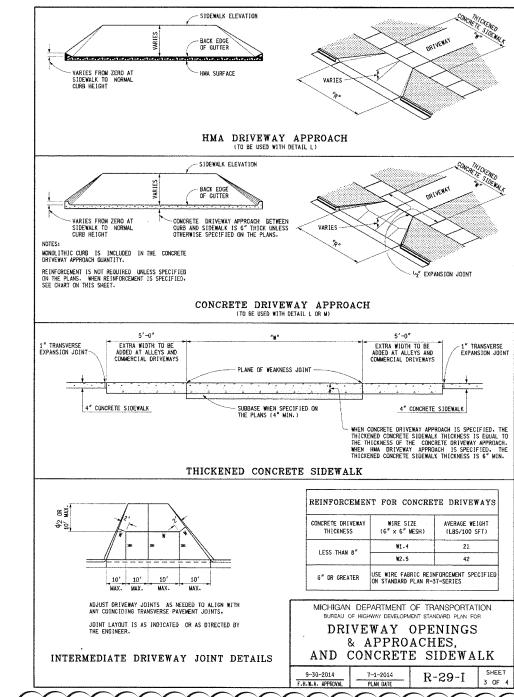
9-30-2014 2-6-2014 R-30-G

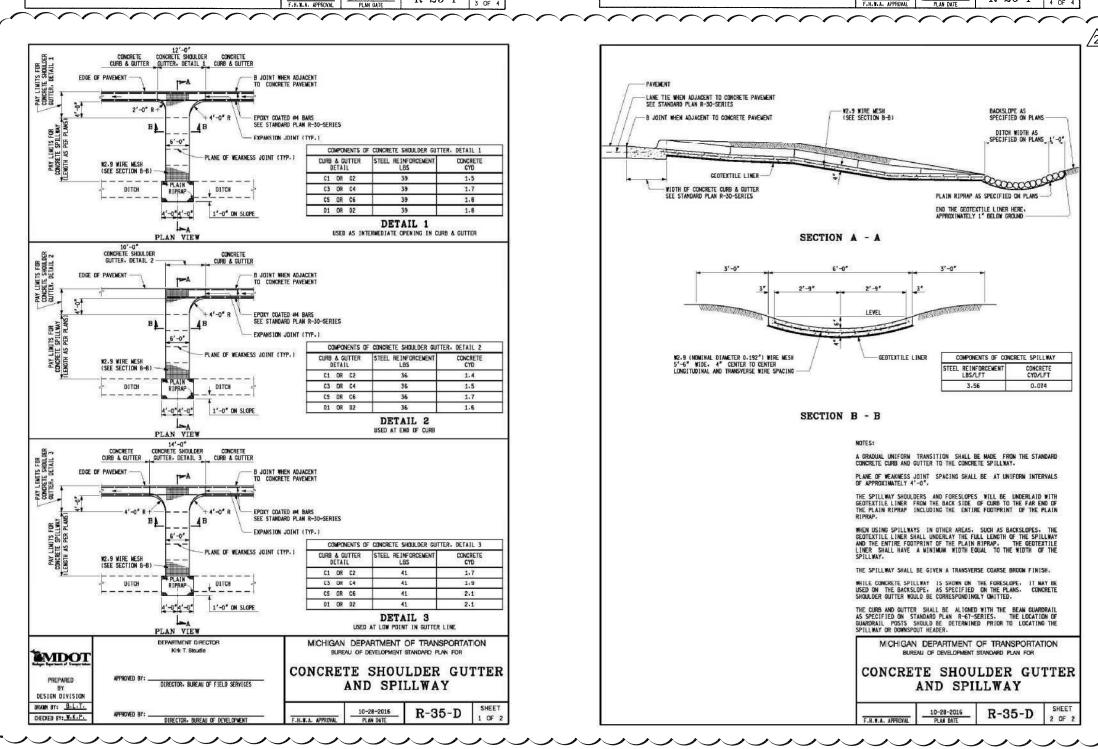








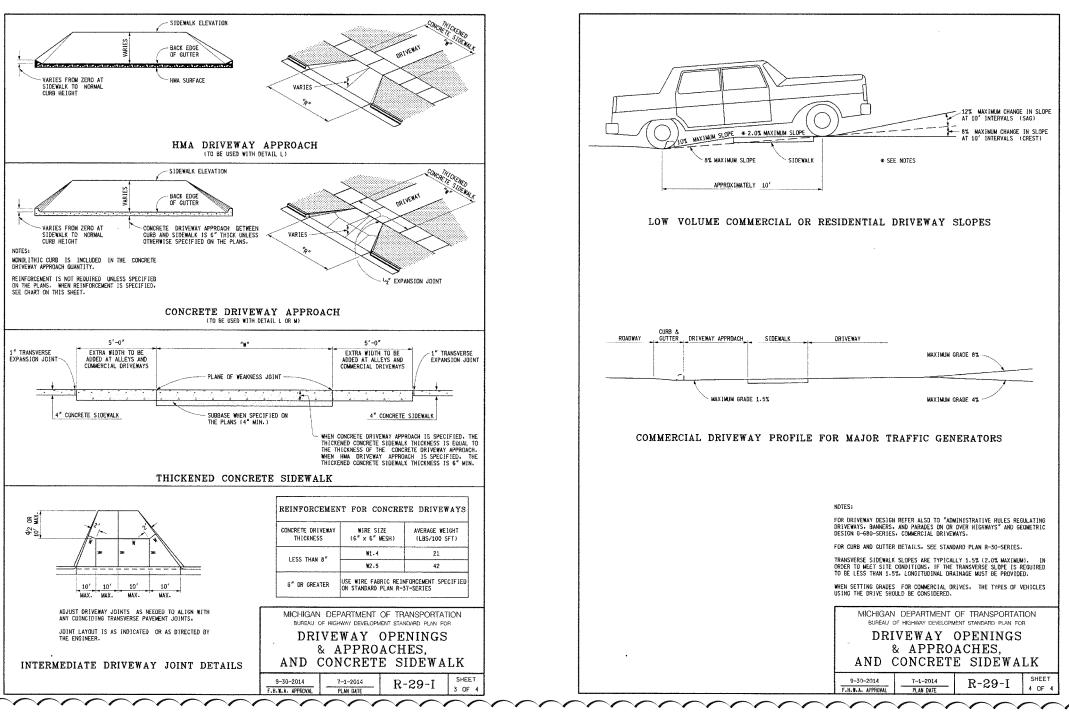


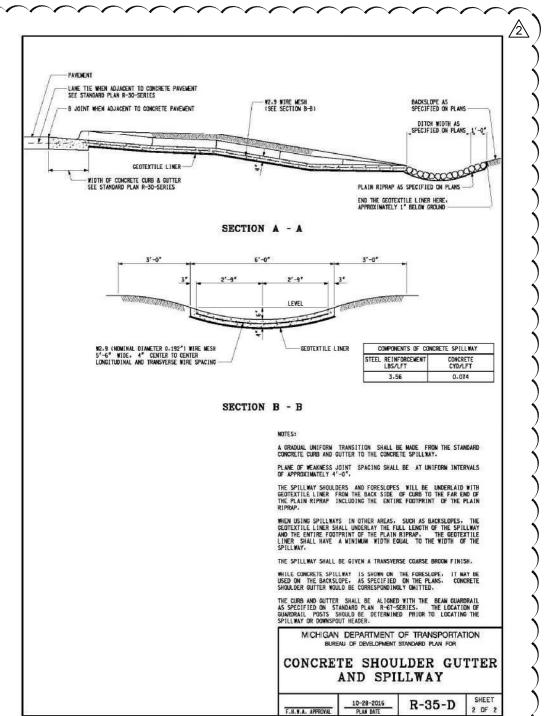


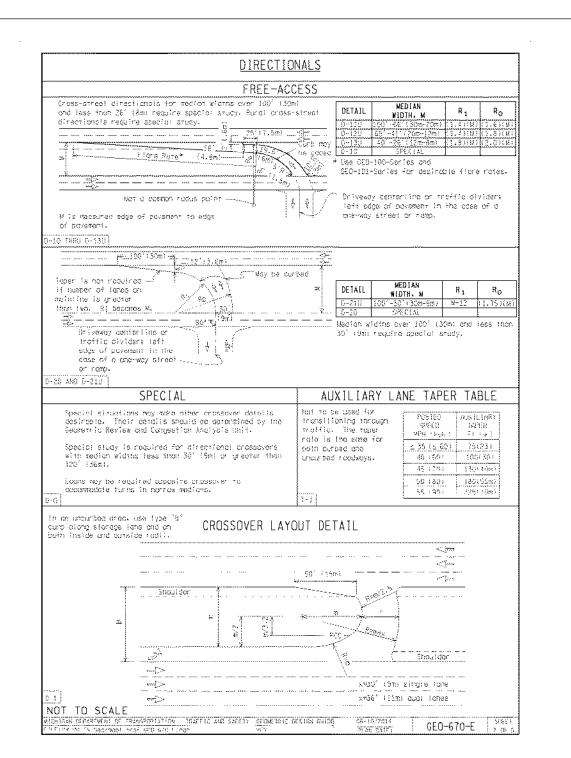
| 18. | <u>NOTES</u> |
|-----------|---|
| | D = CISTANCE BETWEEN TRAFFIC CONTROL DEVICES L = MINIMUM LENGTH OF TAPER B = LENGTH OF LONGITUDINAL BUFFER SEE MOO2Og FOR "D." "L." AND "B" VALUES |
| 2. | ALL NON-APPLICABLE SIGNING WITHIN THE CIA SHALL BE MODIFIED TO FIT CONDITIONS, COVERED OR REMOVED. |
| 3. | DISTANCES BETWEEN SIGNS. THE VALUES FOR WHICH ARE SHOWN IN TABLE D. ARE APPROXIMATE AND MAY NEED ADJUSTING AS DIRECTED BY THE ENGINEER. |
| 3A. | THE "WORK ZONE BEGINS" (R5-18c) SIGN SHALL BE USED ONLY IN THE INITIAL SIGNING SEQUENCE IN THE WORK ZONE. SUBSEQUENT SEQUENCES IN THE SAME WORK ZONE SHALL OMIT THIS SIGN AND THE QUANTITIES SHALL BE ADJUSTED APPROPRIATELY. |
| 4E. | THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S). |
| 5. | FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED. |
| 6. | WHEN CALLED FOR IN THE FHWA ACCEPTANCE LETTER FOR THE SIGN SYSTEM SELECTED. THE TYPE A WARNING FLASHER, SHOWN ON THE WARNING SIGNS, SHALL BE POSITIONED ON THE SIDE OF THE SIGN NEAREST THE ROADWAY |
| 7. | ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHLY REQUIREMENTS STIPULATED IN THE CURRENT EDITION OF THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE STANDARD PLANS AND APPLICABLE SPECIAL PROVISIONS. ONLY DESIGNS AND MATERIALS APPROVED BY MODT WILL BE ALLOWED. |
| 8. | WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA. |
| 21. | ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERN OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ACEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES. |
| 26. | THE LIGHTED ARROW PANEL SHALL BE LOCATED AT THE BEGINNING OF THE TAPER AS SHOWN. WHEN PHYSICAL LIMITATIONS RESTRICT ITS PLACEMENT AS INDICATED, THEN IT SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE. |
| | |
| | |
| | |
| | |
| | SIGN SIZES EMDOT |
| D17 B2 | AMOND WARNING — 48" × 48" TREGULATORY — 48" × 60" TRAFFIC AND SAFETY FOR A DNE-LANE CLOSURE ON A DIVID |

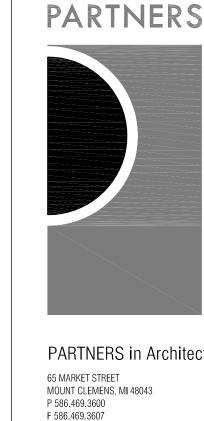
M0730a

MAINTAINING TRAFFIC ROADWAY, NO SPEED REDUCTION









PARTNERS in Architecture, PLC

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

CONSULTANT

© Copyright 2019

ENVIRONMENTAL ENGINEERS, INC. 18620 WEST TEN MILE ROAD SOUTHFIELD, MICHIGAN 48075 PHONE: 248/424-9510 FAX: 248/424-2954 E-MAIL: pjlewsley@envengrs.com

KEY PLAN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No.

1600 W. Highland Rd Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS REVISED 02/18/20 - 70% CONSTRUCTION SET REVISED 03/04/20 - PROGRESS SET REVISED 03/20/20 - BID SET

CONSTRUCTION SET 05/04/2020 REVISED 06/16/20 - CCD #2) 🟂

BIDDING - CONSTRUCTION 03/27/2020

DRAWN BY

CHECKED BY

APPROVED BY

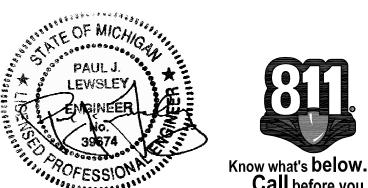
SHEET NAME

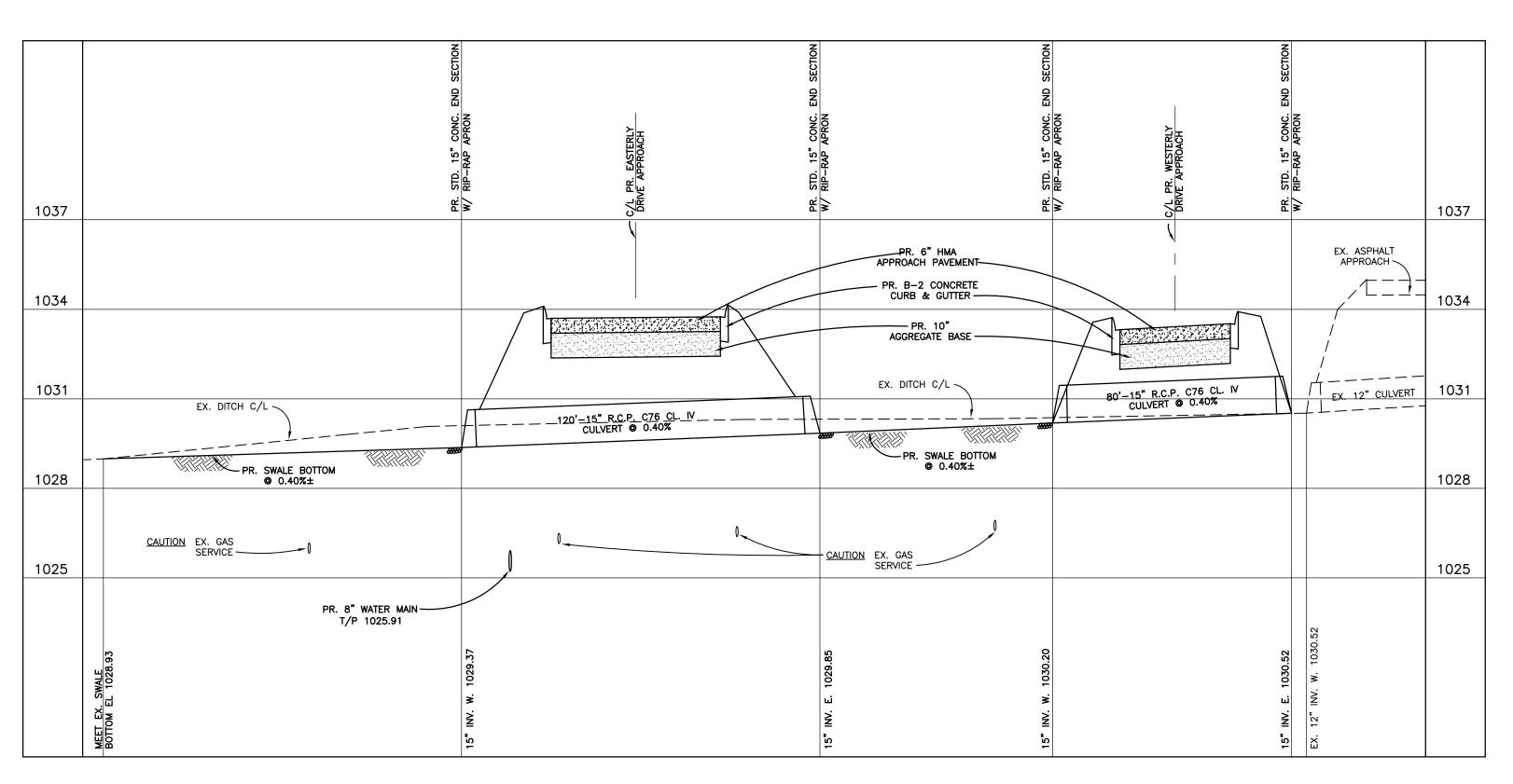
M.D.O.T. STANDARD DETAILS

SHEET NO.

Call before you dig.

C-7



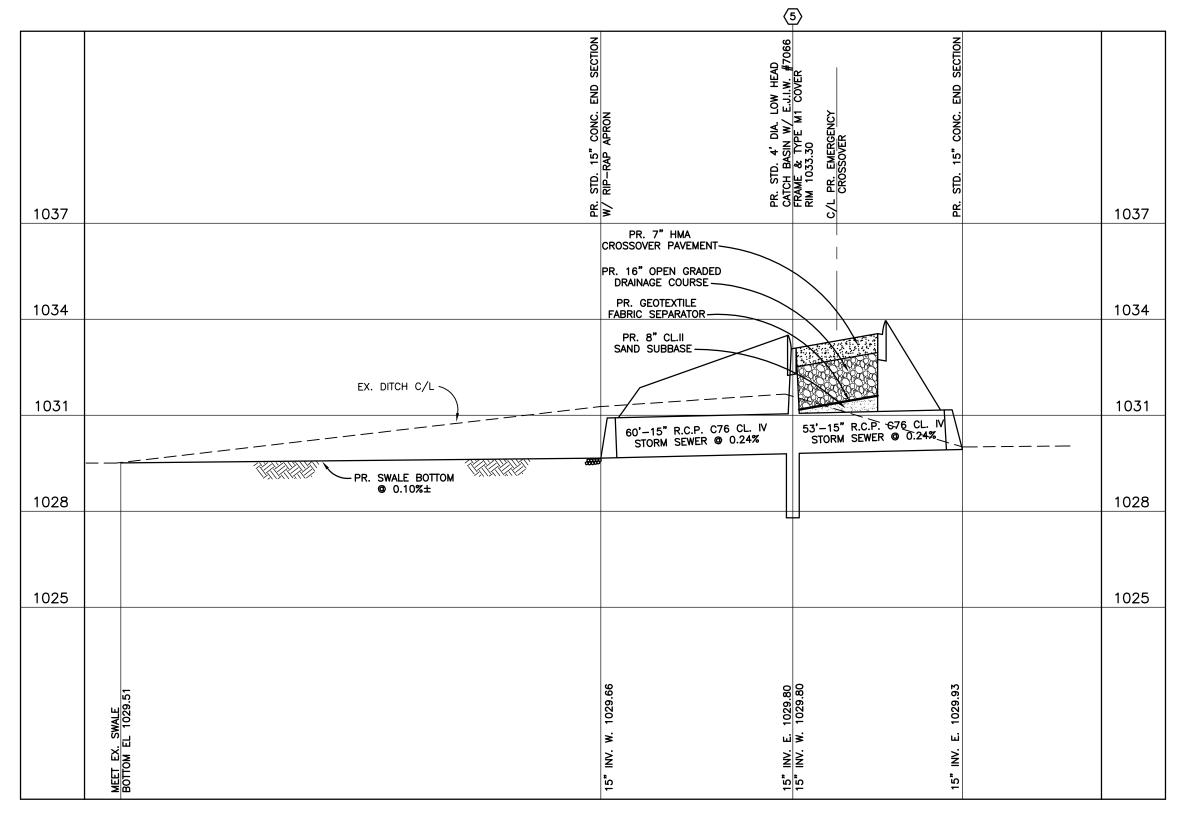


HIGHLAND ROAD R.O.W. FRONTAGE

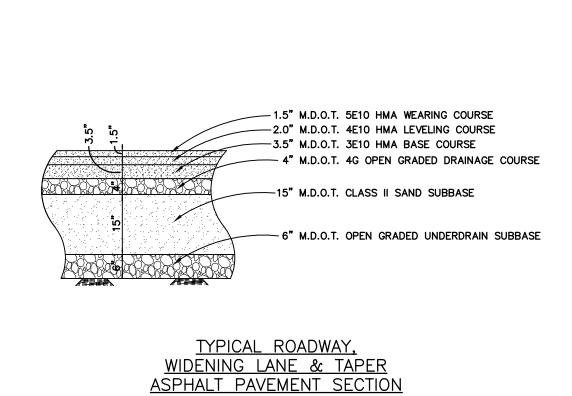
DITCH PROFILE

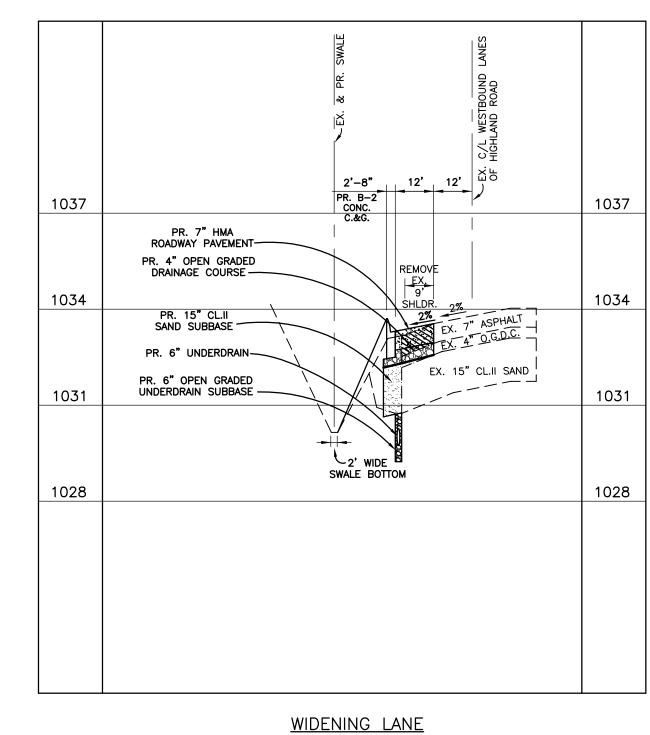
SCALE: 1"=30' HORIZONTAL

1"=3' VERTICAL



HIGHLAND ROAD MEDIAN
STORM SEWER PROFILE
SCALE: 1"=30' HORIZONTAL
1"=3' VERTICAL

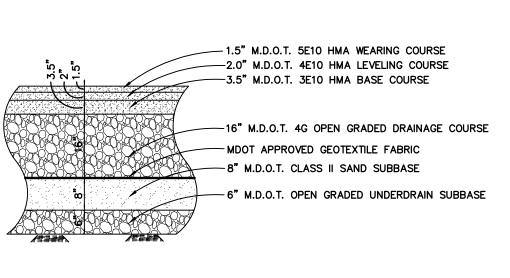


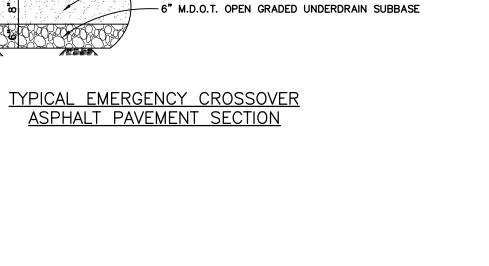


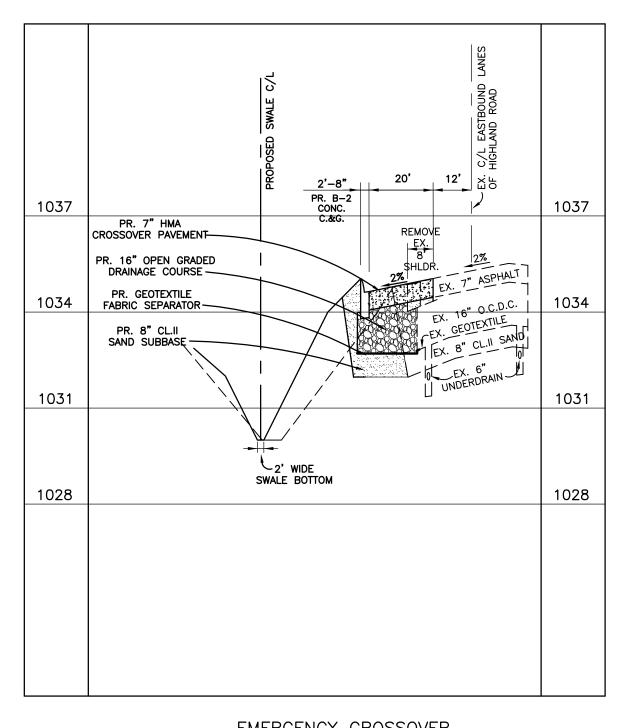
SECTION A-A

SCALE: 1"=30' HORIZONTAL

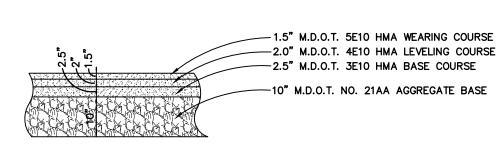
1"=3' VERTICAL



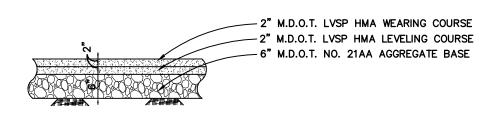








TYPICAL DRIVEWAY APPROACH ASPHALT PAVEMENT SECTION

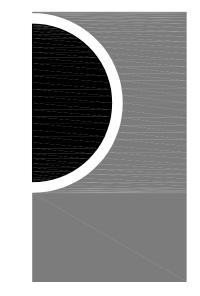


TYPICAL SAFETY PATH
ASPHALT PAVEMENT SECTION









PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

ENVIRONMENTAL
ENGINEERS, INC.

18620 WEST TEN MILE ROAD
SOUTHFIELD, MICHIGAN 48075
PHONE: 248/424-9510
FAX: 248/424-2954
E-MAIL: pjlewsley@envengrs.com

KFY PI AN

0/

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS
REVISED 02/18/20 - 70% CONSTRUCTION SET

REVISED 03/04/20 - PROGRESS SET

REVISED 03/20/20 - BID SET

BIDDING - CONSTRUCTION 03/27/2020

REVISED 04/20/20 - ADDENDUM No. 1

CONSTRUCTION SET 05/04/2020

(REVISED 06/16/20 - CCD #2)

DRAWN BY

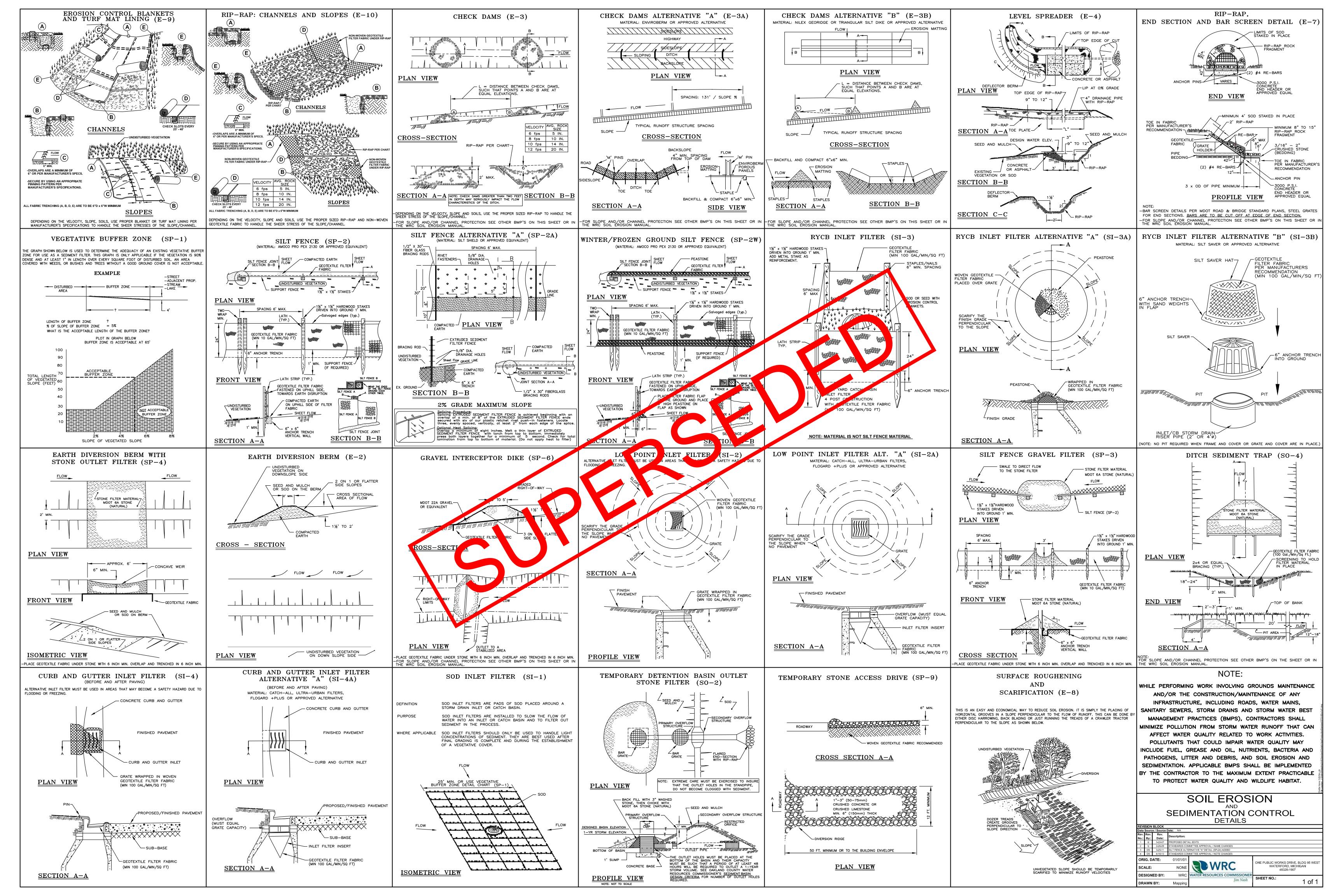
CHECKED BY

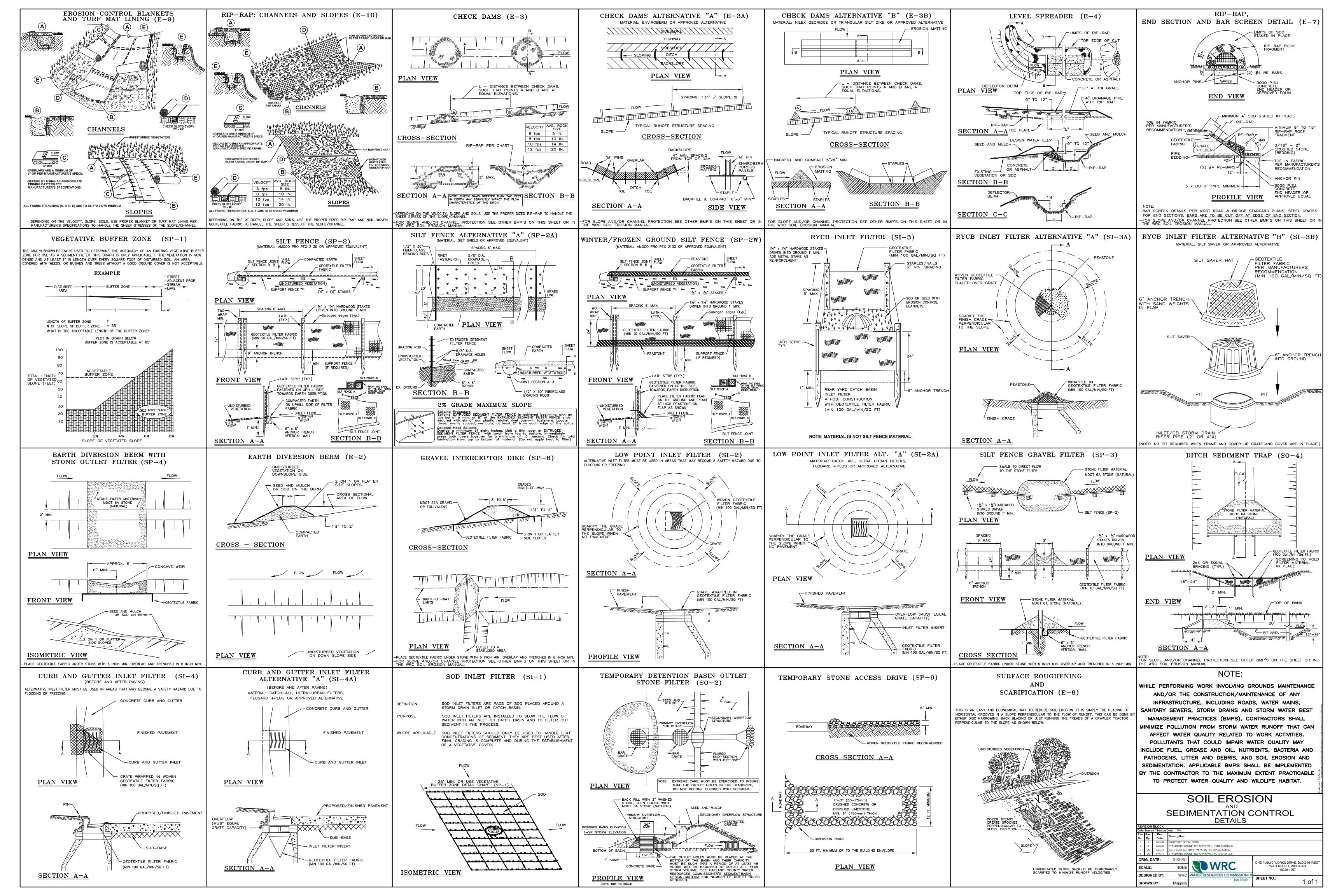
APPROVED BY

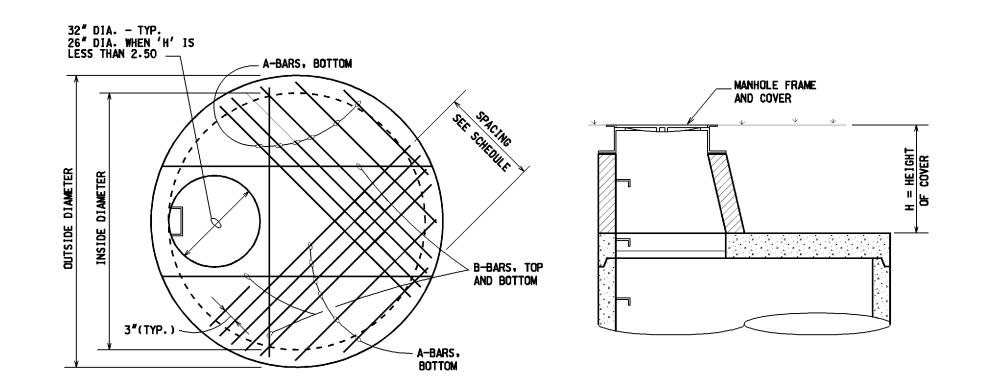
SHEET NAME

M.D.O.T. R.O.W. PROFILES & DETAILS



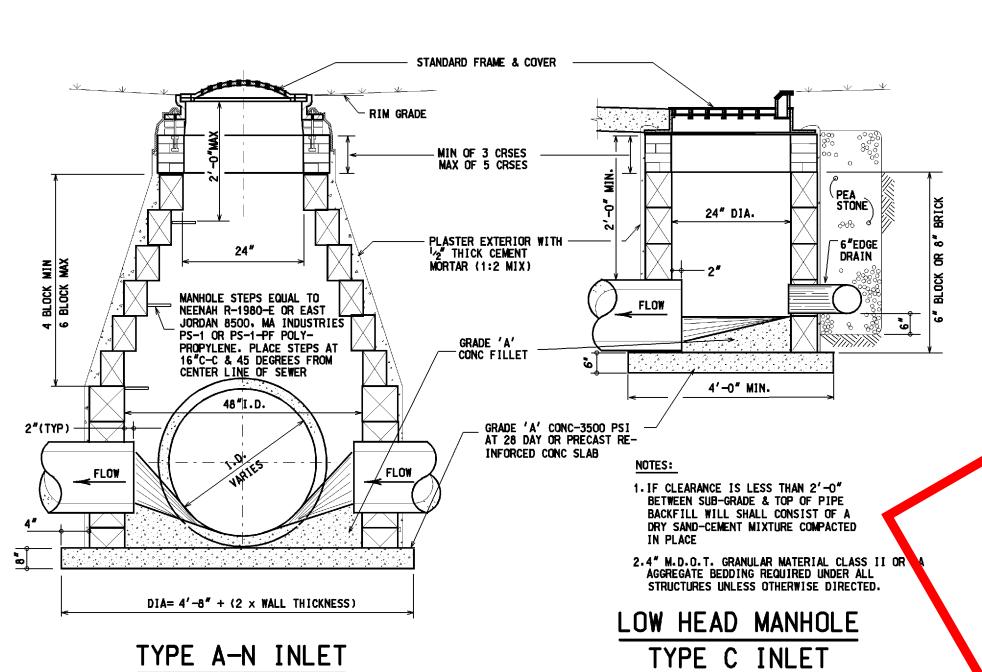


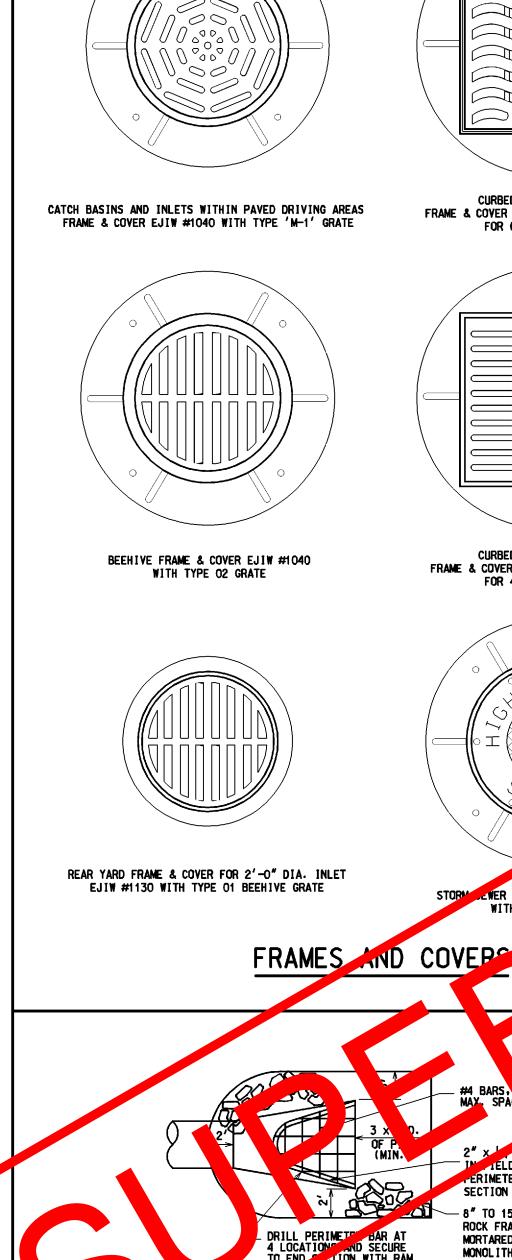




SECTION

| | | | | REINFORCEMENT | | | |
|-------------|-------------------|-------------------------|----------|------------------|-----------------|--|--|
| INSIDE DIA. | SLAB THICKNESS | MAX. HEIGHT OF COVER | A-BARS | EA. SIDE | B-BARS TOP | | |
| | | | NO. SIZE | SPACING | & BOTTOM | | |
| 4'-0" | 8# | 8'-0" | (4)-#5 | 3 @ 3" | (3) −# 5 | | |
| 5'-0" | 8" | 8'-0" | (6)-#5 | 3 @ 3" 2 @ 6" | (3)-#5 | | |
| 6'-0" | 8# | 8'-0" | (5)-#6 | 4 @ 8" | (3)-#5 | | |
| 7'-0" | 8" | 8'-0" | (7)-#6 | 6 @ 6" | (3)-#5 | | |
| 8'-0" | 8" | 8'-0" | (9)-#6 | 8 e 6" | (3)-#5 | | |
| 9'-0" | 10" | 8'-0" | (11)-#6 | 10 @ 6" | (3)-#5 | | |
| 10'-0" | 10" | 8'-0" | (13)-#7 | 12 @ 6" | (3)-#5 | | |







INCLUDING RIP-RAP

CURBED PAVEMENT SECTION

FOR 6" HIGH BACK CURB

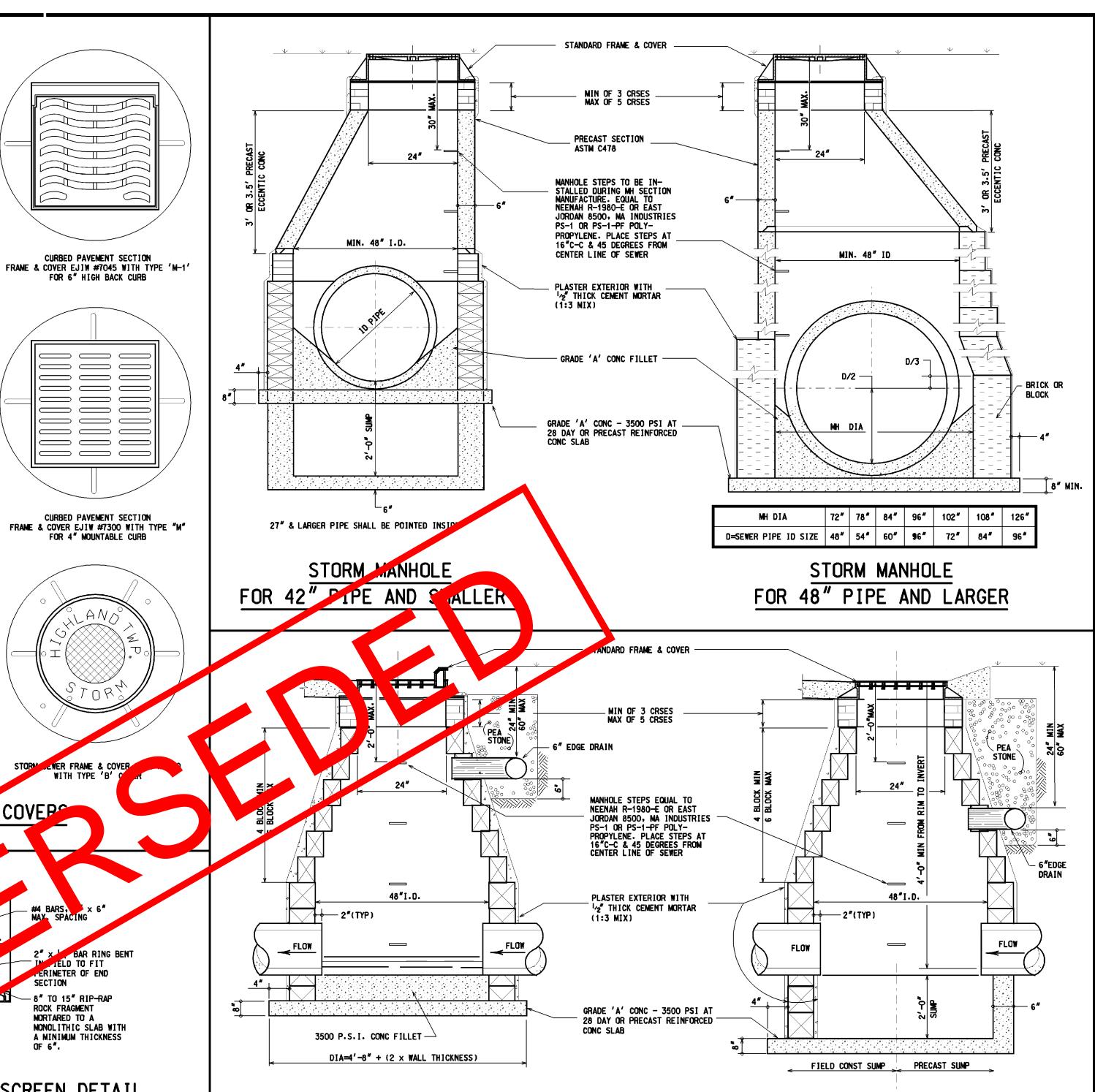
 \longrightarrow \subset

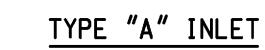
CURBED PAVEMENT SECTION

FOR 4" MOUNTABLE CURB

STORM LEWER FRAME & COVER

IN TELD TO FIT ERIMETER OF END





TYPE "B" CATCH BASIN

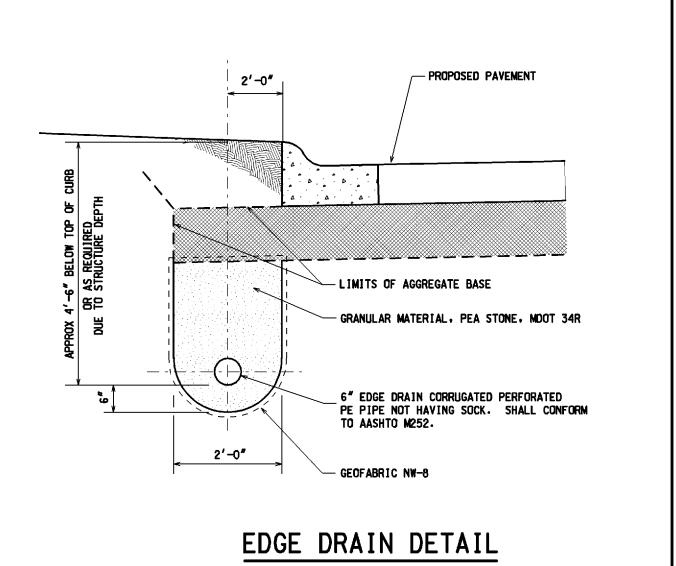
- 1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT ENGINEERING
- 2. IT SHALL BE THE OWNER'S ENGINEER AND CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXISTENCE
- 3. ALL SEWER TRENCHES UNDER THE 45 DEGREE ZONE OF INFLUENCE LINE OF EXISTING OR PROPOSED PAVEMENTS, BIKE PATHS, SIDEWALKS OR DRIVE APPROACHES SHALL BE BACKFILLED WITH MOOT CLASS 11 SAND COMPACTED TO AT LEAST 95% OF MAXIMUM UNIT WEIGHT.
- 4. ALL STORM SEWER SHALL BE INSTALLED ON CLASS "B" BEDDING OR BETTER.

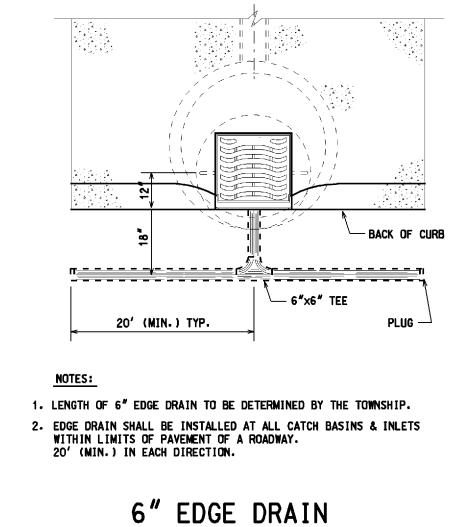
DESIGN STANDARDS AND SPECIFICATIONS OF HIGHLAND TOWNSHIP.

- 5. JOINTS FOR STORM SEWER SHALL BE PREMIUM JOINTS (TONGUE AND GROOVE WITH RUBBER GASKETS).
- 6. LEAD MATERIAL SHALL BE 4" DIA. (MIN.) PVC SCHEDULE 40 OR SDR 23.5. LEAD CONNECTIONS MAY ONLY BE AT STRUCTURES.
- 7. CONTACT THE TOWNSHIP ENGINEER 48 HOURS PRIOR TO STORM SEWER INSTALLATION TO SCHEDULE OBSERVATION: FULL TIME OBSERVATION IS REQUIRED FOR ALL UNDERGROUND STORM SEWER AND LEACHING SYSTEM CONSTRUCTION. CONTACT MICHAEL DARGA WITH HUBBELL, ROTH & CLARK, INC. 248-454-6532
- 8. BEFORE YOU DIG CALL MISS DIG AT 1-800-482-7171.

AND LOCATION OF ALL UNDERGROUND UTILITIES.

- 9. ALL MORTAR AND CONCRETE WORK SHALL BE PROTECTED FROM FREEZING (40° F. AND FALLING) FOR A MINIMUM OF 48 HOURS.
- 10. PIPE FOR STORM SEWERS WITHIN THE PUBLIC ROAD RIGHT-OF-WAY OR PRIVATE ROAD EASEMENT SHALL BE RCP, C-76, CLASS IV OR V RCP.
- 11. DOUBLE WALLED HOPE MEETING THE REQUIREMENTS OF ASTM F2306.



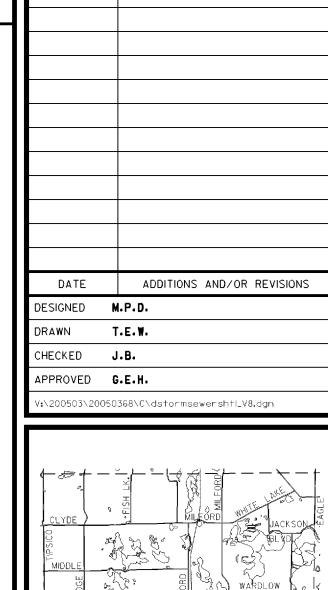


STANDARD FRAME & COVER MAX OF 5 CRSES STEEL. SEE DETAIL THIS PLASTER EXTERIOR WITH --SHEET. MORTAR (1:2 MIX) - 8" BRICK OR BLOCK MANHOLE STEPS EQUAL TO
NEENAH R-1980-E OR EAST
JORDAN 8500. MA INDUSTRIES
PS-1 OR PS-1-PF POLYPROPYLENE. PLACE STEPS AT 16"C-C & 45 DEGREES FROM CENTER LINE OF SEWER 8" MIN.-3500 P.S.I. CONC FILLET CONC - 3500 PSI AT 28 DAY OR PRECAST REINFORCED CONC SLAB 48" INSIDE DIA LOW-HEAD STORM SEWER STRUCTURE



HRC Hubbell, Roth & Clark, Inc. CONSULTING ENGINEERS 105 W. GRAND RIVER AVE.

HOWELL, MICHIGAN PHONE: (248) 454-6300 DIRECT PHONE: (517) 552-9199 FAX: (517) 552-6099 WEB SITE: http://www.hrc-engr.com

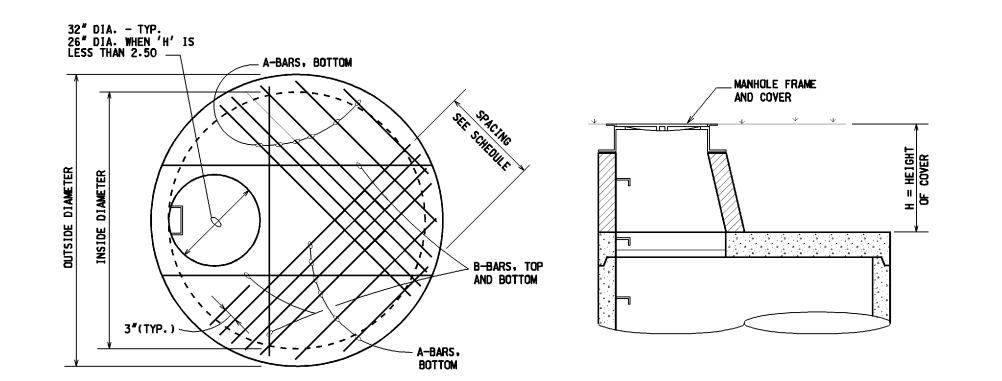


HIGHLAND TOWNSHIP DESIGN STANDARDS

HIGHLAND TOWNSHIP

STORM SEWER DETAILS

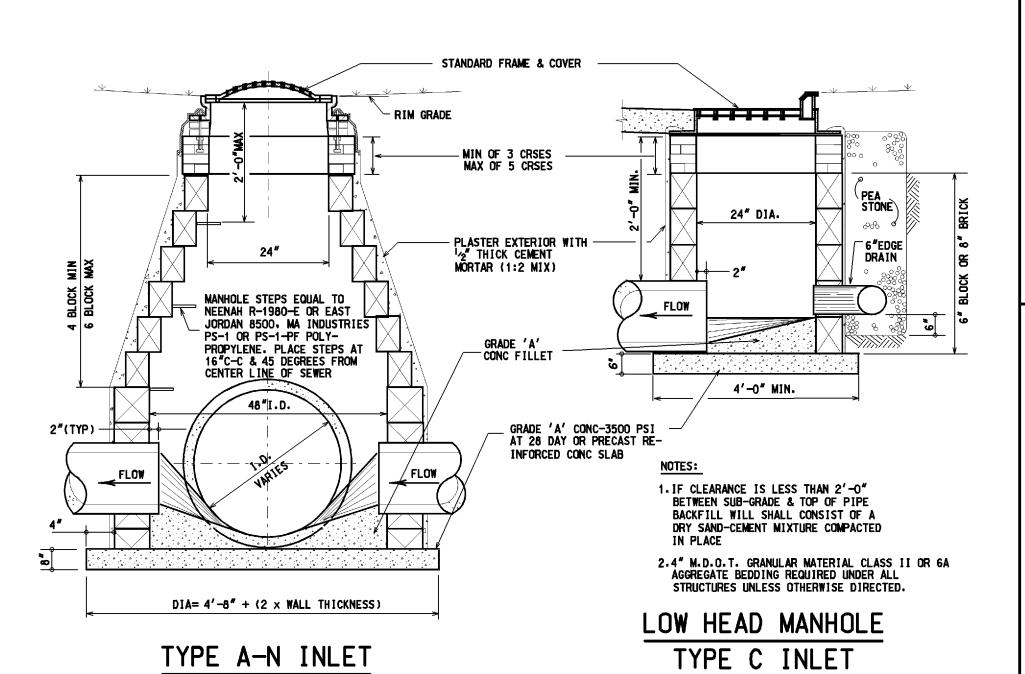
| HRC JOB NO. | SCALE | |
|----------------|-------|------|
| 20050368 | NO | NE |
| DATE | SHEET | |
| SEPTEMBER 2005 | NO. | OF 2 |

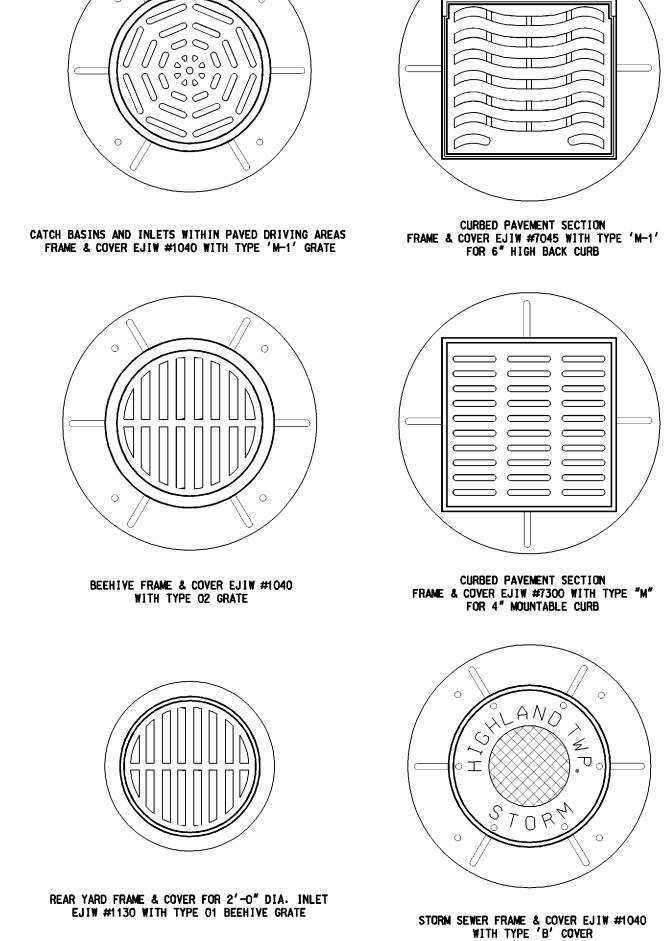


PLAN

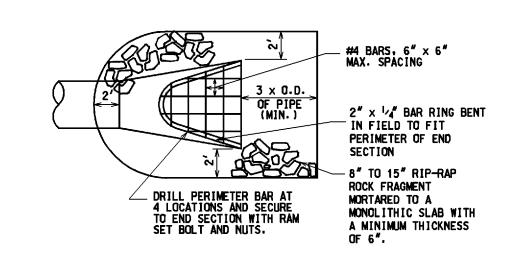
SECTION

| | | | REINFORCEMENT | | | | |
|-------------|-------------------|-------------------------|----------------|------------------|----------|--|--|
| INSIDE DIA. | SLAB THICKNESS | MAX. HEIGHT OF COVER | A_DADS EA SIDE | | | | |
| | | J. 33VE(1 | NO. SIZE | SPACING | & BOTTOM | | |
| 4'-0" | 8# | 8'-0" | (4)-#5 | 3 € 3" | (3)-#5 | | |
| 5'-0" | 8" | 8'-0" | (6)-#5 | 3 @ 3" 2 @ 6" | (3)-#5 | | |
| 6'-0" | 8# | 8'-0" | (5)-#6 | 4 @ 8" | (3)-#5 | | |
| 7'-0" | 8# | 8'-0" | (7)-#6 | 6 @ 6" | (3)-#5 | | |
| 8'-0" | 8" | 8'-0" | (9)-#6 | 8 @ 6" | (3)-#5 | | |
| 9'-0" | 10" | 8'-0" | (11)-#6 | 10 @ 6" | (3)-#5 | | |
| 10'-0" | 10" | 8'-0" | (13)-#7 | 12 @ 6" | (3)−#5 | | |

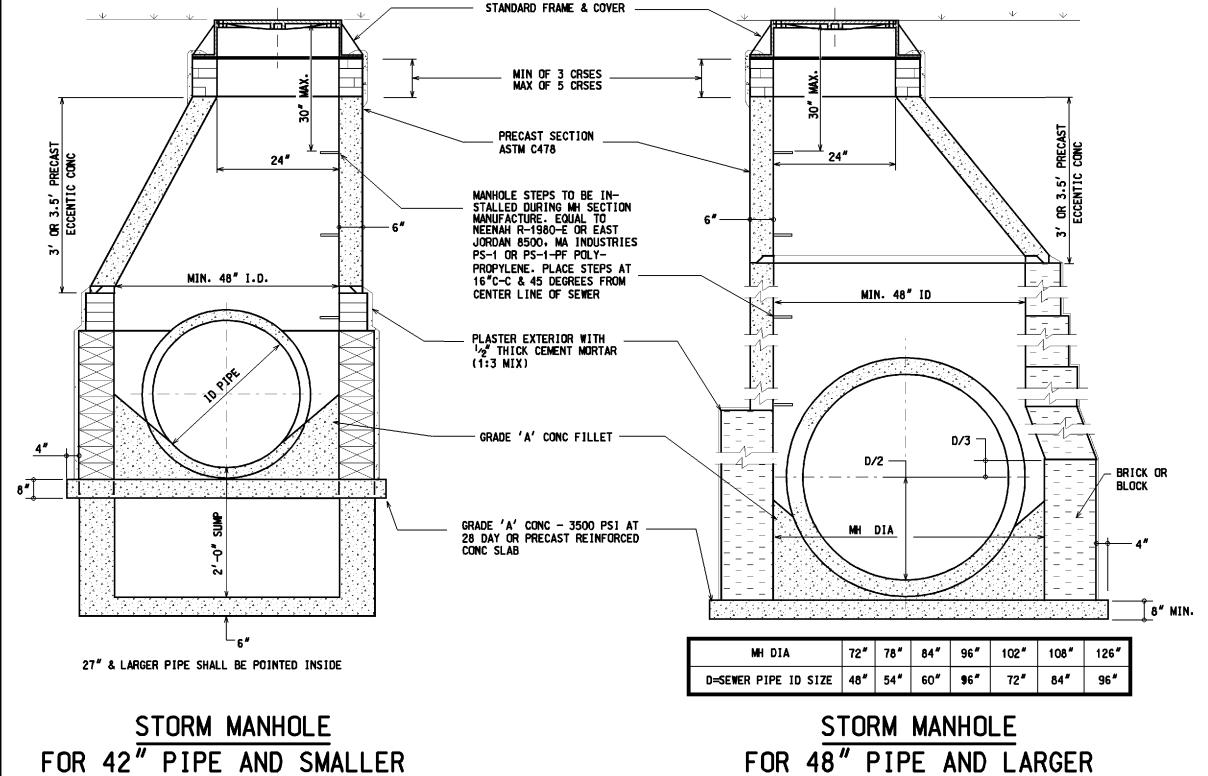


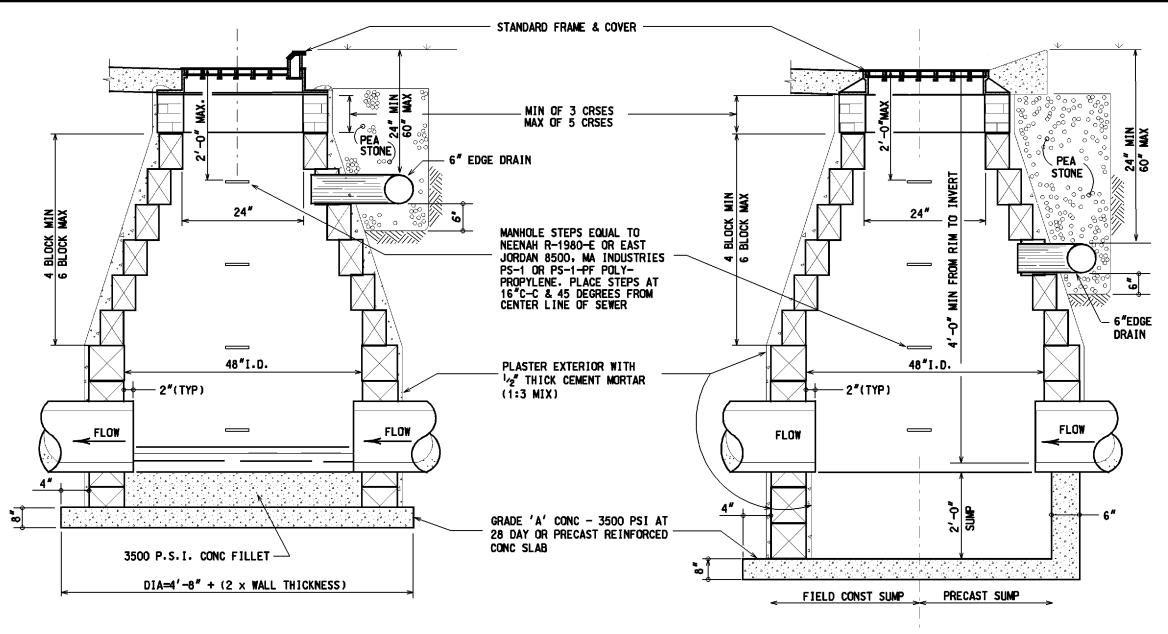


FRAMES AND COVERS



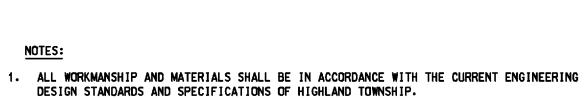
END SECTION AND BAR SCREEN DETAIL INCLUDING RIP-RAP



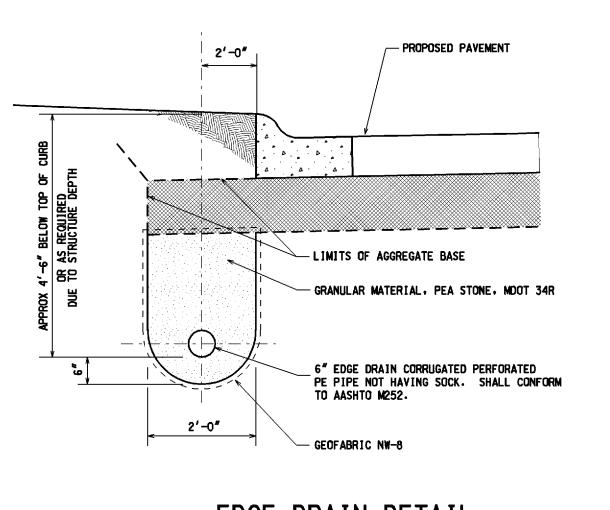




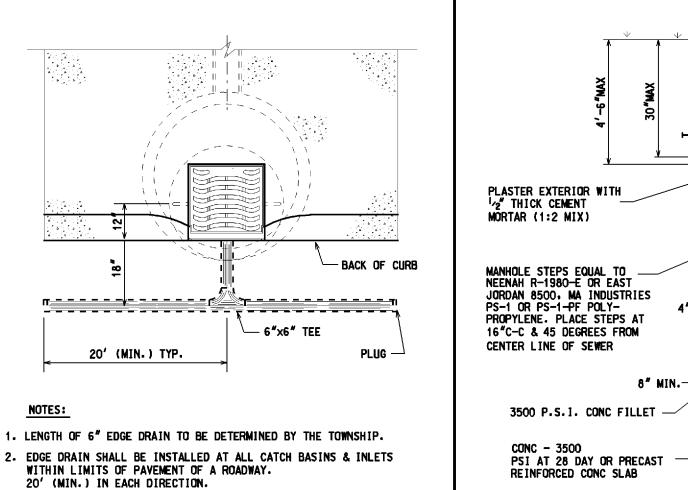
TYPE "B" CATCH BASIN



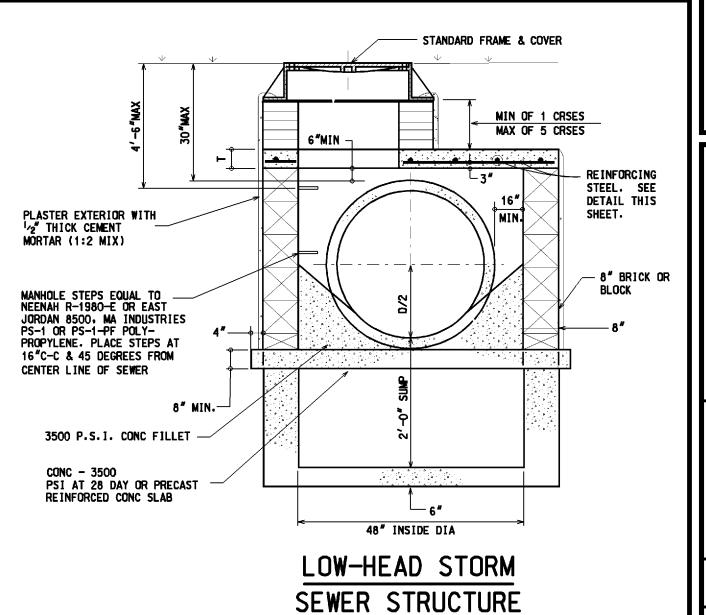
- 2. IT SHALL BE THE OWNER'S ENGINEER AND CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES.
- 3. ALL SEWER TRENCHES UNDER THE 45 DEGREE ZONE OF INFLUENCE LINE OF EXISTING OR PROPOSED PAVEMENTS, BIKE PATHS, SIDEWALKS OR DRIVE APPROACHES SHALL BE BACKFILLED WITH MDOT CLASS 11 SAND COMPACTED TO AT LEAST 95% OF MAXIMUM UNIT WEIGHT.
- 4. ALL STORM SEWER SHALL BE INSTALLED ON CLASS "B" BEDDING OR BETTER.
- 5. JOINTS FOR STORM SEWER SHALL BE PREMIUM JOINTS (TONGUE AND GROOVE WITH RUBBER GASKETS).
- 6. LEAD MATERIAL SHALL BE 4" DIA. (MIN.) PVC SCHEDULE 40 OR SDR 23.5. LEAD CONNECTIONS MAY ONLY BE AT STRUCTURES.
- 7. CONTACT THE TOWNSHIP ENGINEER 48 HOURS PRIOR TO STORM SEWER INSTALLATION TO SCHEDULE OBSERVATION. FULL TIME OBSERVATION IS REQUIRED FOR ALL UNDERGROUND STORM SEWER AND LEACHING SYSTEM CONSTRUCTION. CONTACT MICHAEL DARGA WITH HUBBELL, ROTH & CLARK, INC. 248-454-6532.
- 8. BEFORE YOU DIG CALL MISS DIG AT 1-800-482-7171.
- 9. ALL MORTAR AND CONCRETE WORK SHALL BE PROTECTED FROM FREEZING (40° F. AND FALLING) FOR A MINIMUM OF 48 HOURS.
- 10. PIPE FOR STORM SEWERS WITHIN THE PUBLIC ROAD RIGHT-OF-WAY OR PRIVATE ROAD EASEMENT SHALL BE RCP, C-76, CLASS IV OR V RCP.
- 11. DOUBLE WALLED HDPE MEETING THE REQUIREMENTS OF ASTM F2306.



EDGE DRAIN DETAIL



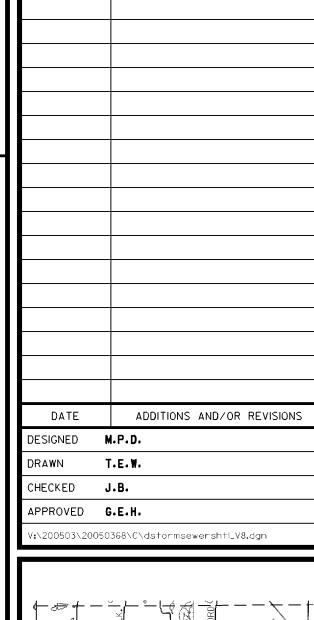
6" EDGE DRAIN







/ELL, MICHIGAN 488
PHONE: (248) 454–6300
DIRECT PHONE: (517) 552–9199
FAX: (517) 552–6099
WEB SITE: http://www.hrc-engr.com



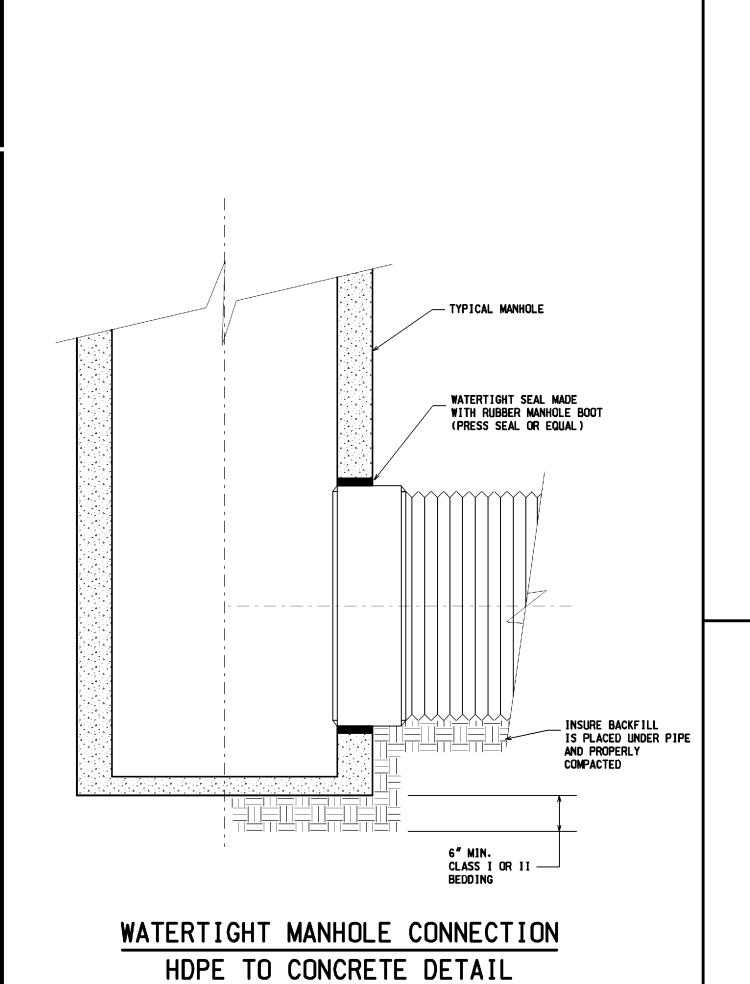


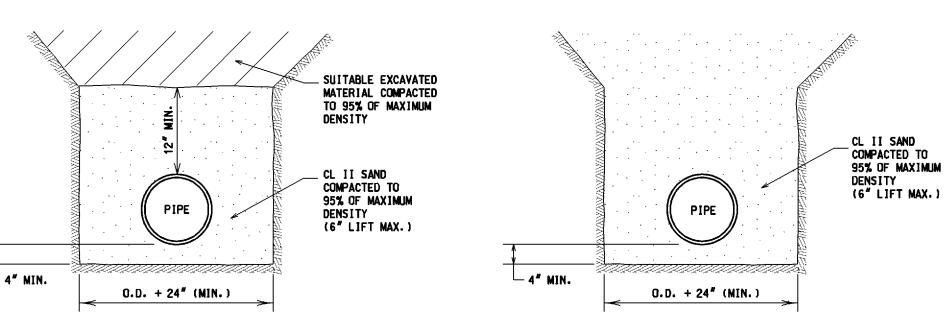
HIGHLAND TOWNSHIP

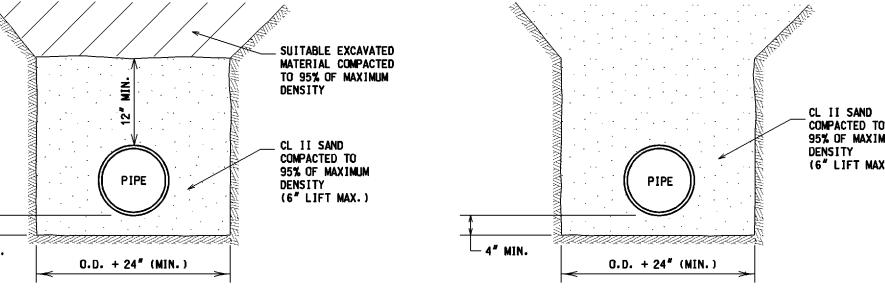
STORM SEWER DETAILS

| HRC JOB NO. | SCALE | | |
|----------------|-------|------|----|
| 20050368 | | NONE | |
| DATE | SHEET | 4 | |
| SEPTEMBER 2005 | NO. | 1 | ٥. |

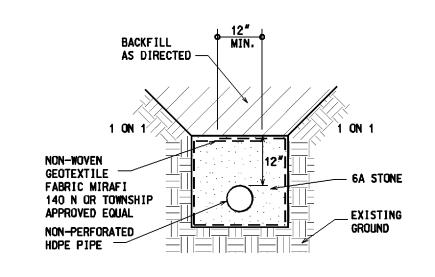
ℚ2005 Hubbell, Roth and Clark, [nc. All Rights Reserved









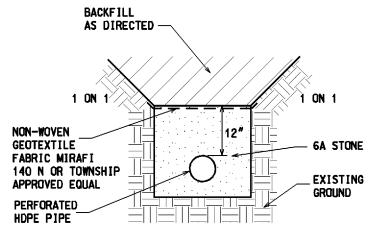


HDPE PIPE TRENCH DETAIL

FOR DETENTION SYSTEMS

WITHOUT GROUNDWATER

RECHARGE





HDPE PIPE TRENCH DETAIL FOR DETENTION/RETENTION SYSTEMS WITH GROUNDWATER RECHARGE

Hubbell, Roth & Clark, Inc. 105 W. GRAND RIVER AVE. HOWELL, MICHIGAN DIRECT PHONE: (517) 552-9199

FAX: (517) 552-6099 WEB SITE: http://www.hrc-engr.com

ADDITIONS AND/OR REVISIONS

DESIGNED M.P.D.

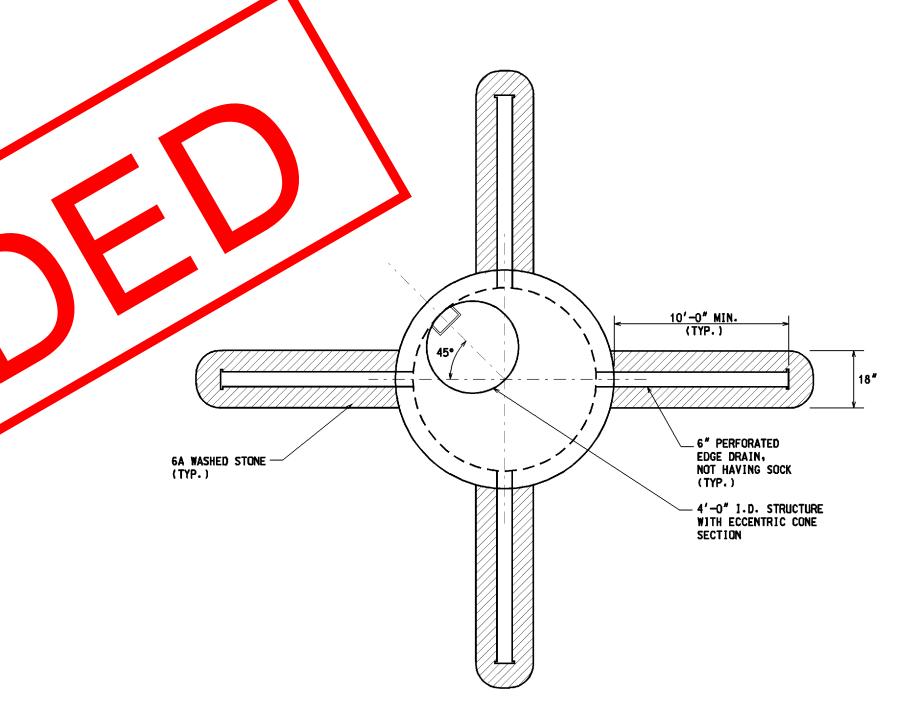
APPROVED G.E.H.

\200503\20050368\C\dstormsewersht2_V8.dgr

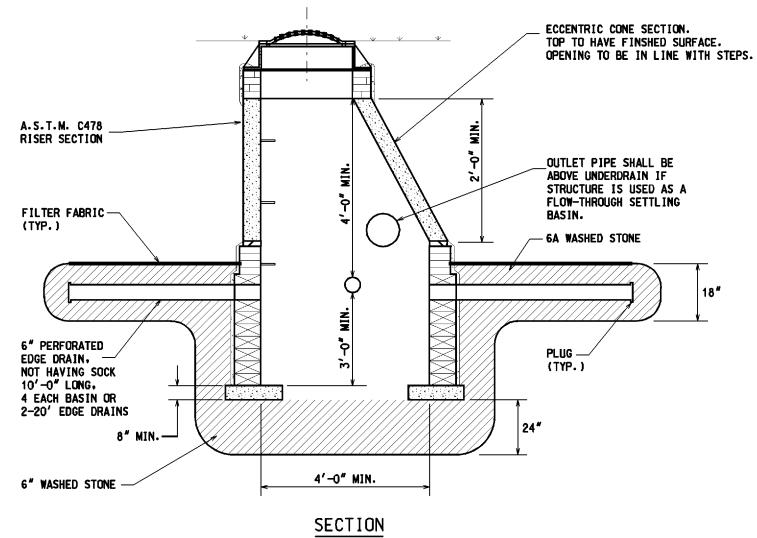
CHECKED J.B.

BEDDING DETAIL - TRENCH B

- 1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT ENGINEERING
- 2. IT SHALL BE THE OWNER'S ENGINEER AND CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES.
- 3. ALL SEWER TRENCHES UNDER THE 45 DEGREE ZONE OF INFLUENCE LINE OF EXISTING OR PROPOSED PAVEMENTS, BIKE PATHS, SIDEWALKS OR DRIVE APPROACHES SHALL BE BACKFILLED WITH MOOT CLASS II SAND COMPACTED TO AT LEAST 95% OF MAXIMUM UNIT WEIGHT.
- 4. ALL STORM SEWER SHALL BE INSTALLED ON CLASS "B" BEDDING OR BETTER.
- 5. JOINTS FOR STORM SEWER SHALL BE PREMIUM JOINTS (TONGUE AND GROOVE WITH RUBBER GASKET
- 6. LEAD MATERIAL SHALL BE 4" DIA. (MIN.) PVC SCHEDULE 40 OR SDR 23.5. LEAD CONNE TIONS MAY ONLY BE AT STRUCTURES.
- 7. CONTACT THE TOWNSHIP ENGINEER 48 HOURS PRIOR TO STORM SEWER INSTALLATION TO SCHEDULE OBSERVATION, FULL TIME OBSERVATION IS REQUIRED FOR ALL UNDERGREENED STORM SEWER AND LEACHING SYSTEM CONSTRUCTION. CONTACT MICHAEL DARGA WITH HE SELL, ROTH & CLARK
- 8. BEFORE YOU DIG CALL MISS DIG AT 1-800-482-7171
- 9. ALL MORTAR AND CONCRETE WORK SHALL BE PROTECTED FROM FREEZING FOR A MINIMUM OF 48 HOURS.
- 10. PIPE FOR STORM SEWERS WITHIN THE PUBLIC ROAD RIGHT-OF-WAY SHALL BE RCP, C-76, CLASS V OR V RCP.
- 11. DOUBLE WALLED HOPE MEETING THE REQUIREMENT OF ASTM F



PLAN VIEW



STANDARD LEACHING BASIN



DESIGN STANDARDS

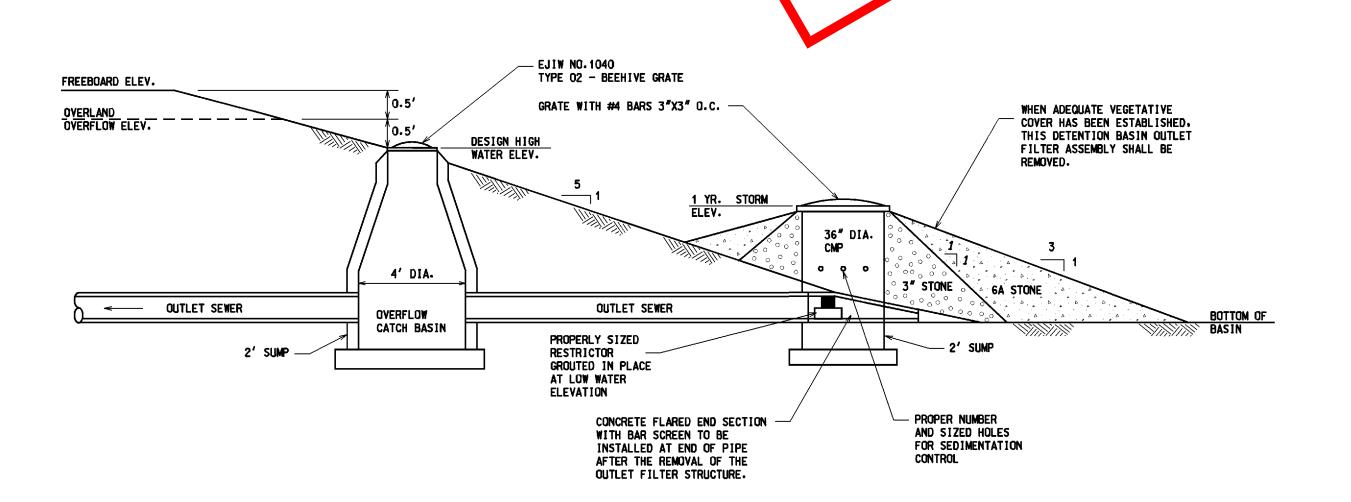
HIGHLAND TOWNSHIP

HIGHLAND TOWNSHIP

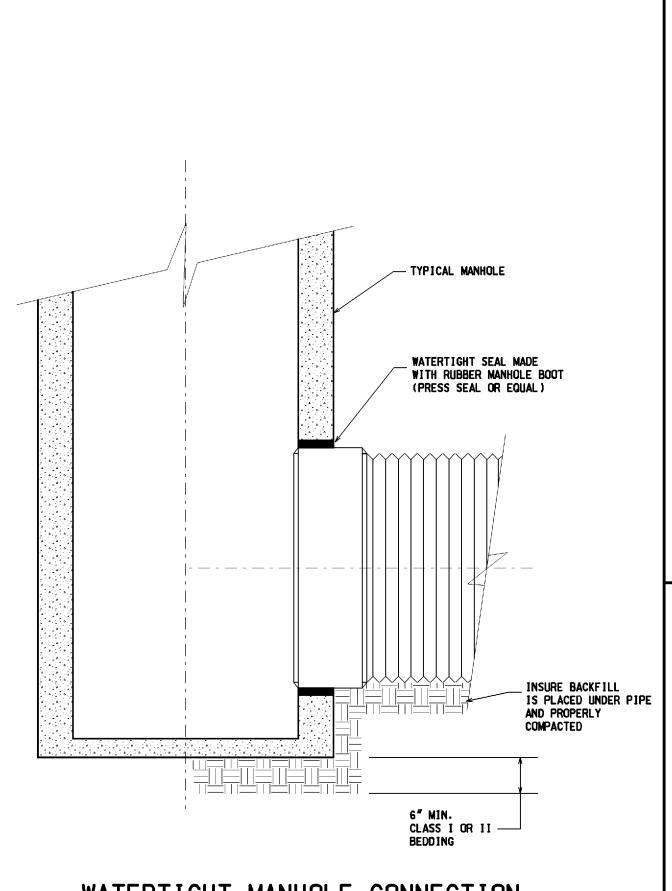
STORM SEWER DETAILS

| | | | | _ |
|----------------|-------|------|----|---|
| HRC JOB NO. | SCALE | | | |
| 20050368 | | NONE | | |
| DATE | SHEET | 2 | | |
| SEPTEMBER 2005 | NO. | | OF | 2 |

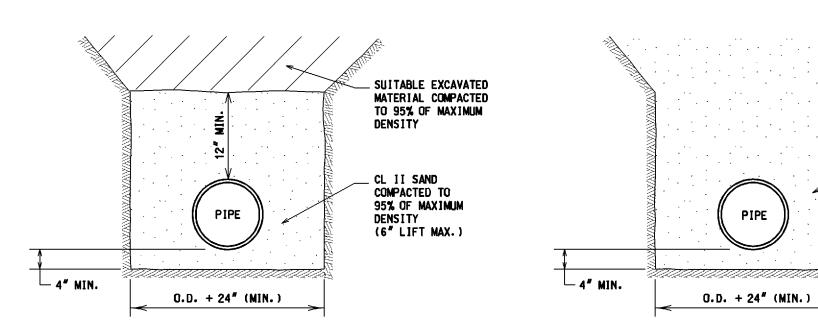
© 2005 Hubbell, Roth and Clark, Inc. All Rights Reserved



DETENTION POND OUTLET STRUCTURE DETAIL



WATERTIGHT MANHOLE CONNECTION
HDPE TO CONCRETE DETAIL



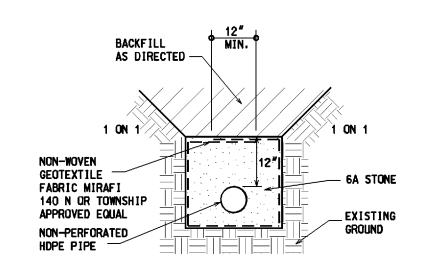
BEDDING DETAIL - TRENCH B

BEDDING DETAIL — TRENCH A

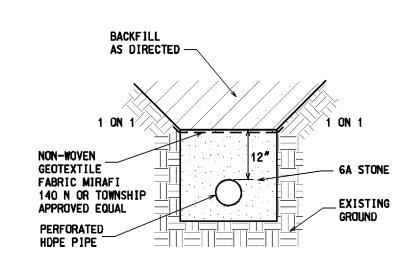
(REQUIRED FOR INSTALLATION UNDER PAVEMENT OR WITHIN THE INFLUENCE OF ROAD BED.)

CL II SAND
COMPACTED TO
95% OF MAXIMUM

DENSITY (6" LIFT MAX.)



HDPE PIPE TRENCH DETAIL
FOR DETENTION SYSTEMS
WITHOUT GROUNDWATER
RECHARGE



HDPE PIPE TRENCH DETAIL

FOR DETENTION/RETENTION SYSTEMS

WITH GROUNDWATER

RECHARGE



HRC

Hubbell, Roth & Clark, Inc.

CONSULTING ENGINEERS

105 W. GRAND RIVER AVE.

HOWELL, MICHIGAN 48

PHONE: (248) 454–6300

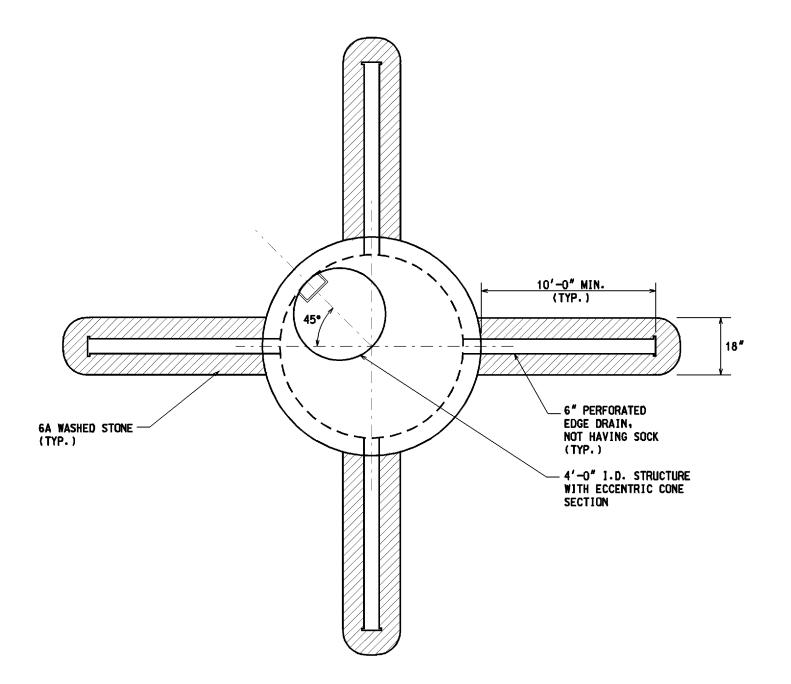
DIRECT PHONE: (517) 552–9199

FAX: (517) 552–6099

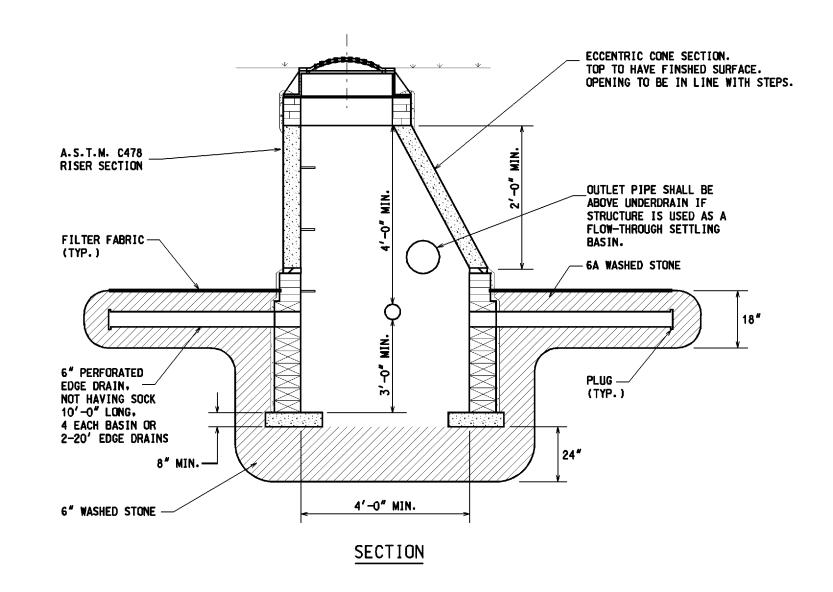
WEB SITE: http://www.hrc-engr.com

NOTES:

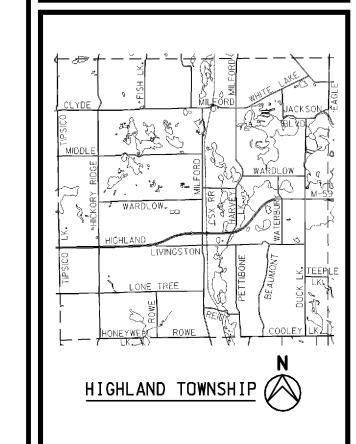
- 1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT ENGINEERING
- 2. IT SHALL BE THE OWNER'S ENGINEER AND CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXISTENCE
- 3. ALL SEWER TRENCHES UNDER THE 45 DEGREE ZONE OF INFLUENCE LINE OF EXISTING OR PROPOSED PAYEMENTS, BIKE PATHS, SIDEWALKS OR DRIVE APPROACHES SHALL BE BACKFILLED WITH MOOT CLASS II SAND COMPACTED TO AT LEAST 95% OF MAXIMUM UNIT WEIGHT.
- 4. ALL STORM SEWER SHALL BE INSTALLED ON CLASS "B" BEDDING OR BETTER.
- 5. JOINTS FOR STORM SEWER SHALL BE PREMIUM JOINTS (TONGUE AND GROOVE WITH RUBBER GASKETS).
- 6. LEAD MATERIAL SHALL BE 4" DIA. (MIN.) PVC SCHEDULE 40 OR SDR 23.5. LEAD CONNECTIONS MAY ONLY BE AT STRUCTURES.
- 7. CONTACT THE TOWNSHIP ENGINEER 48 HOURS PRIOR TO STORM SEWER INSTALLATION TO SCHEDULE OBSERVATION. FULL TIME OBSERVATION IS REQUIRED FOR ALL UNDERGROUND STORM SEWER AND LEACHING SYSTEM CONSTRUCTION. CONTACT MICHAEL DARGA WITH HUBBELL, ROTH & CLARK, INC. 248-45-532
- 8. BEFORE YOU DIG CALL MISS DIG AT 1-800-482-7171.
- 9. ALL MORTAR AND CONCRETE WORK SHALL BE PROTECTED FROM FREEZING (40° F. AND FALLING) FOR A MINIMUM OF 48 HOURS.
- 10. PIPE FOR STORM SEWERS WITHIN THE PUBLIC ROAD RIGHT-OF-WAY OR PRIVATE ROAD EASEMENT SHALL BE RCP, C-76, CLASS IV OR V RCP.
- 11. DOUBLE WALLED HOPE MEETING THE REQUIREMENTS OF ASTM F2306.



PLAN VIEW



STANDARD LEACHING BASIN



\200503\20050368\C\dstormsewersht2_V8.dgr

ADDITIONS AND/OR REVISIONS

DESIGNED M.P.D.

APPROVED G.E.H.

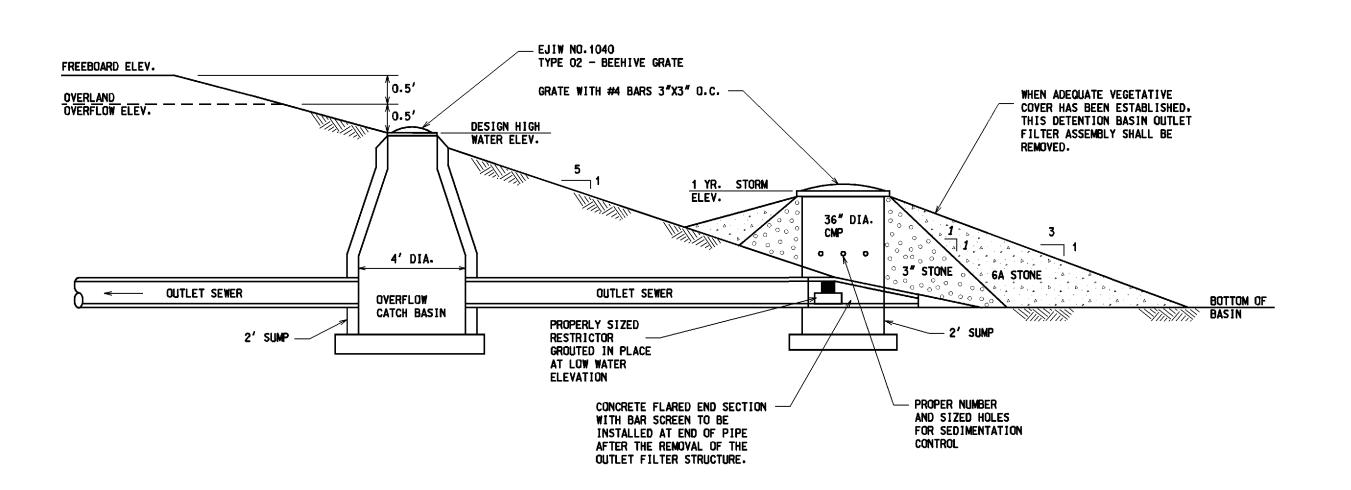
CHECKED J.B.

HIGHLAND TOWNSHIP DESIGN STANDARDS

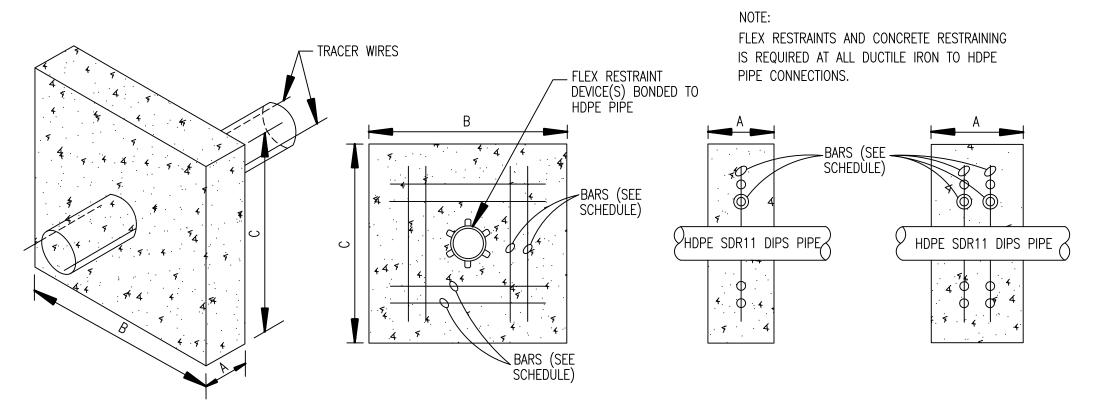
STORM SEWER DETAILS

| | DATE SEPTEMBER 2005 | SHEET NO. 2 |
|---|---------------------|-------------|
| ı | 20050368 | NONE |
| ı | HRC JOB NO. | SCALE |
| | | |

© 2005 Hubbell, Roth and Clark, Inc. All Rights Reserved



DETENTION POND OUTLET STRUCTURE DETAIL



HDPE SDR11 DIPS PIPE HDPE SDR11 DIPS PIPE

SINGLE FACE RESTEEL® DOUBLE FACE RESTEEL®

HDPE RESTRAINING RESTEEL

NOT TO SCALE

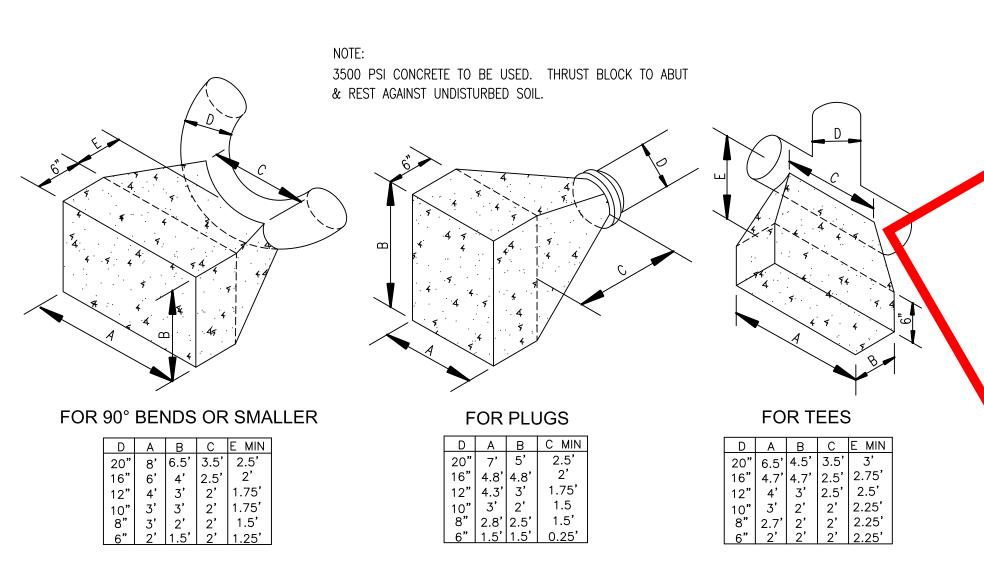
RESTRAINING BLOCK DIMENSIONS

HDPE RESTRAINING BLOCK RESTRAINTS

DOUBLE ①

SINGLES

NOT TO SCALE



HDPE THRUST BLOCK DETAILS

NOT TO SCALE

| HDPE SDR11 DIPS RESTRAINING BLOCK SCHEDULE | | | | | | | |
|--|--------|----------|----------|----------------|--------------|-------------|--|
| HDPE SDR11 DIPS SIZE | A | В | С | EFFECTIVE AREA | # RESTRAINTS | REINFORCING | |
| 4" | 1 FT | 2 FT | 2 FT | 4.0 S.F. | 1 | 4 #6(S) | |
| 6" | 1 FT | 3 FT | 3 FT | 9.0 S.F. | 2 | 4 #6(S) | |
| 8" | 1 FT | 3.75 FT | 3.75 FT | 14.0 S.F. | 2 | 4 #6(S) | |
| 10" | 1 FT | 4.75 FT | 4.75 FT | 22.6 S.F. | 3 | 8 #4 S | |
| 12" | 1.5 FT | 5.5 FT | 5.5 FT | 30.3 S.F. | 4 | 8 #6 S | |
| 14" | 1.5 FT | 6.33 FT | 6.33 FT | 40.0 S.F. | 5 | 8 #6 S | |
| 16" | 2 FT | 7.25 FT | 7.25 FT | 52.6 S.F. | 6 | 16 #6 D | |
| 18" | 2 FT | 8.1 FT | 8.1 FT | 65.6 S.F. | 7 | 16 #6 D | |
| 20" | 2 FT | 9 FT | 9 FT | 81.0 S.F. | 9 | 16 #6 D | |
| 24" | 2 FT | 10.75 FT | 10.75 FT | 115.6 S.F. | 14 D | 16 #6 D | |
| 30" | 2.5 FT | 13.25 FT | 13.25 FT | 175.6 S.F. | 19(D) | 16 #6 D | |
| 36" | 2.5 FT | 15.9 FT | 15.9 FT | 252.8 S.F. | 28(D) | 16 #6 D | |

- 1. Restraining blocks shall have a minimum of 3.0' of cover.
- 2. Restraining block dimensions "B" and "C" may be changed due to depth of cover limitations provided the effective area is maintained.

HDPE Water pain Note

- 1. All HDPE vatermain shall be D.I.P.S. SDR 11 manufactured from a PE 4710 resin. HDPE pipe shall be maked with a permanently co-extruded blue stripe.
- 2. HDPE fittings shall be manufactured from a PE 4710 resin.
- B. A HDPE water services shall be SDR 9.
- 4 Electrofusion equipment shall be calibrated and certified per the pipe manufacturer's requirements.
- 5. Concrete restraining blocks and thrust blocks shall be constructed of minimum 3,500 p.s.i. concrete.
- 6. All HDPE piping shall be installed with two tracer/locator wires insulated with high molecular weight polyethylene (HMWPE) specifically for use in direct burial applications.
- 7. Tracer wires shall be 6-gauge solid or stranded annealed or hard copper per UL83 (Thermoplastic Insulated Wires and Cables) and ASTM requirements including ASTM B1 (Standard Specification for Hard-Drawn Copper Wire), B3 (Standard Specification for Soft or Annealed Copper Wire), and B8 (Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft).
- 8. Tracer wire shall be insulated. Insulation shall be for 600-volt applications and shall be a minimum of 45 mils thick. The minimum thickness at any point shall not be less than 90% of the specified average thickness in compliance with UL 83. The tracer wire shall have the UL 83 specification shall be clearly marked on the wire insulation. The insulation shall be colored blue for watermain applications.
- 9. Two tracer wires shall be attached to the watermain pipe at five foot intervals or as approved by the Engineer. Attachment to pipe shall be made with plastic cable ties or equivalent. The use of tape is not approved. Tracer wires shall be checked for continuity prior to placing the watermain into service
- 10. HDPE pipe transitions to ductile iron pipe shall be performed using fused-on mechanical joint adapters or flange adapters. Mega-lugs or Mega-lugs combined with internal pipe stiffeners are not approved.
- 11. Hydrostatic testing shall be per AWWA standards (ASTM F2164). Testing shall be performed after the initial expansion phase and after the system has stabilized. Testing pressure shall be 150 p.s.i. held for 2 hours.

HDPE Watermain Allowable Losses for 2 Hour Test Period

| Pipe <u>Dia.</u> | Pipe Length | <i>\(\)</i> | Allowable Water Loss Per Ft. | | Total Loss Allowed |
|---------------------|----------------|--------------|---------------------------------|---|-----------------------|
| 3" | | x | 0.15 | = | |
| 4" | | x | 0.25 | = | |
| 6" | | x | 0.60 | = | |
| 8" | | X | 1.00 | = | |
| 10" | | x | 1.30 | = | |
| 12" | | x | 2.30 | = | |
| 14" | | X | 2.80 | = | |
| 16" | | X | 3.30 | = | |
| 18" | | X | 4.30 | = | |
| 20" | | X | 5.50 | = | |
| 24" | | X | 8.90 | = | |

HDPE WATER MAIN STANDARD DETAILS

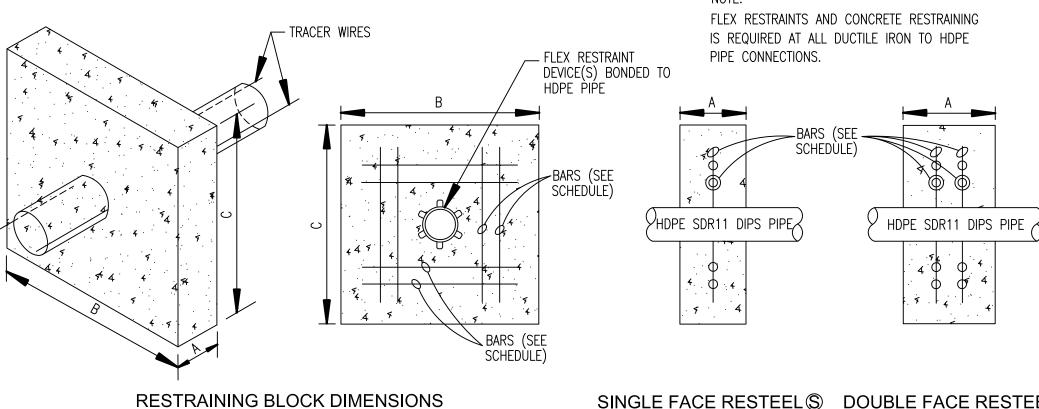
| Data | Jourt | e / Jource | Date. NA | | |
|-----------|------------|---------------|---------------|------------------------------|---|
| Rev No | Rev. By | Rev. Date: | Description: | | |
| 1 | KB | 02/14/18 | MARKUPS PER G | . APPEL | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| OR | IG. D | ATE: | 01/01/01 | | 0 |
| SCALE: | | NONE | GDWRC | | |
| DE | SIGN | ED BY: | OCDC | WATER RESOURCES COMMISSIONER | |
| | | | | | |

DRAWN BY: OCDC Mapp

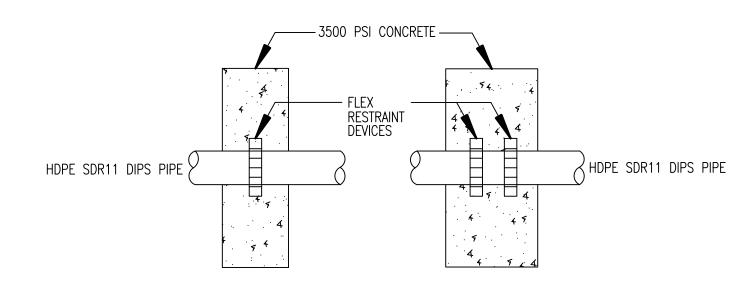
ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48328-1907

MMISSIONER
Jim Nash

SHEET NO.:
4 OF 5



SINGLE FACE RESTEEL® DOUBLE FACE RESTEEL®



SINGLES

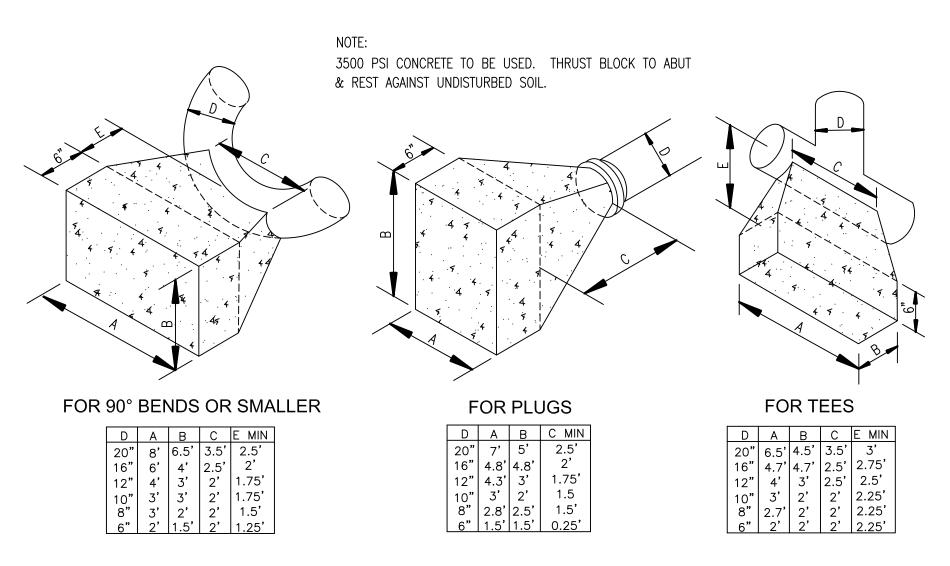
DOUBLE ①

NOT TO SCALE

HDPE RESTRAINING BLOCK RESTRAINTS

HDPE RESTRAINING RESTEEL

NOT TO SCALE



HDPE THRUST BLOCK DETAILS NOT TO SCALE

| HDPE SDR11 DIPS SIZE | A | В | C | EFFECTIVE AREA | # RESTRAINTS | REINFORCING |
|----------------------|--------|----------|----------|----------------|--------------|-------------|
| 4" | 1 FT | 2 FT | 2 FT | 4.0 S.F. | 1 | 4 #6 S |
| 6" | 1 FT | 3 FT | 3 FT | 9.0 S.F. | 2 | 4 #6(S) |
| 8" | 1 FT | 3.75 FT | 3.75 FT | 14.0 S.F. | 2 | 4 #6(S) |
| 10" | 1 FT | 4.75 FT | 4.75 FT | 22.6 S.F. | 3 | 8 #4 S |
| 12" | 1.5 FT | 5.5 FT | 5.5 FT | 30.3 S.F. | 4 | 8 #6 S |
| 14" | 1.5 FT | 6.33 FT | 6.33 FT | 40.0 S.F. | 5 | 8 #6(S) |
| 16" | 2 FT | 7.25 FT | 7.25 FT | 52.6 S.F. | 6 | 16 #6 D |
| 18" | 2 FT | 8.1 FT | 8.1 FT | 65.6 S.F. | 7 | 16 #6 D |
| 20" | 2 FT | 9 FT | 9 FT | 81.0 S.F. | 9 | 16 #6 D |
| 24" | 2 FT | 10.75 FT | 10.75 FT | 115.6 S.F. | 14(D) | 16 #6 D |
| 30" | 2.5 FT | 13.25 FT | 13.25 FT | 175.6 S.F. | 19(D) | 16 #6(D) |
| 36" | 2.5 FT | 15.9 FT | 15.9 FT | 252.8 S.F. | 28(D) | 16 #6 D |

cover limitations provided the effective area is maintained.

HDPE Watermain Notes

- 1. All HDPE watermain shall be D.I.P.S. SDR 11 manufactured from a PE 4710 resin. HDPE pipe shall be marked with a permanently co-extruded blue stripe.
- 2. All HDPE fittings shall be manufactured from a PE 4710 resin.
- 3. All HDPE water services shall be SDR 9.
- 4. Electrofusion equipment shall be calibrated and certified per the pipe manufacturer's requirements.
- 5. Concrete restraining blocks and thrust blocks shall be constructed of minimum 3,500 p.s.i. concrete.
- 6. All HDPE piping shall be installed with two tracer/locator wires insulated with high molecular weight polyethylene (HMWPE) specifically for use in direct burial applications.
- 7. Tracer wires shall be 6-gauge solid or stranded annealed or hard copper per UL83 (Thermoplastic Insulated Wires and Cables) and ASTM requirements including ASTM B1 (Standard Specification for Hard-Drawn Copper Wire), B3 (Standard Specification for Soft or Annealed Copper Wire), and B8 (Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft).
- 8. Tracer wire shall be insulated. Insulation shall be for 600-volt applications and shall be a minimum of 45 mils thick. The minimum thickness at any point shall not be less than 90% of the specified average thickness in compliance with UL 83. The tracer wire shall have the UL 83 specification shall be clearly marked on the wire insulation. The insulation shall be colored blue for watermain applications.
- 9. Two tracer wires shall be attached to the watermain pipe at five foot intervals or as approved by the Engineer. Attachment to pipe shall be made with plastic cable ties or equivalent. The use of tape is not approved. Tracer wires shall be checked for continuity prior to placing the watermain into service
- 10. HDPE pipe transitions to ductile iron pipe shall be performed using fused-on mechanical joint adapters or flange adapters. Mega-lugs or Mega-lugs combined with internal pipe stiffeners are not approved.
- 11. Hydrostatic testing shall be per AWWA standards (ASTM F2164). Testing shall be performed after the initial expansion phase and after the system has stabilized. Testing pressure shall be 150 p.s.i. held for 2 hours.

HDPE Watermain Allowable Losses for 2 Hour Test Period

| Pipe <u>Dia.</u> | Pipe Length | P | Allowable Water Loss Per Ft. | | Total Loss Allowed |
|---------------------|----------------|---|---------------------------------|---|-----------------------|
| 3" | | x | 0.15 | = | |
| 4" | | X | 0.25 | = | |
| 6" | | X | 0.60 | = | |
| 8" | | X | 1.00 | = | |
| 10" | | X | 1.30 | = | |
| 12" | | x | 2.30 | = | |
| 14" | | x | 2.80 | = | |
| 16" | | x | 3.30 | = | |
| 18" | | X | 4.30 | = | |
| 20" | | x | 5.50 | = | |
| 24" | | X | 8.90 | = | |

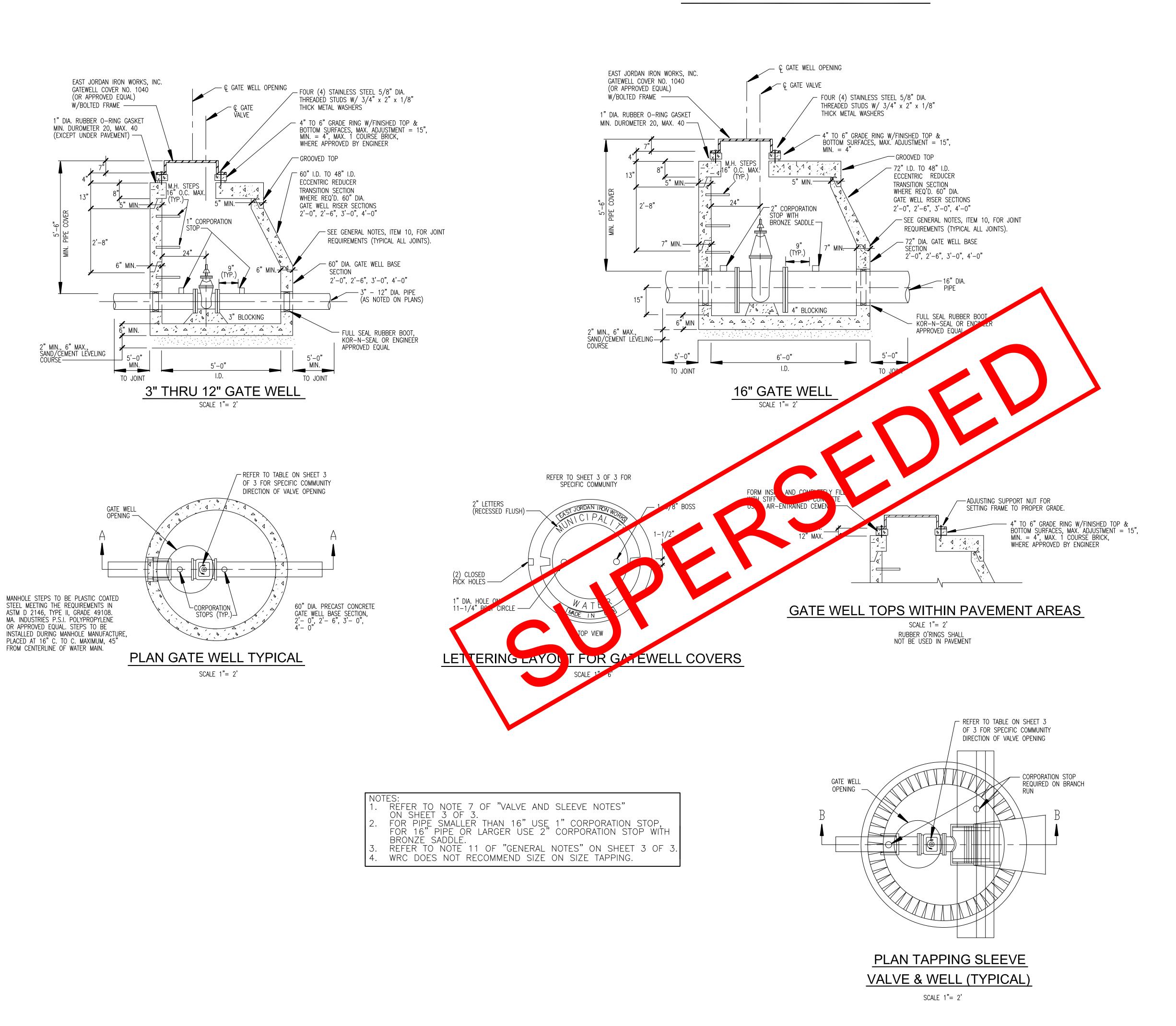
HDPE WATER MAIN STANDARD DETAILS

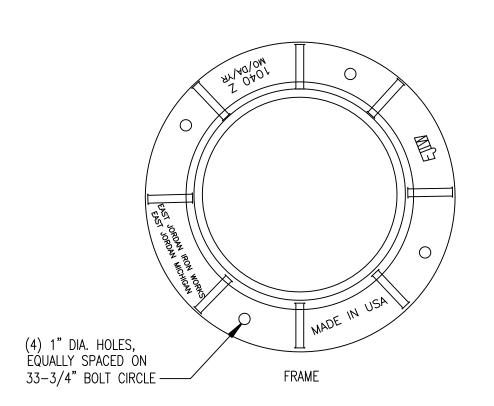
| Data | Sourc | e / Source | Date. N/A | | | | | |
|-----------|------------|---------------|---------------|------------------------------|--------------------------------------|--|--|--|
| Rev No | Rev. By | Rev. Date: | Description: | | | | | |
| 1 | KB | 02/14/18 | MARKUPS PER G | . APPEL | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |
| OR | IG. D | ATE: | 01/01/01 | | ONE PUBLIC WORKS DRIVE, BLDG 95 WEST | | | |
| sc | ALE: | | NONE | WRC | WATERFORD, MICHIGAN 48328-1907 | | | |
| DE | SIGN | ED BY: | OCDC | WATER RESOURCES COMMISSIONER | OUEST NO | | | |

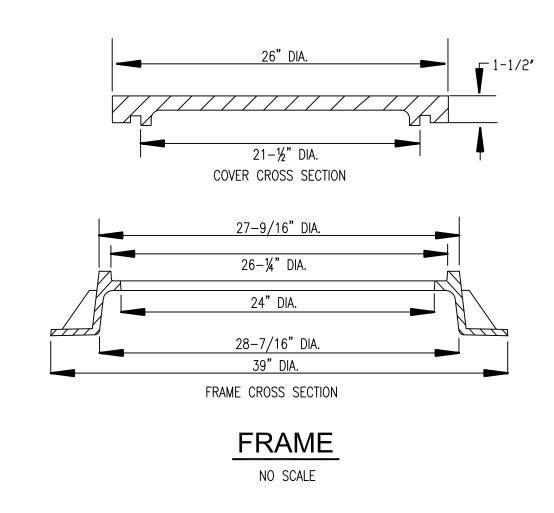
DRAWN BY: OCDC Mapp

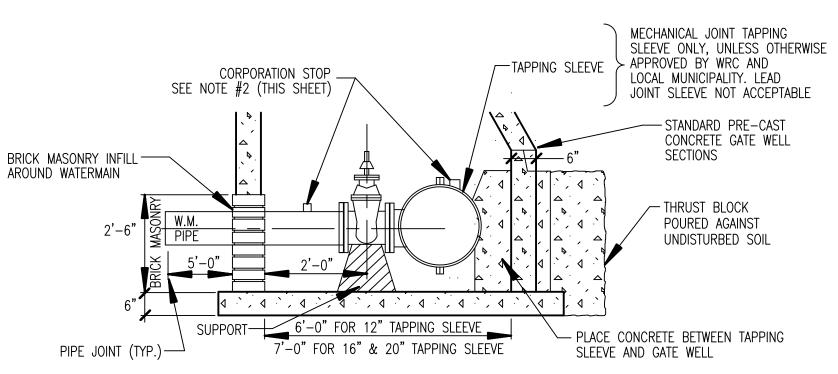
4 OF 5

GATE VALVE & WELL DETAILS









20" x 12", 20" x 8", 16" x 12", 16" x 8", 12" x 8"

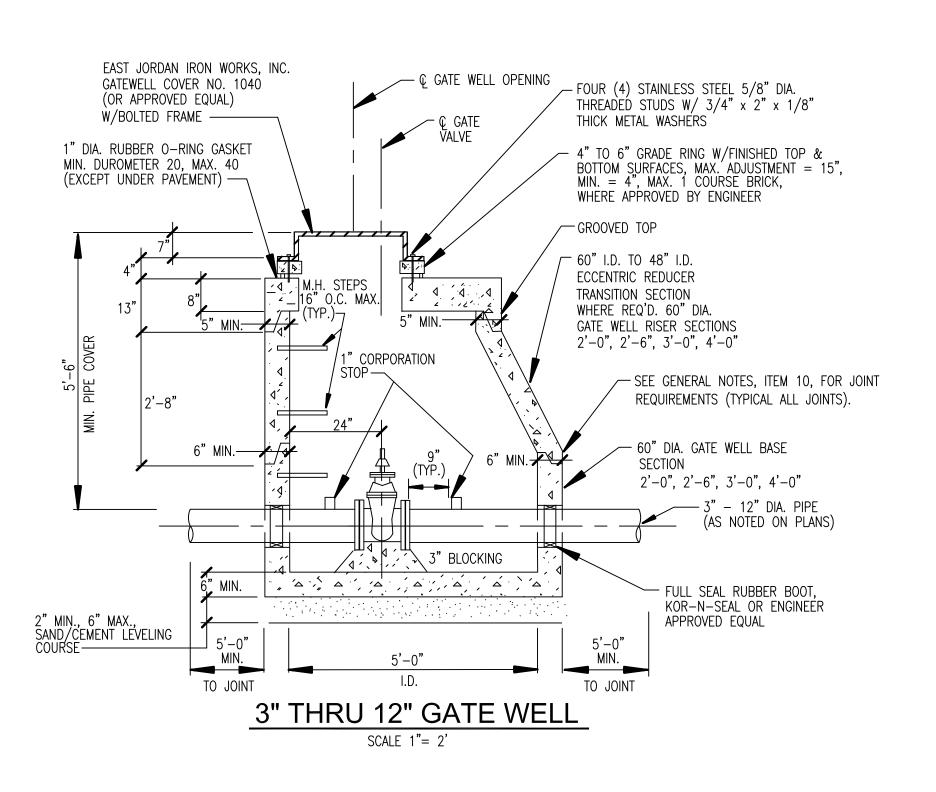
TAPPING SLEEVE, VALVE & WELL

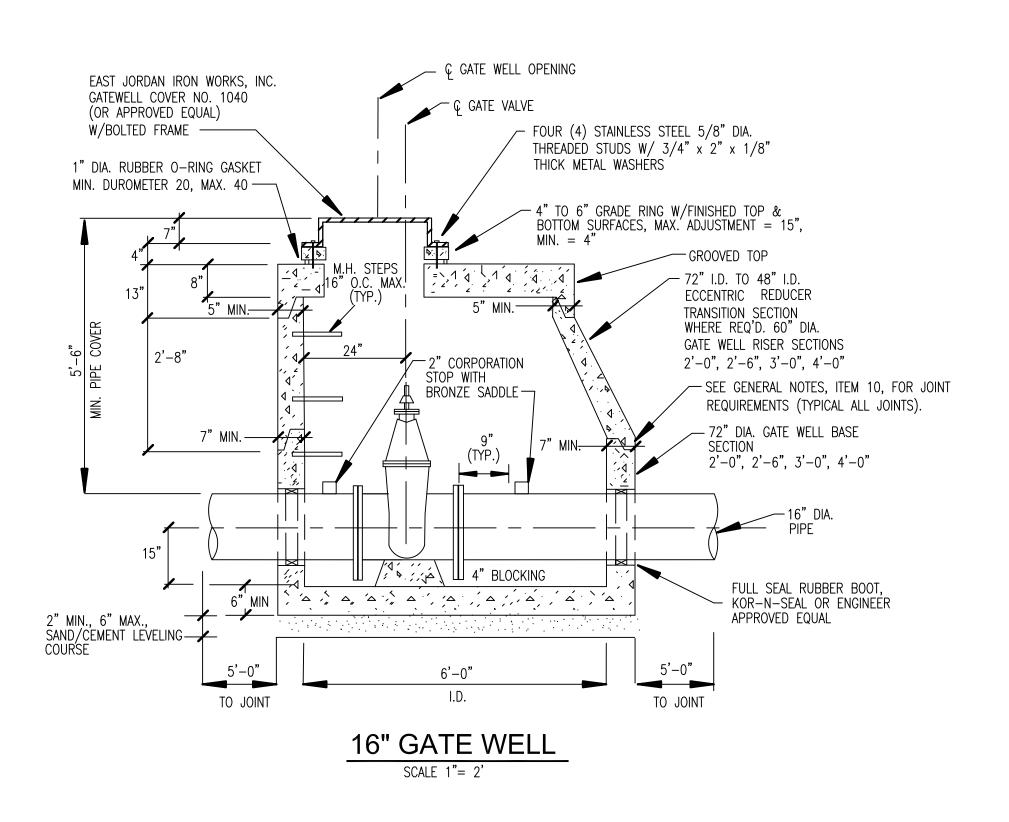
SCALE 1"= 2'

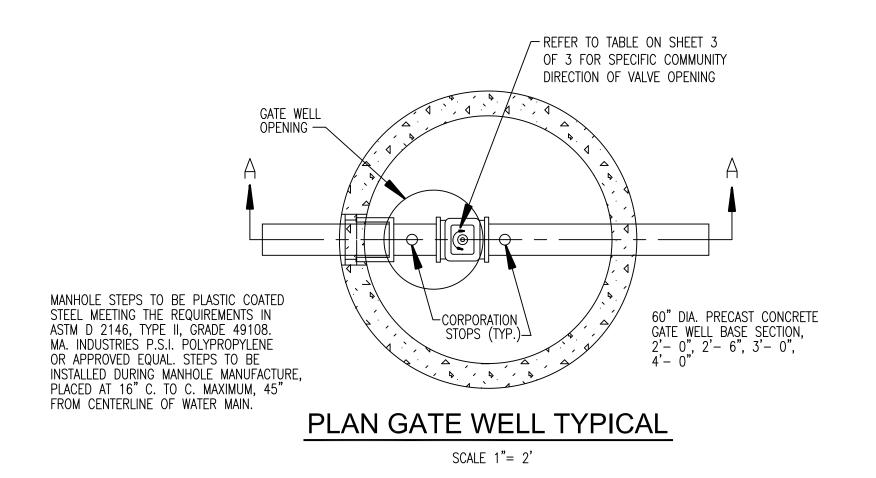
WATER MAIN

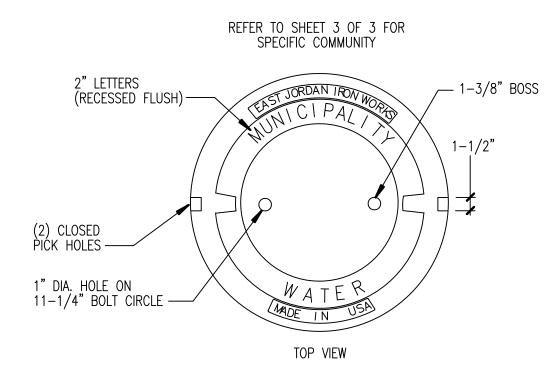
| | STANDARD DETAILS | | | | | | | |
|----------------|------------------|-----------------------------|------------------------------|--|--------------------------------------|--|--|--|
| REVISION BLOCK | | | | | | | | |
| _ | Rev. | e / Source Rev. Date: | Date: N/A Description: | | | | | |
| 1 | DS | 03/15/13 | UPDATE TITLEBLOCK AND ARROWS | | | | | |
| 2 | DS | 07/08/14 | PROPOSED REVISIONS | | | | | |
| 3 | DS | 11/21/14 | PROPOSED CHAI | NGE TO DELETE HOLES FROM GATEWELL COVERS | | | | |
| 4 | KB | 03/19/18 | MARKUPS PER G | . APPEL | | | | |
| OR | IG. D | ATE: | 01/01/01 | MANDO | ONE PUBLIC WORKS DRIVE. BLDG 95 WEST | | | |
| SCALE: | | | NONE | WRC | WATERFORD, MICHIGAN 48328-1907 | | | |
| DESIGNED BY: | | ED BY: | WRC | WATER RESOURCES COMMISSIONER Iim Nash | SHEET NO.: | | | |
| DRA | AWN | BY: W | RC Mapping | jini rush | 1 01 5 | | | |

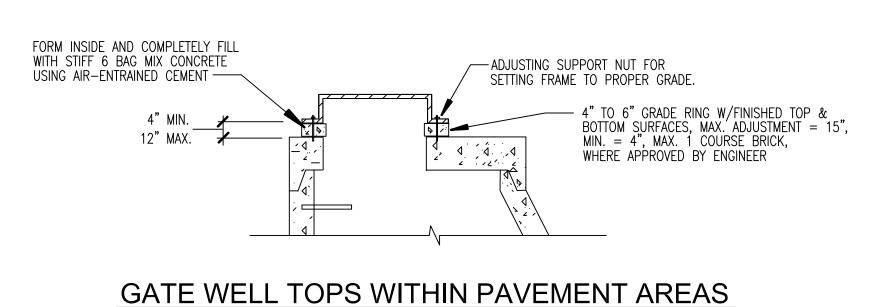
GATE VALVE & WELL DETAILS











SCALE 1"= 2'
RUBBER O'RINGS SHALL
NOT BE USED IN PAVEMENT

LETTERING LAYOUT FOR GATEWELL COVERS

SCALE 1"= 6'

OTES:
REFER TO NOTE 7 OF "VALVE AND SLEEVE NOTES"
ON SHEET 3 OF 3.
FOR PIPE SMALLER THAN 16" USE 1" CORPORATION STOP,
FOR 16" PIPE OR LARGER USE 2" CORPORATION STOP WITH

REFER TO NOTE 11 OF "GENERAL NOTES" ON SHEET 3 OF 3.

WRC DOES NOT RECOMMEND SIZE ON SIZE TAPPING.

BRONZE SADDLE.

REFER TO TABLE ON SHEET 3
OF 3 FOR SPECIFIC COMMUNITY
DIRECTION OF VALVE OPENING

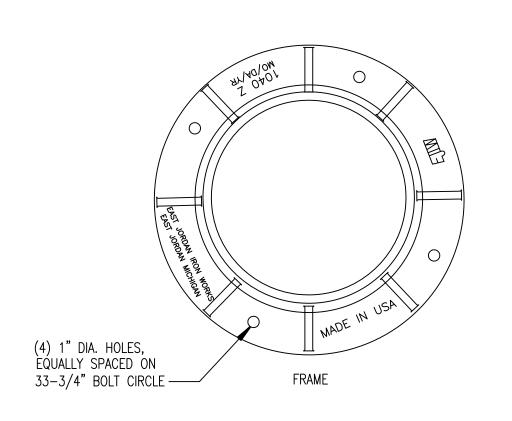
CORPORATION STOP
REQUIRED ON BRANCH
RUN

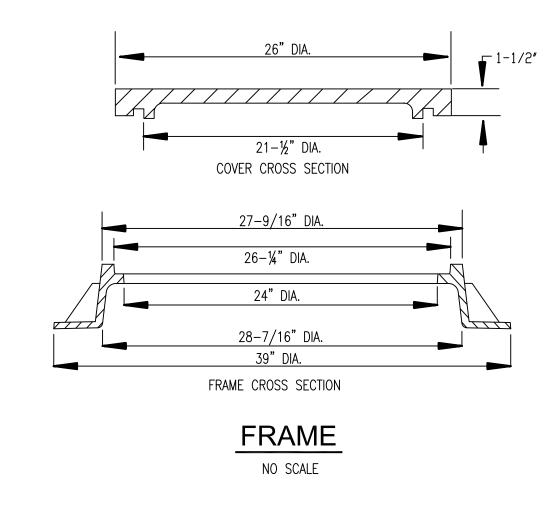
B

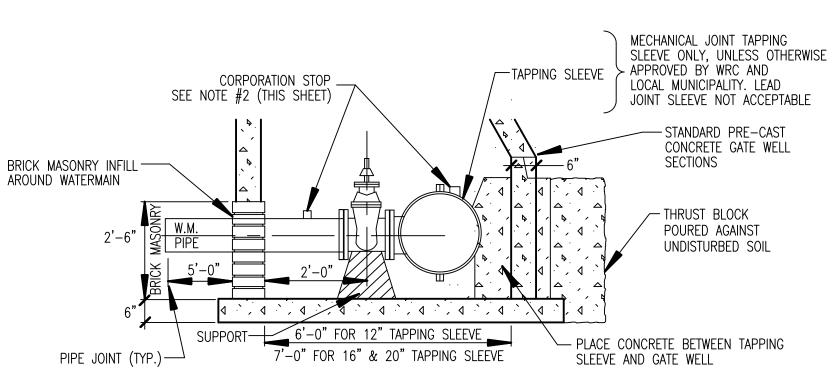
B

PLAN TAPPING SLEEVE
VALVE & WELL (TYPICAL)

SCALE 1"= 2'







20" x 12", 20" x 8", 16" x 12", 16" x 8", 12" x 8"

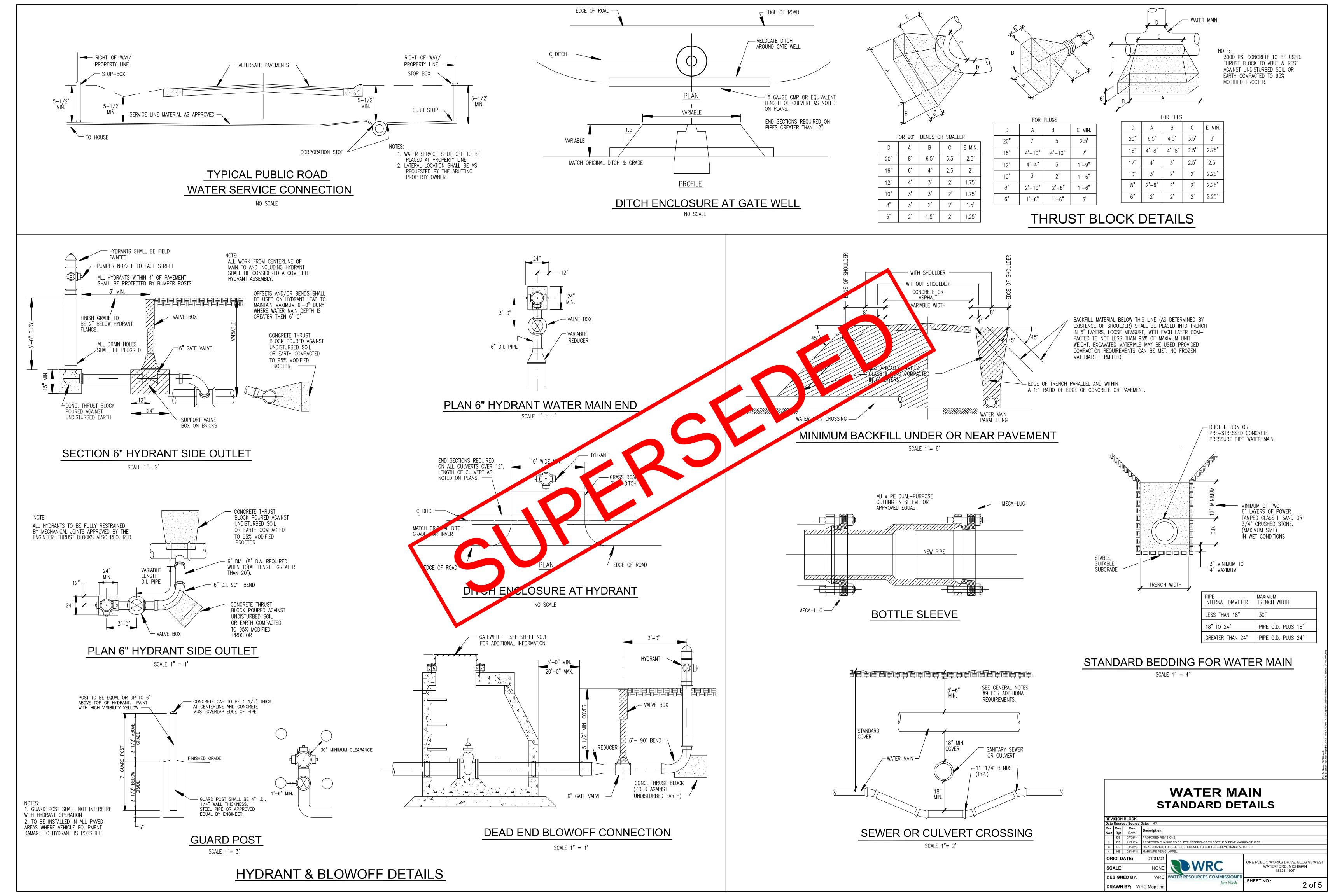
TAPPING SLEEVE, VALVE & WELL

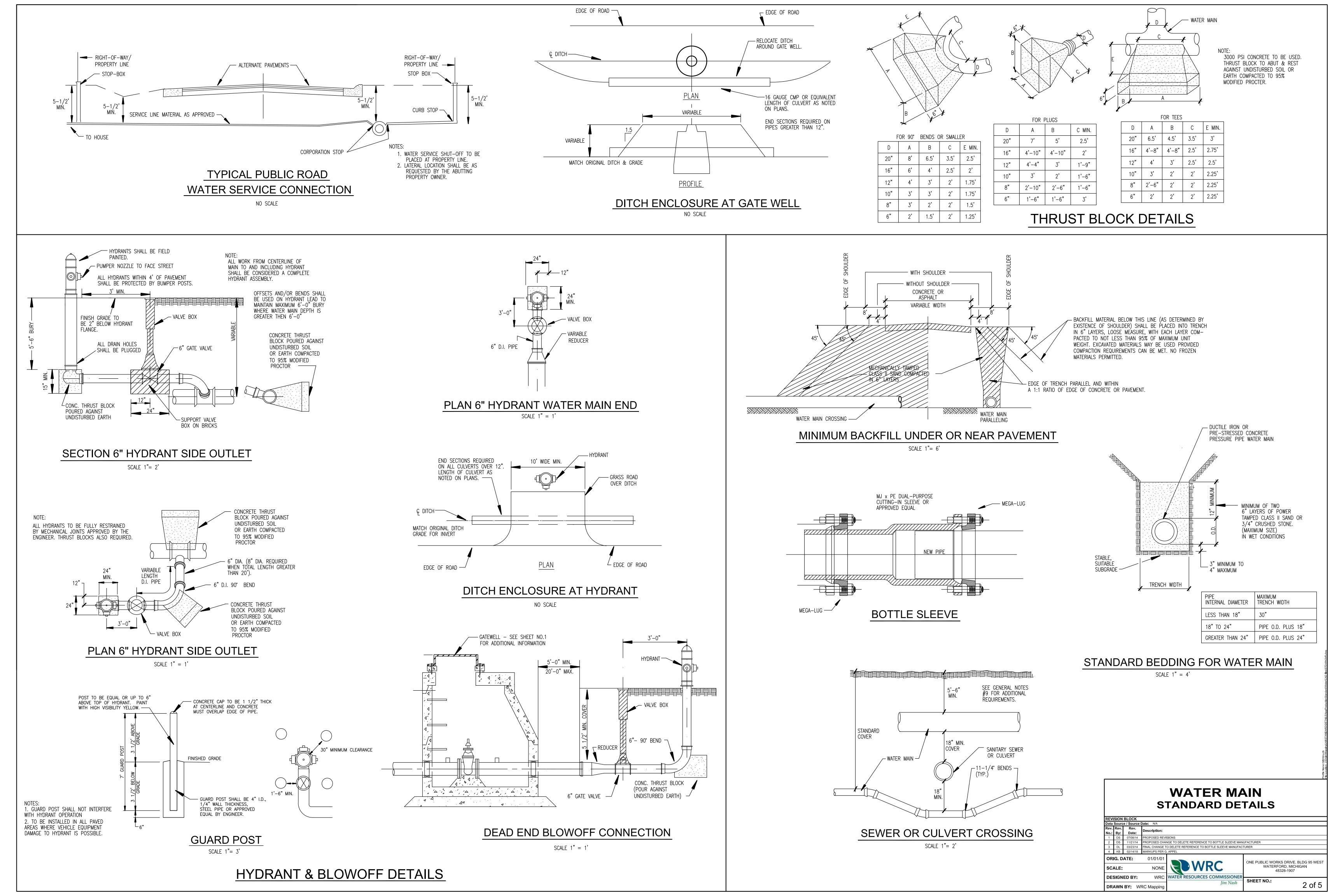
SCALE 1"= 2'

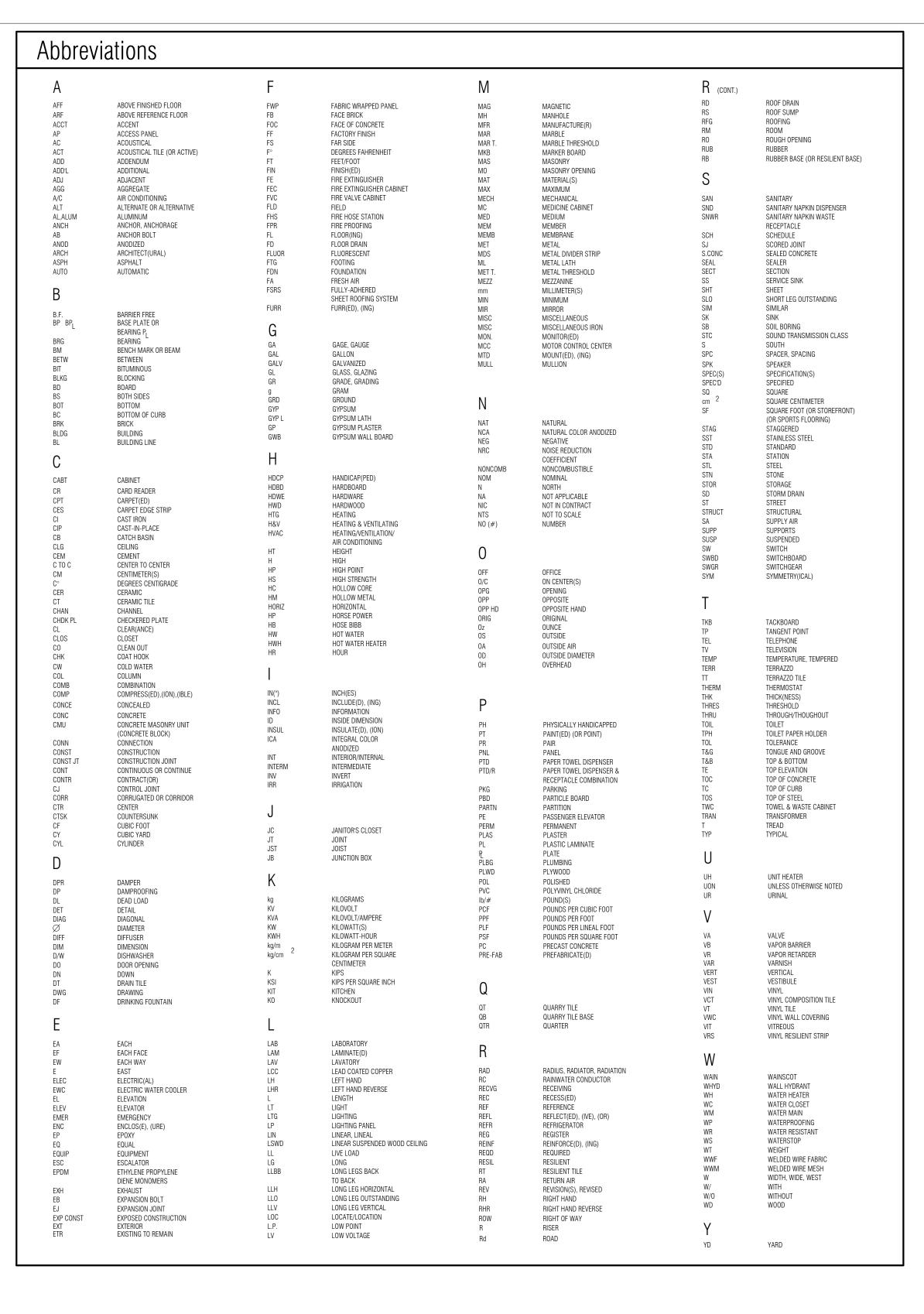
DRAWN BY: WRC Mapping

WATER MAIN STANDARD DETAILS

| 1 | SION | BLOCK | | | |
|------------|-------|------------|----------------|--|--------------------------------------|
| ١ | Sourc | e / Source | Date: N/A | | |
| | Rev. | Rev. | Description: | | |
| | By: | Date: | Description. | | |
| | DS | 03/15/13 | UPDATE TITLEBL | OCK AND ARROWS | |
| | DS | 07/08/14 | PROPOSED REVI | SIONS | |
| | DS | 11/21/14 | PROPOSED CHAI | NGE TO DELETE HOLES FROM GATEWELL COVERS | |
| | KB | 03/19/18 | MARKUPS PER G | . APPEL | |
| 2 | IG. D | ATE: | 01/01/01 | DA WOO | ONE PUBLIC WORKS DRIVE, BLDG 95 WEST |
| ALE: | | | NONE | WRC | WATERFORD, MICHIGAN 48328-1907 |
| SIGNED BY: | | ED BY: | WRC | WATER RESOURCES COMMISSIONER | SHEET NO.: |
| _ | | | | lim Nash | SHEET NO.: |







4

SLIDING MARKER (MBD)

BOARD ELEVATION - WALL MTD.

3

SLIDING MARKER (MBD)

BOARD ELEVATION - CASEWORK MTD.

COUNTER —

 $\langle 1 \rangle$

MARKER (MBD) / TACK (TBD)

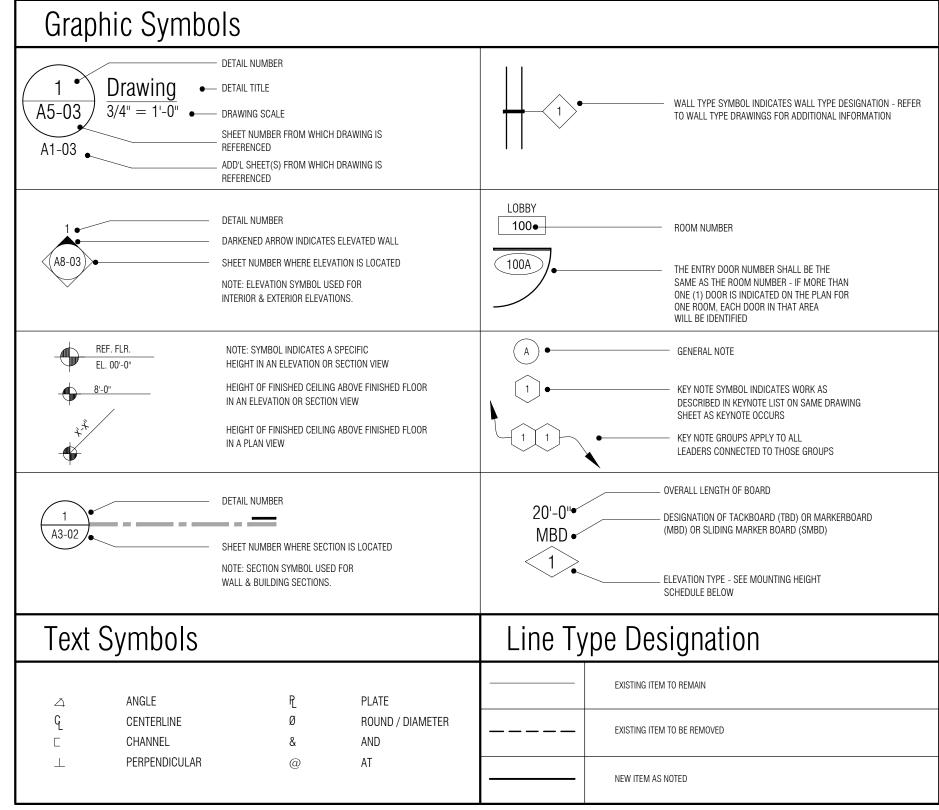
BOARD ELEVATION

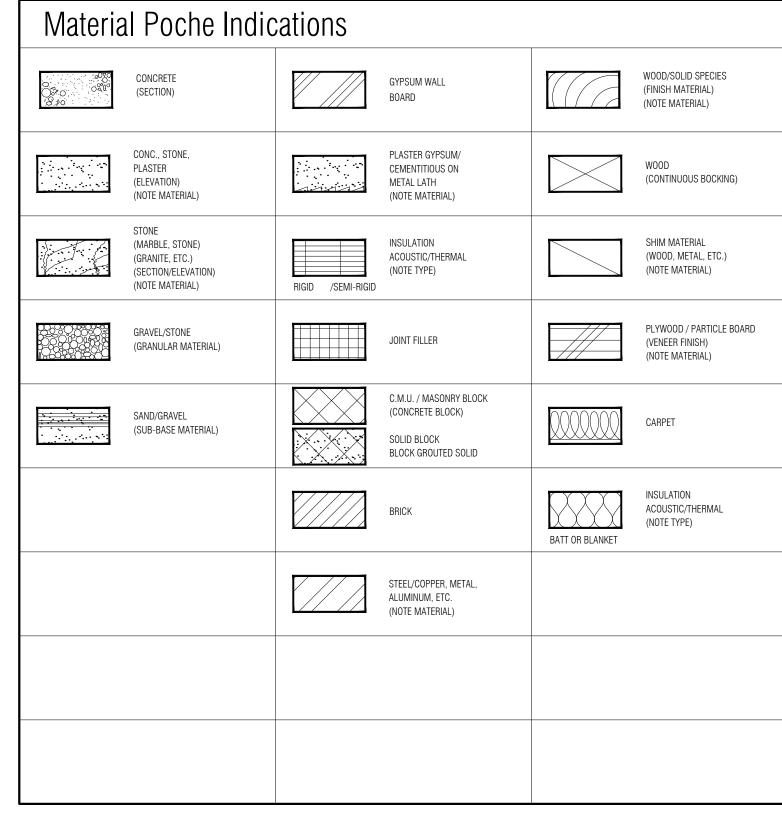
2>

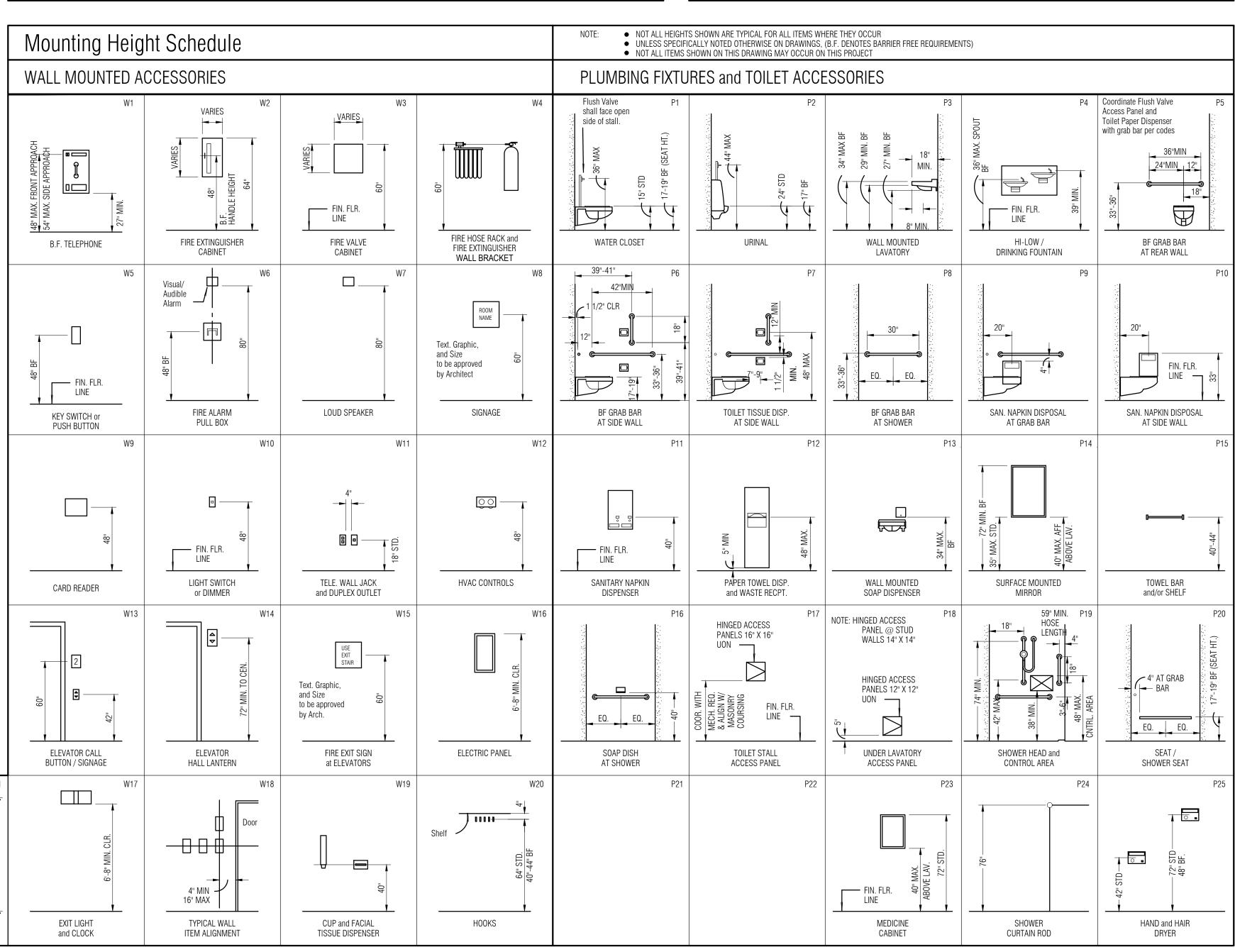
SLIDING MARKER (MBD)

BOARD ELEVATION

EX. MAS. OPENING—







PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

KEY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

Bidding - Construction 03/27/20
Construction Set 05/04/20

DRAWN BY

ILCKED DA

CHECKED BY
LL / AM
APPROVED BY

SHEET NAME

GENERAL

GENERAL INFORMATION

SHEET NO. **A**0-01

BUILDING CODE INFORMATION

HIGHLAND TOWNSHIP FIRE DEPARTMENT HIGHLAND TOWNSHIP FIRE STATION NO. 1 PROJECT: 1600 WEST HIGHLAND RD, HIGHLAND, MI 48357 ADDRESS:

GOVERNING CODES:

- 2015 MICHIGAN BUILDING CODE (MBC)
- 2012 LIFE SAFETY CODE (LSC) WITH AMENDMENTS 2015 MICHIGAN MECHANICAL CODE
- 2015 MICHIGAN PLUMBING CODE 2017 NATIONAL ELECTRICAL CODE

MICHIGAN BUILDING CODE SUMMARY:

CHAPTER 3: USE AND OCCUPANCY CLASSIFICATION

NON-SEPARATED MIXED USE OCCUPANCY:

[303.4] ASSEMBLY GROUP A-3 [304.1] BUSINESS GROUP B

[310.3] RESIDENTIAL GROUP R-3 [311.2] LOW HAZARD STORAGE GROUP S-2

CHAPTER 4: SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

DRYING ROOMS (SECTION 417):

[417.1] A DRYING ROOM OR DRY KILN INSTALLED WITHIN A BUILDING SHALL BE CONSTRUCTED ENTIRELY OF APPROVED NON-COMBUSTIBLE MATERIALS OR ASSEMBLIES

GROUP R-3 (SECTION 420):

WALLS SEPARATING SLEEPING UNITS IN THE SAME BUILDING AND WALLS SEPARATING SLEEPING UNITS FROM OTHER OCCUPANCIES CONTIGUOUS TO THEM IN THE SAME BUILDING

SHALL BE CONSTRUCTED AS FIRE PARTITIONS IN ACCORDANCE WITH SECTION 708. OCCUPANCIES SHALL BE EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.2.8.

FIRE ALARM SYSTEMS AND SMOKE ALARMS SHALL BE PROVIDED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF CHAPTER 9.

CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS

MEZZANINE AREA LIMITATION: THE AREA OF MEZZANINES SHALL NOT BE GREATER THAN 1/3 OF THE AREA OF THE ROOM IN WHICH THEY ARE LOCATED.

[508.3.2] NON-SEPARATED USES, MOST RESTRICTIVE PROVISIONS APPLY PER SECTION 504 & SECTION 506.

[TABLE 509] INCIDENTAL USES: NO USES LISTED IN TABLE 509 APPLY.

ALLOWABLE BUILDING HEIGHT AND AREA

[TABLE 504.3] ALLOWABLE BUILDING HEIGHT: 75'-0" (ACTUAL: 42'-7")

[TABLE 504.4] ALLOWABLE STORIES: 3 (ACTUAL: 1)

[506.2] ALLOWABLE AREA: 38,000 (A-3), 92,000 (B), UNLIMITED (R-3), 104,000 (S-2) 1 STORY, EQUIPPED WITH AUTO. SPRINKLER SYSTEM

1,123 SF / 5,920 SF = .19 < .33 MAX

TOTAL PROPOSED BUILDING AREA: 15,811 S.F. GROSS (INCLUDING MEZZANINE)

USING THE MOST RESTRICTIVE REQUIREMENTS IN ALL CASES

CHAPTER 6 - TYPES OF CONSTRUCTION

[602.5] TYPE II-B (NONCOMBUSTIBLE AND NON-RATED)

ITABLE 6011 FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS) CONSTRUCTION TYPE IS IIB - NO BUILDING ELEMENTS REQUIRE FIRE RESISTANCE RATED CONSTRUCTION

CHAPTER 7: FIRE AND SMOKE PROTECTION FEATURES

[705.1] OPEN FRONTAGE ON ALL SIDES OF BUILDING - FIRE RATED EXTERIOR WALLS NOT REQUIRED

[706.1] FIRE WALLS: NOT REQUIRED

[707.1] FIRE BARRIERS: A ONE HOUR FIRE BARRIER HAS BEEN PROVIDED BETWEEN OCCUPANCY GROUP B AND OCCUPANCY GROUP S-2 PER TABLE [707.3.10].

FIRE PARTITIONS: REQUIRED AND PROVIDED PER SECTION 708.3 EXCEPTION #2: SLEEPING UNITS IN TYPE II-B CONSTRUCTION SHALL BE SEPARATED BY FIRE RESISTANCE RATINGS OF AT LEAST 1/2 HOUR WHERE EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM.

[709.1] SMOKE BARRIERS: NOT REQUIRED

[710.1] SMOKE PARTITIONS: NOT REQUIRED

CHAPTER 8: INTERIOR FINISHES

[TABLE 803.11] INTERIOR WALL/CEILING FINISHES (SPRINKLERED BUILDING)

INTERIOR EXIT STAIRWAYS, RAMPS, AND PASSAGEWAYS: CLASS B EXIT ACCESS STAIRWAYS, RAMPS, AND PASSAGEWAYS: CLASS C

ROOMS AND ENCLOSED SPACES: CLASS C

CHAPTER 9: FIRE PROTECTION SYSTEMS

[903.2.8] AN AUTOMATIC SPRINKLER SYSTEM SHALL BE PROVIDED THROUGHOUT THE BUILDING IN ACCORDANCE WITH SECTION 903.3 (NFPA 13)

[903.3.1.1.1] EXCEPTION #4: AN AUTOMATIC SPRINKLER SYSTEM SHALL NOT BE REQUIRED IN UNOCCUPIED ROOMS OR AREAS THAT ARE OF NON-COMBUSTIBLE CONSTRUCTION WITH WHOLLY NON-COMBUSTIBLE CONTENTS. (ATTIC)

PORTABLE FIRE EXTINGUISHERS LOCATIONS:

WITHIN 30'-0" OF COMMERCIAL COOKING EQUIPMENT, SPECIAL HAZARD AREAS (APPARATUS BAY), WHERE REQUIRED BY THE INTERNATIONAL FIRE CODE, MAXIMUM TRAVEL DISTANCE - 75'-0"

[907.2.0.2] AUTOMATIC SMOKE DETECTION SYSTEM - A SMOKE DETECTION SYSTEM THAT ACTIVATES THE OCCUPANT NOTIFICATION SYSTEM IN ACCORDANCE WITH SECTION 907.5 SHALL BE INSTALLED IN THE AREAS LISTED IN 907.2.11.1.

[907.2.11.2] SINGLE OR MULTIPLE-STATION SMOKE ALARMS SHALL BE INSTALLED IN ALL OF THE FOLLOWING LOCATIONS IN GROUP R-3: ON THE CEILING OR WALL OUTSIDE OF EACH SEPARATE SLEEPING AREA, IN EACH ROOM USED FOR SLEEPING, AND IN EACH STORY WITHIN THE DWELLING UNIT.

[907.2.11.3] SMOKE ALARMS SHALL NOT BE INSTALLED WITHIN 20'-0" OF A PERMANENT COOKING APPLIANCE.

[907.2.11.4] SMOKE ALARMS SHALL BE INSTALLED NOT LESS THAN 3'-0" FROM THE DOOR OF A BATHROOM CONTAINING A BATHTUB OR SHOWER.

[907.2.11.7] SMOKE DETECTORS LISTED IN ACCORDANCE WITH UL 268 AND PROVIDED AS PART OF THE BUILDING FIRE ALARM SYSTEM SHALL BE AN ACCEPTABLE ALTERNATIVE TO SINGLE AND MULTIPLE STATION SMOKE ALARMS. THE FIRE ALARM SYSTEM SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS IN SECTION 907 AND ACTIVATION OF A SMOKE DETECTOR IN A DWELLING UNIT OR SLEEPING UNIT SHALL INITIATE ALARM NOTIFICATION IN THE DWELLING UNIT OR SLEEPING UNIT IN ACCORDANCE WITH SECTION 907.5.2

[907.5.2.3.1] VISIBLE ALARM NOTIFICATION APPLIANCES SHALL BE PROVIDED IN ALL PUBLIC USE AND COMMON

[915.1.2] CARBON MONOXIDE DETECTION SHALL BE PROVIDED IN SLEEPING UNITS AND DWELLING UNITS SERVED BY A FUEL BURNING APPLIANCE OR FURNACE.

CHAPTER 10: MEANS OF EGRESS

[TABLE 1004.1.2] MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT:

DORMITORIES & RESIDENCE - 1 PERSON PER UNIT = 6 OCCUPANTS BUSINESS - 2,241 SF / 100 SF PER PERSON = 23 OCCUPANTS APPARATUS & MEZZANINE - 8,616 SF / 300 SF PER PERSON = 29 OCCUPANTS TRAINING ROOM - 1,155 SF / 15 SF PER PERSON = 77 OCCUPANTS

GRAND TOTAL NUMBER OF OCCUPANTS: 135 PERSONS

THE OCCUPANT LOAD OF A MEZZANINE SHALL BE ADDED TO THE OCCUPANT LOAD OF THE ROOM THROUGH WHICH REQUIRED EGRESS OCCURS.

[TABLE 1006.2.1] SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

[TABLE 1006.3.1] MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS/STORY:

1-500 OCCUPANTS = 2 EXITS REQUIRED, 5 PROVIDED

[1016.2.2] EGRESS THROUGH INTERVENING SPACES SHALL BE ALLOWED WHERE THE ADJOINING ROOMS OR AREAS ARE ACCESSORY TO ONE ANOTHER, AND PROVIDE A DISCERNABLE PATH OF EGRESS TRAVEL TO AN EXIT.

MAX COMMON PATH OF EGRESS TRAVEL DISTANCE (SPRINKLERED): 100'-0"

[1016.2.5] EXCEPTION #1: MEANS OF EGRESS ARE NOT PROHIBITED THROUGH A KITCHEN AREA SERVING ADJOINING ROOMS CONSTITUTING PART OF THE DWELLING UNIT OR SLEEPING

[TABLE 1017.2] EXIT ACCESS TRAVEL DISTANCE (SPRINKLERED): 250'-0" MAXIMUM (MOST RESTRICTIVE) EXIT ACCESS STAIRWAYS AND RAMPS SHALL BE INCLUDED IN THE EXIT ACCESS TRAVEL [1017.3.1] DISTANCE MEASUREMENT.

EXIT ACCESS STAIRWAYS AND RAMPS THAT SERVE FLOOR LEVELS WITHIN A SINGLE STORY [1019.2] ARE NOT REQUIRED TO BE ENCLOSED.

[TABLE 1020.2] MINIMUM CORRIDOR WIDTHS: 44" MINIMUM

[1019.2] DEAD END CORRIDORS (SPRINKLERED) = 50'-0" MAXIMUM

CHAPTER 11: ACCESSIBILITY

[1103.2.15] MILITARY, FIRE SERVICE, AND POLICE FACILITIES: HOUSING, BATHING, TOILET, TRAINING, AND STORAGE AREAS INTENDED FOR USE AND OCCUPANCY EXCLUSIVELY BY PERSONNEL REQUIRED TO BE PHYSICALLY AGILE ARE NOT REQUIRED TO BE

[1104.1] SITE ARRIVAL POINTS: MINIMUM (1) ACCESSIBLE ROUTE WITHIN SITE TO AN ACCESSIBLE ENTRANCE - (3) PROVIDED

MINIMUM OF 60% OF ALL PUBLIC ENTRANCES TO BE ACCESSIBLE (100% ACCESSIBLE)

[1105.1] PUBLIC ENTRANCES:

ACCESSIBLE.

[1105.2] [TABLE 1106.1] ACCESSIBLE PARKING SPACES: (2) REQUIRED - (2) PROVIDED

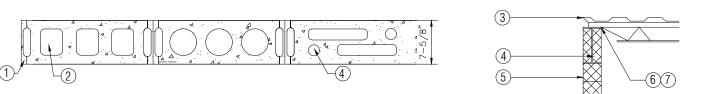
2015 MICHIGAN MECHANICAL CODE:

WHERE EQUIPMENT OR APPLIANCES REQUIRING ACCESS ARE LOCATED ON AN ELEVATED STRUCTURE OR THE ROOF OF A BUILDING SO THAT PERSONNEL WILL HAVE TO CLIMB HIGHER THAN 16 FEET ABOVE GRADE TO ACCESS THE EQUIPMENT OR APPLIANCE, AN INTERIOR OR EXTERIOR MEANS OF ACCESS SHALL BE PROVIDED.

EXCEPTION 1: AN APPROVED, BUILDING MOUNTED LADDER RECEIVER WHICH PREVENTS THE LADDER FROM SLIDING SIDEWAYS OFF THE BUILDING OR SLIPPING BACKWARDS AND MEETS THE LADDER SAFETY STANDARD OF OSHA REGULATIONS MAY BE INSTALLED ON BUILDINGS UNDER 20 FEET IN HEIGHT ABOVE GRADE TO ACCESS EQUIPMENT OR APPLIANCES.

- [505.1] DOMESTIC KITCHEN EXHAUST SYSTEMS SHALL DISCHARGE TO THE OUTDOORS THROUGH AIR TIGHT SHEET METAL DUCTS EQUIPPED WITH BACKDRAFT DAMPERS AND SHALL BE INDEPENDENT OF ALL OTHER EXHAUST SYSTEMS.
- [717.5.4] EXCEPTION #3: FIRE DAMPERS ARE NOT REQUIRED AT FIRE PARTITION PENETRATIONS WHERE THE DUCT SYSTEM IS CONSTRUCTED OF APPROVED MATERIALS, AND COMPLIES WITH THE REQUIREMENTS OF THIS SECTION.

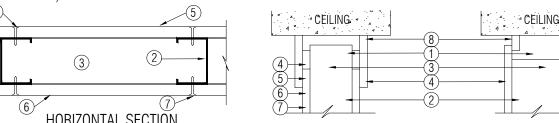
1 & 2 HR. BEARING & NON-BEARING MASONRY WALL



- NORMAL WEIGHT 6" THICK (MAX. 1 HR.) OR 8" THICK (1 OR 2 HR.) CONCRETE BLOCKS WITH LIMESTONE AGGREGATE AND A MIN. EQUIVALENT THICKNESS OF 4" FOR (2 HR) AND 2.7" FOR (1 HR) MORTAR-BLOCKS LAID IN FULL BED OF MORTAR, NOM 3/8" THICK OF NOT LESS THAN 1/4 AND NOT MORE THAN 50 PERCENT HYDRATED LIME (BY CEMENT VOLUME) VERTICAL JOINTS STAGGERED.
- 2. LOOSE MASONRY FILL-IF ALL CORE SPACES ARE FILLED WITH LOOSE DRY EXPANDED SLAG, EXPANDED CLAY OR SHALE (ROTARY KILN PROCESS), WATER REPELANT VERMICULATE MASONRY FILL INSULATION OR SILICONE TREATED PARLITE LOOSE FILL INSULATION ADD 2 HR TO CLASSIFICATION.
- *BEARING THE UL CLASSIFICATION MARKING
- 3. ROOF AND/OR FLOOR DECKING SYSTEM MATERIAL.
- 4. STRUCTURAL STEEL FRAMING SYSTEM
- CONRCRETE BLOCK WALL 6. CONCRETE BLOCK INFILL TIGHT TO UNDERSIDE OF DECK
- 7. UL APPROVED FIRESPRAY/COMPOUND BOTH SIDES OF WALL

UL DESIGN DETAIL #U495

BASED ON UNDERWRITERS LABORATORIES INC. CURRENT FIRE RESISTANCE DIRECTORY DESIGN NO. U495 NONBEARING WALL RATING - 1 OR 2 HR (SEE ITEMS 5 AND 7)



- 1. FLOOR AND CEILING RUNNERS CHANNEL SHAPED RUNNERS, 3-5/8 IN. WIDE (MIN.) 1-1/4 IN. LEGS FORMED FROM NO. 25 MSG (MIN.) GALV. STEEL, ATTACHED TO FLOOR AND CEILING WITH FASTENERS SPACED 24 IN. OC MAX.
- 2. STEEL STUDS CHANNEL-SHAPED 3-5/8" WIDE (MIN.), 1-1/4" LEGS, 3/8" FOLL BACK RELIRNS FORMED FROM NO. 25 MSG (MIN.) GALV. STEEL, ATTACHED TO FLOOR AND CEILING WITH FASTENERS SPACED 24" O.C.
- 3. BOTTLE AND BLANKETS MINERAL WOOL OR GLASS FIBER BATTLE COMPLETELY FILLING STUD WITY. SEE BATTS AND BLANKETS (BZJZ) CATEGORY IN
- UL MANUAL FOR NAMES OF CLASSIFIED COMPANIES. 4. SCREWS-TYPE S SELF TAPPING SCREWS, 2" LOW (1 HR) AND 2-1/2" LONG (2 HR).
- 5. BUILDING UNITS FOR 1 HR. RATING MOLINAL 5/8 OR 3/4" THICK, 4 FT INTERIOR WALL CAVITY. PANELS AT ACHED TO STUDS AND FLOO CED GYPSUM WALL ARD PANELS WITH THE FACED SIDE ON THE NERS WITH SCREV. SPACED 8" O.C. ALONG THE EDGES OF THE OF THE PANEL. JOINTS OF TED VERTICALLY AN TAGGERED ON OPPOSITE SIDES OF THE ASSEMBLY. GENERAL LE COREGUARD *BEARING THE UL C. SFICATION MAKING ELECTRIC COMPANY
- PAPEL OR PREN DO JOINT COMPOUL APPLIED IN TWO COASS TO JOINTS AND SCREW HEADS: PAPER JOINT TAPE AM OMPOUND-(NOT SHOWN)

2 HR. RATING BY CLASSING 5/8" THICK LIN.) 4" WIDE WALL" ARD APPLIED OVER EXTERIOR FACE OF FAPPLING LATICALLY JOIN 1774 LAED 24" FROM BUT JING UNIT (ITEM 5) AND ATTACHED TO STUDS A SPACED 8" O.C. SEE W. LEOARD GYPSUM LANX) CATEGORY IN UL MANUAL FOR NAMES OF BUILDING UNIT (ITEM 5). WALLBOARD AND FLOOR AND C TION MAKING

DECK ABOVE

CODE AND LIFE SAFETY PLAN LEGEND

AT ALL FIRE RATED WALL CONSTRUCTION. NEW OR OTHERWISE GENERAL NOTE: ALTERED BY THIS PROJECT, PROVIDE SIGNAGE ABOVE THE ADJACENT ACCESSIBLE CEILING THAT STATES: "FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS." THE LETTERS ARE TO BE 1/2" HIGH MIN. AND ARE TO BE STENCILED IN PAINT DIRECTLY

ONTO THE WALL. LOCATE THE SIGNS 30 FEET O.C. MAXIMUM.

CODE ANALYSIS WALL CONSTRUCTION 1 NEW WALL CONSTRUCTION TO BE 1-HOUR "FIRE BARRIER" CONSTRUCTION PER 2015 MBC SECTION 707. REFER TO SECTION 716 FOR REQUIREMENTS FOR OPENING PROTECTIVES. PROVIDE FIRE / SMOKE DAMPERS AS REQUIRED PER 2015 MBC. ALSO PROVIDE FIRE SEAL AT WALL AND ROOF DECKING INTERSECTIONS.

CODE ANALYSIS WALL CONSTRUCTION 2: NEW WALL CONSTRUCTION TO BE 1/2-HOUR "FIRE BARRIER" CONSTRUCTION PER MBC SECTION 707. PROVIDE FIRE / SMOKE DAMPERS AS REQUIRED PER MBC. ALSO PROVIDE FIRE SEAL AT WALL AND ROOF /

> CODE ANALYSIS FLOOR CONSTRUCTION 1: NEW FLOOR CONSTRUCTION TO BE 1-HOUR "FIRE BARRIER"

> > DECON / REST

CONSTRUCTION PER 2015 MBC SECTION 707, ALSO PROVIDE FIRE SEAL AT WALL AND ROOF / FLOOR DECK INTERSECTIONS

OCCUPANT CAPACITY OF EGRESS COMPONENT

OCCUPANT LOAD EXITING THROUGH EGRESS COMPONENT

FLOOR DECK INTERSECTIONS.

PORTABLE FIRE EXTINGUISHER / SEMI-RECESSED CABINET

WALL MOUNTED FIRE EXTINGUISHER

Main Floor Code and Life Safety Plan

ROOM OCCUPANT LOAD

PARTNERS in Architecture, PLC 65 MARKET STREET

MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

ISSUES / REVISIONS

18-122A

Bidding - Construction 03/27/20 Construction Set 05/04/20

DRAWN BY

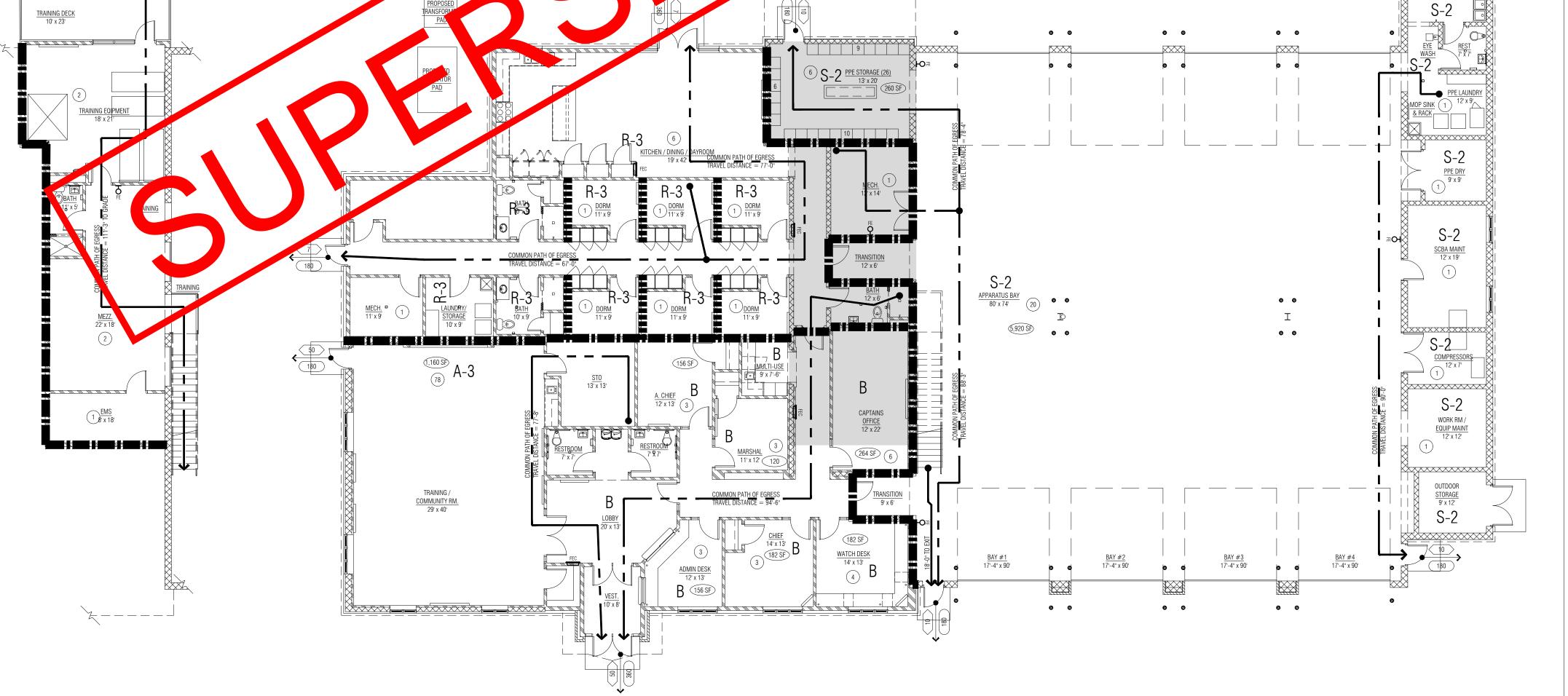
CHECKED BY

LL / AM APPROVED BY

SHEET NAME LIFE SAFETY CODE

INFORMATION

SHEET NO. A0-02







BUILDING CODE INFORMATION

OWNER:HIGHLAND TOWNSHIP FIRE DEPARTMENTPROJECT:HIGHLAND TOWNSHIP FIRE STATION NO. 1ADDRESS:1600 WEST HIGHLAND RD. HIGHLAND, MI 48357

GOVERNING CODES:

2015 MICHIGAN BUILDING CODE (MBC) 2012 LIFE SAFETY CODE (LSC) WITH AMENDMENTS

2015 MICHIGAN MECHANICAL CODE 2015 MICHIGAN PLUMBING CODE 2017 NATIONAL ELECTRICAL CODE

MICHIGAN BUILDING CODE SUMMARY:

CHAPTER 3: USE AND OCCUPANCY CLASSIFICATION

NON-SEPARATED MIXED USE OCCUPANCY: [303.4] ASSEMBLY GROUP A-3

[303.4] ASSEMBLY GROUP A-3
 [304.1] BUSINESS GROUP B
 [310.3] RESIDENTIAL GROUP R-3
 [311.2] LOW HAZARD STORAGE GROUP S-2

CHAPTER 4: SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

DRYING ROOMS (SECTION 417):

[417.1] A DRYING ROOM OR DRY KILN INSTALLED WITHIN A BUILDING SHALL BE CONSTRUCTED ENTIRELY OF APPROVED NON-COMBUSTIBLE MATERIALS OR ASSEMBLIES

GROUP R-3 (SECTION 420):

[420.2] WALLS SEPARATING SLEEPING UNITS IN THE SAME BUILDING AND WALLS SEPARATING SLEEPING UNITS FROM OTHER OCCUPANCIES CONTIGUOUS TO THEM IN THE SAME BUILDING SHALL BE CONSTRUCTED AS FIRE PARTITIONS IN ACCORDANCE WITH SECTION 708.

[420.5] OCCUPANCIES SHALL BE EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.2.8.

[420.6] FIRE ALARM SYSTEMS AND SMOKE ALARMS SHALL BE PROVIDED IN ACCORDANCE WITH THE

APPLICABLE SECTIONS OF CHAPTER 9.

CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS

[505.2.1] MEZZANINE AREA LIMITATION: THE AREA OF MEZZANINES SHALL NOT BE GREATER THAN 1/3 OF THE AREA OF THE ROOM IN WHICH THEY ARE LOCATED.

1,123 SF / 5,920 SF = .19 < .33 MAX

[508.3.2] NON-SEPARATED USES, MOST RESTRICTIVE PROVISIONS APPLY PER SECTION 504 & SECTION 506.

[TABLE 509] INCIDENTAL USES: NO USES LISTED IN TABLE 509 APPLY.

ALLOWABLE BUILDING HEIGHT AND AREA

[TABLE 504.3] ALLOWABLE BUILDING HEIGHT: 75'-0" (ACTUAL: 42'-7") [TABLE 504.4] ALLOWABLE STORIES: 3 (ACTUAL: 1)

[506.2] ALLOWABLE AREA: 38,000 (A-3), 92,000 (B), UNLIMITED (R-3), 104,000 (S-2) 1 STORY, EQUIPPED WITH AUTO. SPRINKLER SYSTEM

TOTAL PROPOSED BUILDING AREA: 15,811 S.F. GROSS (INCLUDING MEZZANINE)

USING THE MOST RESTRICTIVE REQUIREMENTS IN ALL CASES

CHAPTER 6 - TYPES OF CONSTRUCTION

[602.5] TYPE V-B

[TABLE 601] FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

CONSTRUCTION TYPE IS IIB - NO BUILDING ELEMENTS REQUIRE FIRE RESISTANCE RATED CONSTRUCTION

CHAPTER 7: FIRE AND SMOKE PROTECTION FEATURES

[705.1] OPEN FRONTAGE ON ALL SIDES OF BUILDING - FIRE RATED EXTERIOR WALLS NOT REQUIRED

[706.1] FIRE WALLS: NOT REQUIRED

[707.1] FIRE BARRIERS: A ONE HOUR FIRE BARRIER HAS BEEN PROVIDED BETWEEN OCCUPANCY GROUP B

AND OCCUPANCY GROUP S-2 PER TABLE [707.3.10].

[708.1] FIRE PARTITIONS: REQUIRED AND PROVIDED PER SECTION 708.3

EXCEPTION #2: SLEEPING UNITS IN TYPE II-B CONSTRUCTION SHALL BE SEPARATED BY FIRE RESISTANCE RATINGS OF AT LEAST 1/2 HOUR WHERE EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM.

[709.1] SMOKE BARRIERS: NOT REQUIRED

[710.1] SMOKE PARTITIONS: NOT REQUIRED

ROOMS AND ENCLOSED SPACES: CLASS C

CHAPTER 8: INTERIOR FINISHES

[TABLE 803.11] INTERIOR WALL/CEILING FINISHES (SPRINKLERED BUILDING)
- INTERIOR EXIT STAIRWAYS, RAMPS, AND PASSAGEWAYS: CLASS B
- EXIT ACCESS STAIRWAYS, RAMPS, AND PASSAGEWAYS: CLASS C

CHAPTER 9: FIRE PROTECTION SYSTEMS

[903.2.8] AN AUTOMATIC SPRINKLER SYSTEM SHALL BE PROVIDED THROUGHOUT THE BUILDING IN ACCORDANCE WITH SECTION 903.3 (NFPA 13)

[903.3.1.1.1] EXCEPTION #4: AN AUTOMATIC SPRINKLER SYSTEM SHALL NOT BE REQUIRED IN UNOCCUPIED ROOMS OR AREAS THAT ARE OF NON-COMBUSTIBLE CONSTRUCTION WITH WHOLLY NON-COMBUSTIBLE CONTENTS. (ATTIC)

[906] PORTABLE FIRE EXTINGUISHERS LOCATIONS:
WITHIN 30'-0" OF COMMERCIAL COOKING EQUIPMENT, SPECIAL HAZARD AREAS (APPARATUS BAY),
WHERE REQUIRED BY THE INTERNATIONAL FIRE CODE, MAXIMUM TRAVEL DISTANCE - 75'-0"

[907.2.0.2] AUTOMATIC SMOKE DETECTION SYSTEM - A SMOKE DETECTION SYSTEM THAT ACTIVATES THE OCCUPANT NOTIFICATION SYSTEM IN ACCORDANCE WITH SECTION 907.5 SHALL BE INSTALLED IN THE AREAS LISTED IN 907.2.11.1.

[907.2.11.2] SINGLE OR MULTIPLE-STATION SMOKE ALARMS SHALL BE INSTALLED IN ALL OF THE FOLLOWING LOCATIONS IN GROUP R-3: ON THE CEILING OR WALL OUTSIDE OF EACH SEPARATE SLEEPING AREA, IN EACH ROOM USED FOR SLEEPING, AND IN EACH STORY WITHIN THE DWELLING UNIT.

[907.2.11.3] SMOKE ALARMS SHALL NOT BE INSTALLED WITHIN 20'-0" OF A PERMANENT COOKING APPLIANCE.

[907.2.11.4] SMOKE ALARMS SHALL BE INSTALLED NOT LESS THAN 3'-0" FROM THE DOOR OF A BATHROOM CONTAINING A BATHTUB OR SHOWER.

[907.2.11.7] SMOKE DETECTORS LISTED IN ACCORDANCE WITH UL 268 AND PROVIDED AS PART OF THE BUILDING FIRE ALARM SYSTEM SHALL BE AN ACCEPTABLE ALTERNATIVE TO SINGLE AND MULTIPLE STATION SMOKE ALARMS. THE FIRE ALARM SYSTEM SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS IN SECTION 907 AND ACTIVATION OF A SMOKE DETECTOR IN A DWELLING UNIT OR SLEEPING UNIT SHALL INITIATE ALARM NOTIFICATION IN THE DWELLING UNIT OR SLEEPING UNIT IN ACCORDANCE WITH SECTION 907.5.2

[907.5.2.3.1] VISIBLE ALARM NOTIFICATION APPLIANCES SHALL BE PROVIDED IN ALL PUBLIC USE AND COMMON AREAS.

CARBON MONOXIDE DETECTION SHALL BE PROVIDED IN SLEEPING UNITS AND DWELLING UNITS SERVED BY A FUEL BURNING APPLIANCE OR FURNACE.

CHAPTER 10: MEANS OF EGRESS

[TABLE 1004.1.2] MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT:

DORMITORIES & RESIDENCE - 1 PERSON PER UNIT = 6 OCCUPANTS

BUSINESS - 2,241 SF / 100 SF PER PERSON = 23 OCCUPANTS

APPARATUS & MEZZANINE - 8,616 SF / 300 SF PER PERSON = 29 OCCUPANTS

TRAINING ROOM - 1,155 SF / 15 SF PER PERSON = 77 OCCUPANTS

GRAND TOTAL NUMBER OF OCCUPANTS: 135 PERSONS

[1004.1.1.2] THE OCCUPANT LOAD OF A MEZZANINE SHALL BE ADDED TO THE OCCUPANT LOAD OF THE

ROOM THROUGH WHICH REQUIRED EGRESS OCCURS.

2015 MICHIGAN MECHANICAL CODE:

MEANS OF ACCESS SHALL BE PROVIDED.

OTHER EXHAUST SYSTEMS.

REQUIREMENTS OF THIS SECTION.

HEIGHT ABOVE GRADE TO ACCESS EQUIPMENT OR APPLIANCES.

WHERE EQUIPMENT OR APPLIANCES REQUIRING ACCESS ARE LOCATED ON AN ELEVATED

[505.1] DOMESTIC KITCHEN EXHAUST SYSTEMS SHALL DISCHARGE TO THE OUTDOORS THROUGH AIR TIGHT

[717.5.4] EXCEPTION #3: FIRE DAMPERS ARE NOT REQUIRED AT FIRE PARTITION PENETRATIONS WHERE THE

DUCT SYSTEM IS CONSTRUCTED OF APPROVED MATERIALS, AND COMPLIES WITH THE

STRUCTURE OR THE ROOF OF A BUILDING SO THAT PERSONNEL WILL HAVE TO CLIMB HIGHER THAN

EXCEPTION 1: AN APPROVED, BUILDING MOUNTED LADDER RECEIVER WHICH PREVENTS THE LADDER

FROM SLIDING SIDEWAYS OFF THE BUILDING OR SLIPPING BACKWARDS AND MEETS THE LADDER

SAFETY STANDARD OF OSHA REGULATIONS MAY BE INSTALLED ON BUILDINGS UNDER 20 FEET IN

SHEET METAL DUCTS EQUIPPED WITH BACKDRAFT DAMPERS AND SHALL BE INDEPENDENT OF ALL

16 FEET ABOVE GRADE TO ACCESS THE EQUIPMENT OR APPLIANCE, AN INTERIOR OR EXTERIOR

[TABLE 1006.2.1] SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

MAX COMMON PATH OF EGRESS TRAVEL DISTANCE (SPRINKLERED): 100'-0"

[TABLE 1006.3.1] MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS/STORY:

1-500 OCCUPANTS = 2 EXITS REQUIRED, 5 PROVIDED

EGRESS THROUGH INTERVENING SPACES SHALL BE ALLOWED WHERE THE ADJOINING

ROOMS OR AREAS ARE ACCESSORY TO ONE ANOTHER, AND PROVIDE A DISCERNABLE PATH

OF EGRESS TRAVEL TO AN EXIT.

[1016.2.5] EXCEPTION #1: MEANS OF EGRESS ARE NOT PROHIBITED THROUGH A KITCHEN AREA

SERVING ADJOINING ROOMS CONSTITUTING PART OF THE DWELLING UNIT OR SLEEPING UNIT.

[TABLE 1017.2] EXIT ACCESS TRAVEL DISTANCE (SPRINKLERED): 250'-0" MAXIMUM (MOST RESTRICTIVE)

[1017.3.1] EXIT ACCESS STAIRWAYS AND RAMPS SHALL BE INCLUDED IN THE EXIT ACCESS TRAVEL

[1019.2] EXIT ACCESS STAIRWAYS AND RAMPS THAT SERVE FLOOR LEVELS WITHIN A SINGLE STORY ARE NOT REQUIRED TO BE ENCLOSED.

[TABLE 1020.2] MINIMUM CORRIDOR WIDTHS: 44" MINIMUM

[1019.2] DEAD END CORRIDORS (SPRINKLERED) = 50'-0" MAXIMUM

DISTANCE MEASUREMENT.

CHAPTER 11: ACCESSIBILITY

[1016.2.2]

[1103.2.15] MILITARY, FIRE SERVICE, AND POLICE FACILITIES:

HOUSING, BATHING, TOILET, TRAINING, AND STORAGE AREAS INTENDED FOR USE AND OCCUPANCY EXCLUSIVELY BY PERSONNEL REQUIRED TO BE PHYSICALLY AGILE ARE NOT REQUIRED TO BE ACCESSIBLE.

1/32" = 1'-0"

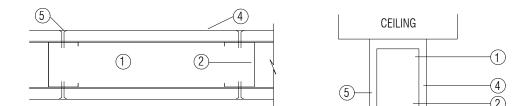
[1104.1] SITE ARRIVAL POINTS:
MINIMUM (1) ACCESSIBLE ROUTE WITHIN SITE TO AN ACCESSIBLE ENTRANCE - (3) PROVIDED

[1105.1] PUBLIC ENTRANCES:
MINIMUM OF 60% OF ALL PUBLIC ENTRANCES TO BE ACCESSIBLE (100% ACCESSIBLE)

[1105.2] [TABLE 1106.1] ACCESSIBLE PARKING SPACES: (2) REQUIRED - (2) PROVIDED

(UL DESIGN DETAIL #W433

BASED ON UNDERWRITERS LABORATORIES INC. CURRENT FIRE RESISTANCE DIRECTORY DESIGN NO. W433 NONBEARING WALL RATING - 1/2 HR



HORIZONTAL SECTION

- Proprietary channel shaped runners, min depth to accommodate stud size, attached to floor and ceiling with fasteners 24 in. OC. max.
 Framing Members* Steel Studs For the 1/2 Hour Nonbearing Wall Rating Proprietary channel shaped studs, min. 2-1/2 in. deep spaced a max of 24 in. OC. Studs to be cut 3/4 in less than the assembly height
- Gypsum Board* 5/8 in. thick, 48 in. wide, with beveled, square, or tapered edges, applied either horizontally or vertically. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers need not be staggered.
 1/2 Hour Nonbearing Rating On Steel Studs Single layer secured to studs or resilient channels with 1 in. long Type S steel screws
- spaced 12 in. OC at the perimeter and in the field.

 Joint Tape and Compound Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads of outer layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer layer panels. Paper tape and joint
- compound may be omitted when gypsum panels are supplied with a square edge.
 6. Furring Channels (Optional, Not Shown) Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 steel screws for steel studs and 1-1/4 in. long Type S or Type W screws for wood studs.

CODE AND LIFE SAFETY PLAN LEGEND

GENERAL NOTE:

AT ALL FIRE RATED WALL CONSTRUCTION, NEW OR OTHERWISE
ALTERED BY THIS PROJECT, PROVIDE SIGNAGE ABOVE THE
ADJACENT ACCESSIBLE CEILING THAT STATES: "FIRE AND/OR
SMOKE BARRIER - PROTECT ALL OPENINGS." THE LETTERS ARE TO
BE 1/2" HIGH MIN. AND ARE TO BE STENCILED IN PAINT DIRECTLY
ONTO THE WALL. LOCATE THE SIGNS 30 FEET O.C. MAXIMUM.

CODE ANALYSIS WALL CONSTRUCTION 1:

NEW WALL CONSTRUCTION TO BE 1/2-HOUR "FIRE BARRIER"

CONSTRUCTION PER MBC SECTION 707. PROVIDE FIRE / SMOKE DAMPERS

AS REQUIRED PER MBC. ALSO PROVIDE FIRE SEAL AT WALL AND ROOF /
FLOOR DECK INTERSECTIONS.

OCCUPANT CAPACITY OF EGRESS COMPONENT

OCCUPANT LOAD EXITING THROUGH EGRESS COMPONENT

ROOM OCCUPANT LOAD

PORTABLE FIRE EXTINGUISHER / SEMI-RECESSED CABINET

WALL MOUNTED FIRE EXTINGUISHER

1/32" = 1'-0"

PARTNERS in Architecture, PLC 65 MARKET STREET

MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

KEY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

18-122A

ISSUES / REVISIONS

PROJECT NO.

 Bidding - Construction
 03/27/20

 CCD #4
 09/01/20

DRAWN BY

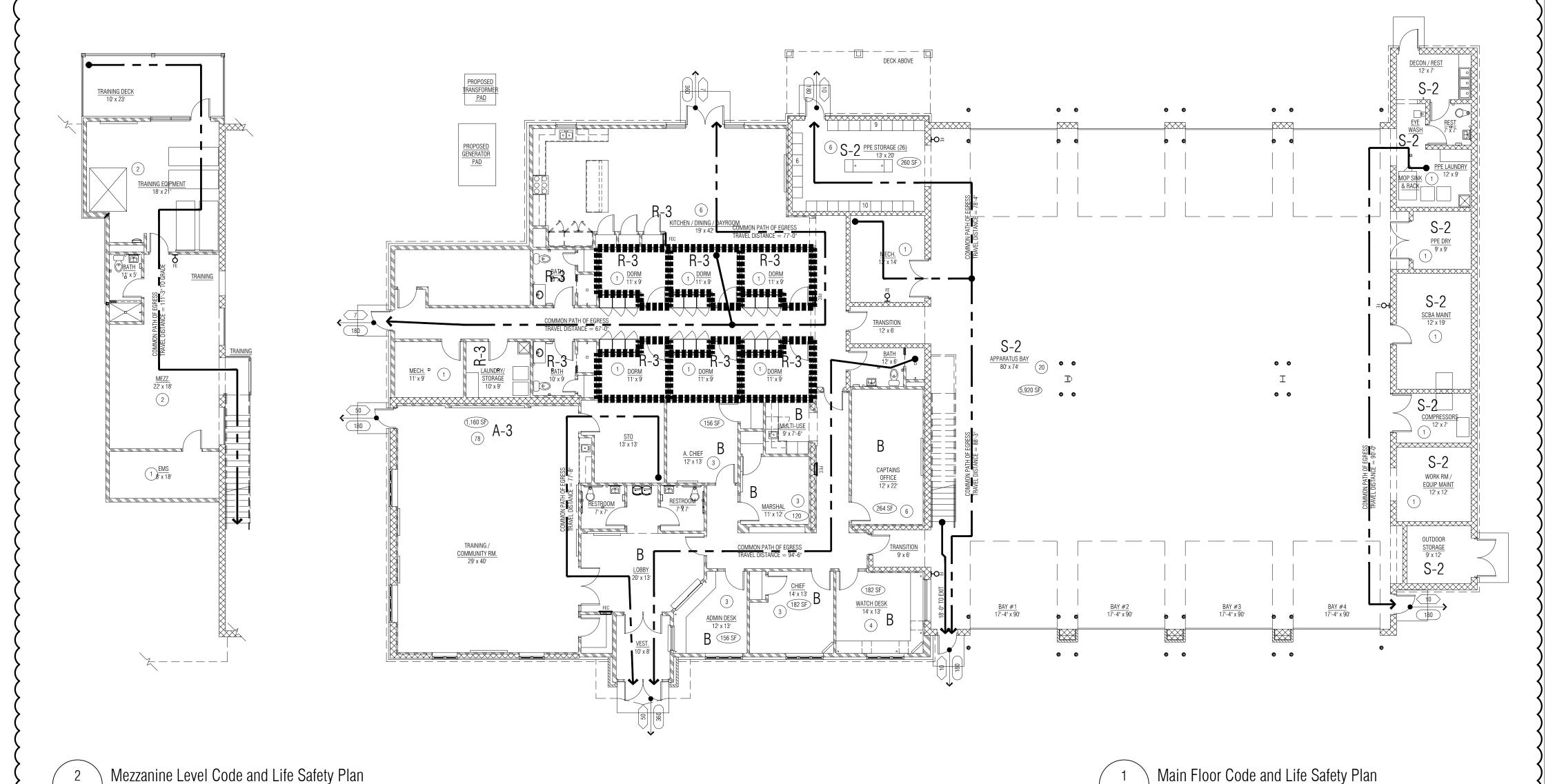
CHECKED BY

APPROVED BY

ET NAME

LIFE SAFETY CODE INFORMATION

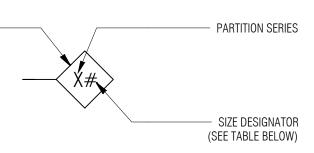
SHEET NO. **A**0-02



GENERAL NOTES:

- 1. "WALL" AND "PARTITION" ARE USED TO DENOTE EITHER WALLS OR PARTITIONS AND ARE USED
- 2. REFER TO STRUCTURAL FOR ALL REQUIRED REINFORCING AND FOR WALL CONNECTIONS TO FLOORS AND ROOFS
- 3. AT FIRE RATED WALLS FILL ALL VOIDS, PENETRATIONS ETC. AND SEAL REFER TO DRAWING A0-02 LIFE SAFETY PLANS & CODE INFORMATION FOR ALL PARTITION FIRE RATINGS
- 4. WHERE A WALL RUNS PARALLEL TO THE DIRECTION OF A ROOF TRUSS AND DOES NOT ALIGN UNDERNEATH A TRUSS PROVIDE MTL. STUD BRIDGING BETWEEN THE ROOF TRUSSES @ 48"
- 5. REFER TO ROOM FINISH SCHEDULE FOR WALL FINISHES AND WAL BASE

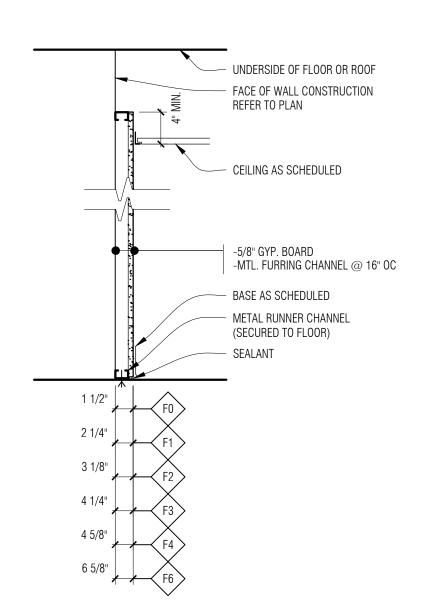
6. PARTITION TYPE
GRAPHIC TAG —



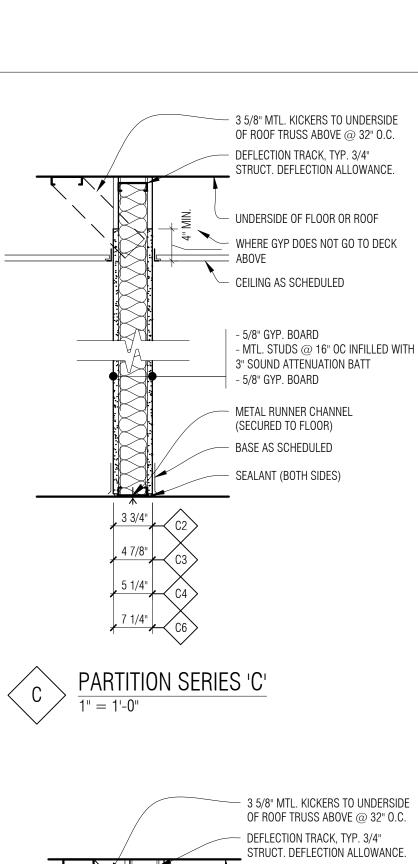
| MATERIAL | DESIGNATION SIZE | ACTUAL SIZE | SPACING |
|------------------------|-----------------------|--|---------|
| MASONRY | 4 6 8 12 | 3 5/8" 5 5/8" 7 5/8" 11 5/8" | N/A |
| STEEL STUDS | 1 2 3 4 6 | 1 5/8" 2 1/2" 3 5/8" 4" 6" | 16" OC |
| FURRING | 0 1 2 3 | 7/8" 1 5/8" 2 1/2" 3 5/8" | 16" OC |
| SHAFTWALL C-H STUDS | 2 4 6 | 2 1/2" 4" 6" | 24" OC |

- 7. SUBSTITUTE TILE BACKING BOARD AT LOCATIONS TO RECEIVE A TILE WALL FINISH
- 8. ALL NON-LOAD BEARING METAL WALL FRAMING SHALL BE BASED ON TOTAL STUD HEIGHT
- 9. AT INTERSECTIONS OF DIS-SIMILAR PARTITION TYPES, THE HIGHEST RATED PARTITION IS TO RUN THROUGH THE INTERSECTION TO MAINTAIN ENCLOSURE
- 10. FIRE-RATED PARTITIONS SHALL BE CONSTRUCTED ACCORDING TO THE FIRE TEST INDICATED. NO SUBSTITUTIONS OF MATERIALS OR DEVIATIONS FROM CONSTRUCTION ARE ALLOWED. ADDITIONAL LAYERS MAY BE REQUIRED FOR ACOUSTICAL OR OTHER REASONS AND MUST BE EXECUTED AS SHOWN
- 11. STC RATINGS ARE MINIMUM ACOUSTICAL PERFORMANCE REQUIREMENT. SPECIFIC ACOUSTICAL TESTS ARE GIVEN FOR REFERENCE ONLY. SOUND ATTENUATION BLANKET THICKNESS SHALL BE AS FOLLOWS:
 - A. 1 1/2" FOR PARTITIONS WITH 1 5/8" AND 2 1/2" STUDS (INCLUDING SHAFTWALLS)

 B. 3" FOR PARTITIONS WITH 3 5/8", 4" OR 6" STUDS UON
 - C. 3" FOR SHAFTWALLS WITH 4" OR 6" STUDS UON
 D. AS REQUIRED FOR FIRE RATING
- 12. AT ALL FIRE RATED WALL CONSTRUCTION, PROVIDE SIGNAGE ABOVE THE ADJACENT ACCESSIBLE CEILING THAT STATES: "FIRE AND/OR SMOKE BARRIER PROTECT ALL OPENINGS." THE LETTERS ARE TO BE 3" HIGH MIN. AND ARE TO BE STENCILED IN PAINT DIRECTLY ONTO THE WALL. LOCATE THE SIGNS 30'-0" O.C. MAXIMUM. AND NO MORE THAN 15'-0" FROM THE END OF EACH WALL. [703.7]
- 13. ALL TYPES MAY NOT BE USED. REFER TO DRAWINGS.







- UNDERSIDE OF FLOOR OR ROOF - WHERE GYP DOES NOT GO TO DECK

- CEILING AS SCHEDULED

- 5/8" GYP. BOARD

- 5/8" GYP. BOARD

- MTL. STUDS @ 16" 0C

- METAL RUNNER CHANNEL

(SECURED TO FLOOR)

- BASE AS SCHEDULED

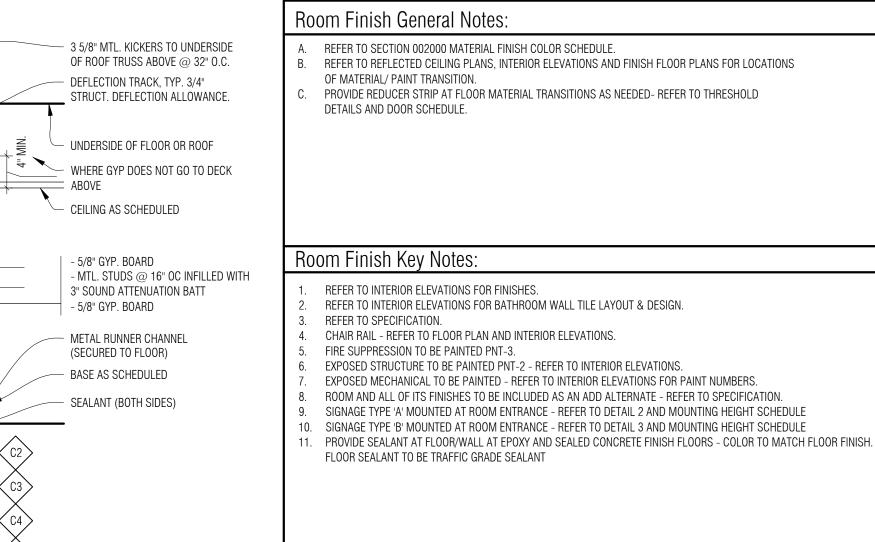
- SEALANT (BOTH SIDES)

UNDERSIDE OF FLOOR OR ROOF

PARTITION SERIES 'B'

CAVITY FILLED INSULATION

ABOVE



| Room Finis | sh Legend: |
|------------|---|
| AF | ATHLETIC FLOORING |
| ACT | ACOUSTIC TILE AND GRID SYSTEM |
| ARS | ARCHITECTURAL ROOF SHINGLES |
| CONC | CONCRETE |
| CHPL | CONDUCTIVE LAMINATED FLOOR TILE |
| CPT | CARPET |
| CT | CERAMIC TILE |
| EIFS | EXTERIOR INSULATION FINISHING SYST |
| EP DNT | EPOXY FLOOR FINISH EPOXY PAINT |
| | |
| ERW | EXPOSED CONSTRUCTION EPOXY RESIN WORK SURFACE |
| FB | FACE BRICK |
| FWAP | FABRIC WRAPPED ACOUSTICAL PANEL |
| GYP | GYPSUM BOARD |
| GMU | GLAZED MASONRY UNITS |
| HV | HOMOGENOUS VINYL |
| LSP | LIGHTWEIGHT STONE PANELS |
| LVT | LUXURY VINYL TILE |
| MCP | METAL CEILING PANEL |
| MFT | METAL FLOOR TRANSITION |
| PL PT | PLASTIC LAMINATE PORCELAIN TILE |
| PNT | PAINT |
| PWAP | PERFORATED WOOD ACOUSTICAL PAN |
| RA | RUBBER ACCESSORIES |
| RB | RESILIENT WALL BASE |
| RF | RESILIENT RUBBER FLOORING |
| RMAT | RECESSED FLOOR MAT |
| SC | SEALED CONCRETE |
| SDT | STATIC DISSIPATING TILE |
| SMB | SMOOTH FINISH MASONRY BLOCK (BU |
| SP | STONE VENEER PANELS SOLID SURFACING |
| SS STN | STONE |
| ST | STREET, STAIN |
| TRZ | TERRAZZO |
| TB | TERRAZZO WALL BASE |
| TP | TOILET PARTITIONS |
| VA | VINYL ACCESSORIES |
| | |

VINYL COMPOSITION TILE WALL COVERING

WOOD VENEER

WALK-OFF CARPET

WO

| System | ROOM NO. | ROOM NAME | | | | | | |
|-------------------|------------|-------------------------|--|--|--|--|--|--|
| NGLES | MAIN LEVEL | | | | | | | |
| LOOR TILE | 101 | VESTIBULE | | | | | | |
| SHING SYSTEM | 102 | LOBBY | | | | | | |
| | 103 | WOMEN'S RESTROOM | | | | | | |
| ACE | 104 | MEN'S RESTROOM | | | | | | |
| ICAL PANELS | 105 | TRAINING / COMMUNITY RM | | | | | | |
| ICAL I ANLES | 106 | STORAGE | | | | | | |
| | 107 | PASSAGE | | | | | | |
| LS | 108 | ADMIN DESK | | | | | | |
| | 109 | MARSHALL | | | | | | |
| | 110 | A. CHIEF | | | | | | |
| STICAL PANELS | 111 | CHIEF | | | | | | |
| | 112 | WATCH DESK | | | | | | |
| NG | 113 | TRANSITION | | | | | | |
| | 114 | CAPTAIN'S OFFICE | | | | | | |
| BLOCK (BURNISHED) | 115 | MULTI-USE | | | | | | |
| | 116 | ВАТН | | | | | | |
| | 117 | TRANSITION | | | | | | |
| | 118 | LAUNDRY/STORAGE | | | | | | |
| | 119 | MECH | | | | | | |
| | 120 | ASSAGE | | | | | | |
| | 121 | DORM | | | | | | |
| | 122 | DORM | | | | | | |

Room Finish Schedule

FLOOR

LVT-1

PT-1

PT-1

CPT-1

SC-1

BASE

RB-1

PT-2

PT-2

RB-1

NO BASE

| | 107 | 17100/IGE | | "" | WC-4 | 1 1111 1 | '''' ' | '''' ' | 1 7.01 1 | l '' ' |
|--------|-----|------------------|-------------|---------|------------------|------------------|------------------|------------------|--------------------|--------|
| | 108 | ADMIN DESK | LVT-1 | RB-1 | PNT-1 | PNT-1 | PNT-1 | PNT-1 | ACT-2 | 10 |
| | 109 | MARSHALL | LVT-1 | RB-1 | PNT-1 | PNT-1 | PNT-1 | PNT-1 | ACT-1 | 10 |
| | 110 | A. CHIEF | LVT-1 | RB-1 | PNT-1 | PNT-1 | PNT-1 | PNT-1 | ACT-1 | 10 |
| | 111 | CHIEF | LVT-1 | RB-1 | PNT-1 | PNT-1 | PNT-1 | PNT-1 | ACT-1 | 10 |
| | 112 | WATCH DESK | LVT-1 | RB-1 | PNT-1 | PNT-1 | PNT-1 | PNT-1 | ACT-1 | 1 |
| | 113 | TRANSITION | EP-1 | RB-1 | EP PNT-1 | EP PNT-1 | EP PNT-1 | EP PNT-1 | GYP. PNT-2 | 11 |
| | 114 | CAPTAIN'S OFFICE | LVT-1 | RB-1 | PNT-1 | PNT-1 | PNT-1 | PNT-1 | ACT-1 | |
| ISHED) | 115 | MULTI-USE | LVT-1 | RB-1 | PNT-1 | PNT-1 | PNT-1 | PNT-1 | ACT-1 | 1 |
| | 116 | ВАТН | PT-1 | PT-2 | PNT -1 & WP-2 | PNT -1 & WP-2 | PNT -1 & WP-2 | PNT -1 & WP-2 | GYP. PNT-2 | 2 |
| | 117 | TRANSITION | EP-1 | RB-1 | EP PNT-1 | EP PNT-1 | EP PNT-1 | EP PNT-1 | GYP. PNT-2 | 11 |
| | 118 | LAUNDRY/STORAGE | LVT-1 | RB-1 | PNT-1 | PNT-1 | EP PNT-1 | PNT-1 | ACT-1 | |
| | 119 | MECH | SC-1 | NO BASE | EP PNT-1 | EP PNT-1 | EP PNT-1 | EP PNT-1 | EXP. CONST / PNT-2 | 11 |
| | 120 | ASSAGE | LVT-1 | RB-1 | EP PNT-1 | EP PNT-1 | PNT-1 | EP PNT-1 | ACT-1 | |
| | 121 | DORM | CPT-1 | RB-1 | PNT-1 | PNT-1 | PNT-1 | PNT-1 | ACT-1 | |
| | 122 | DORM | CPT-1 | RB-1 | PNT-1 | PNT-1 | PNT-1 | PNT-1 | ACT-1 | |
| | 123 | Ms | CPT-1 | RB-1 | PNT-1 | PNT-1 | PNT-1 | PNT-1 | ACT-1 | |
| | 124 | ВАТЬ | E -1 | PT-2 | PNT -1 & WP-2 | PNT -1 & WP-2 | PNT -1 & WP-2 | PNT -1 & WP-2 | GYP. PNT-2 | 2 |
| | 125 | DORM | CPT- | RB-1 | PNT-1 | PNT-1 | PNT-1 | PNT-1 | ACT-1 | |
| | 120 | DOB | 0. 1 | RB-1 | PNT-1 | PNT-1 | PNT-1 | PNT-1 | ACT-1 | |
| | 127 | DORM | CPT-1 | RB-1 | PNT-1 | PNT-1 | PNT-1 | PNT-1 | ACT-1 | |

EAST

WC-3 PNT -1

PT-2 & PT-3 | PT-2 & PT-3 | PT-2 & PT-3

PNT-6

PNT-1

PNT-1

WC-3 & WC-4

WC-1 & WC-5

PNT-1

SOUTH

PNT-6

PNT-1

PT-2 & PT-3

PT-2 & PT-3

PNT-6

PNT-1



BATH

TRAINING/EQUIPMENT

203

PT-1

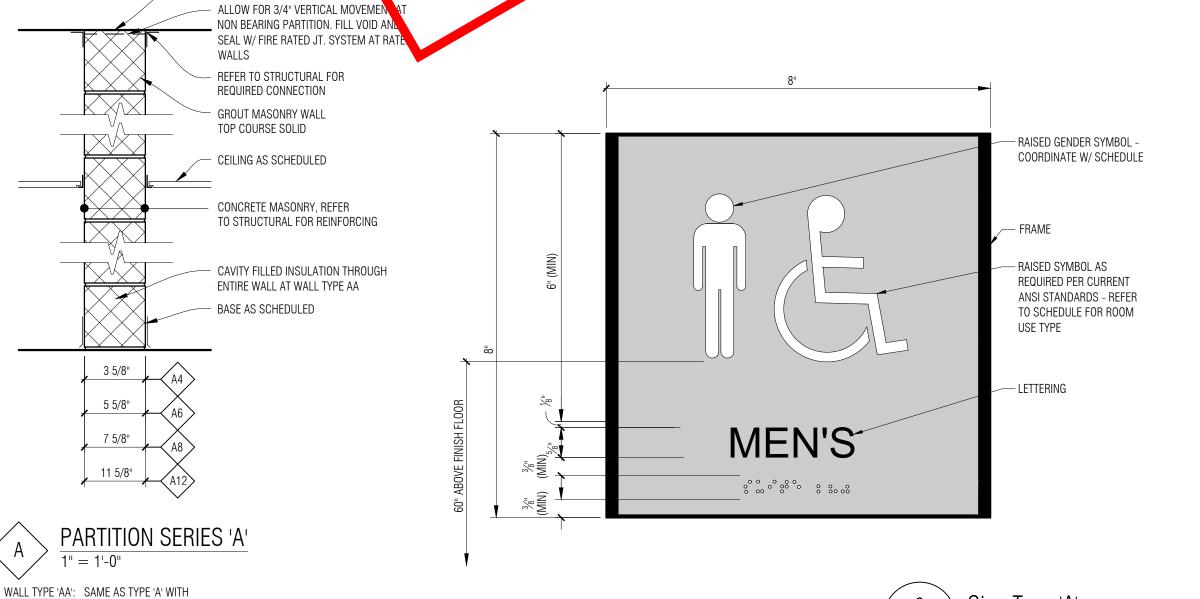
AF-1

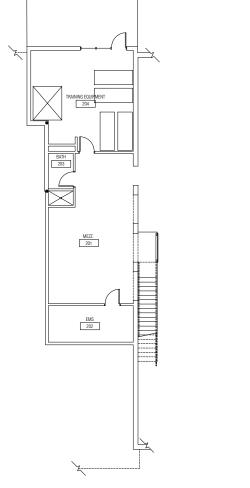
PT-2

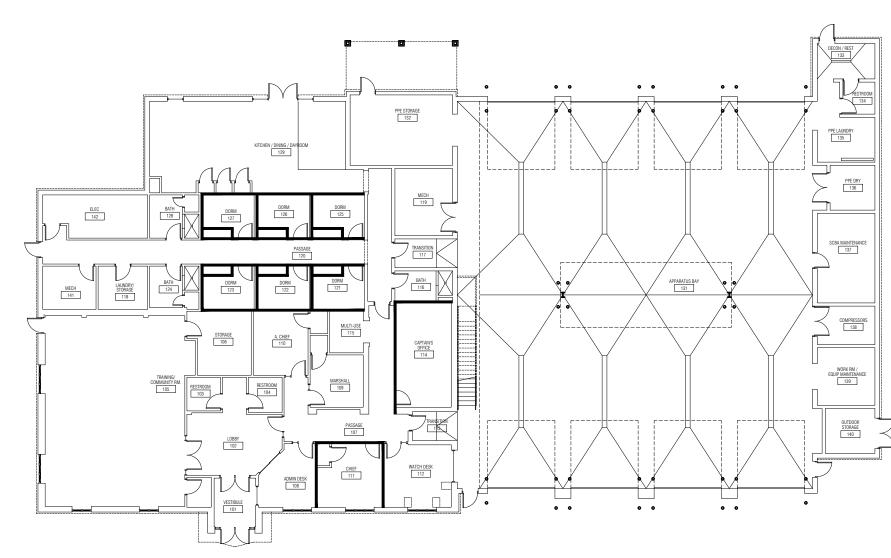
RB-1

& WP-2

PNT-1







PNT -1

PNT-1

& WP-2

& WP-2

PNT-1

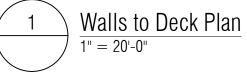
& WP-2

PNT-1

GYP. PNT-2

GYP. PNT-2

2, 3, 8



PARTNERS

ROOM FINISH KEY NOTES

CEILING FINISH

ACT-1 & ACT-2

GYP. PNT-2

GYP. PNT-2

EXP CONST / PNT-2

GYP. PNT-2

GYP. PNT-2



PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture. PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

KEY PLAN

/NFR

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

Bidding - Constru

Bidding - Construction 03/27/20
Addendum #1 04/20/20
Construction Set 05/04/20

DRAWN BY

AR
CHECKED BY

LL / AM

APPROVED BY

DG SHEET NAME

ROOM FINISH SCHEDULE &

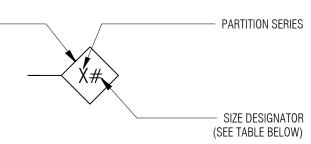
WALL TYPES

SHEET NO. A0-03

GENERAL NOTES:

- "WALL" AND "PARTITION" ARE USED TO DENOTE EITHER WALLS OR PARTITIONS AND ARE USED
- REFER TO STRUCTURAL FOR ALL REQUIRED REINFORCING AND FOR WALL CONNECTIONS TO FLOORS AND ROOFS
- AT FIRE RATED WALLS FILL ALL VOIDS, PENETRATIONS ETC. AND SEAL REFER TO DRAWING A0-02 LIFE SAFETY PLANS & CODE INFORMATION FOR ALL PARTITION FIRE RATINGS
- WHERE A WALL RUNS PARALLEL TO THE DIRECTION OF A ROOF TRUSS AND DOES NOT ALIGN UNDERNEATH A TRUSS - PROVIDE MTL. STUD BRIDGING BETWEEN THE ROOF TRUSSES @ 48"
- REFER TO ROOM FINISH SCHEDULE FOR WALL FINISHES AND WAL BASE

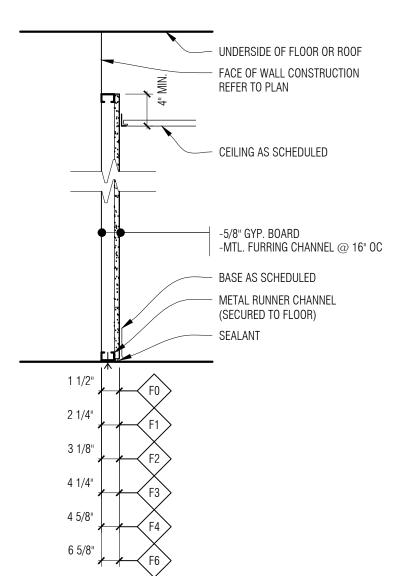
PARTITION TYPE **GRAPHIC TAG**



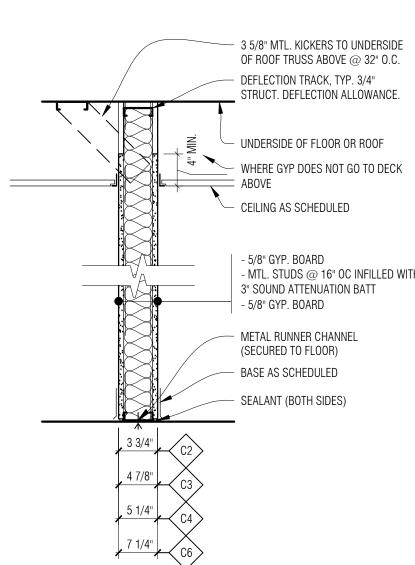
| MATERIAL | DESIGNATION SIZE | ACTUAL SIZE | SPACING |
|------------------------|-----------------------|--|---------|
| MASONRY | 4 6 8 12 | 3 5/8" 5 5/8" 7 5/8" 11 5/8" | N/A |
| STEEL STUDS | 1 2 3 4 6 | 1 5/8" 2 1/2" 3 5/8" 4" 6" | 16" OC |
| FURRING | 0 1 2 3 | 7/8" 1 5/8" 2 1/2" 3 5/8" | 16" OC |
| SHAFTWALL C-H STUDS | 2 4 6 | 2 1/2" 4" 6" | 24" OC |

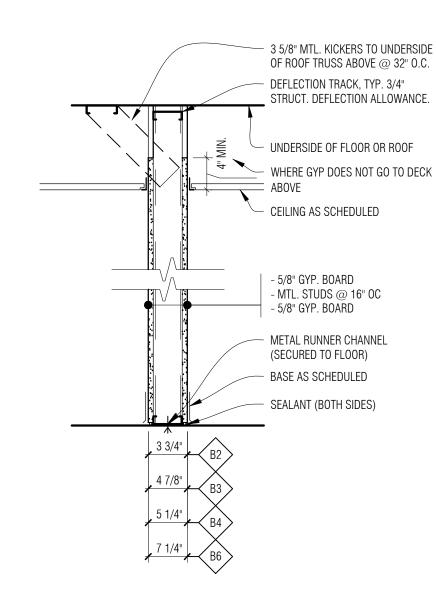
- SUBSTITUTE TILE BACKING BOARD AT LOCATIONS TO RECEIVE A TILE WALL FINISH
- ALL NON-LOAD BEARING METAL WALL FRAMING SHALL BE BASED ON TOTAL STUD HEIGHT
- AT INTERSECTIONS OF DIS-SIMILAR PARTITION TYPES, THE HIGHEST RATED PARTITION IS TO RUN THROUGH THE INTERSECTION TO MAINTAIN ENCLOSURE
- FIRE-RATED PARTITIONS SHALL BE CONSTRUCTED ACCORDING TO THE FIRE TEST INDICATED. NO SUBSTITUTIONS OF MATERIALS OR DEVIATIONS FROM CONSTRUCTION ARE ALLOWED. ADDITIONAL LAYERS MAY BE REQUIRED FOR ACOUSTICAL OR OTHER REASONS AND MUST BE EXECUTED AS SHOWN
- STC RATINGS ARE MINIMUM ACOUSTICAL PERFORMANCE REQUIREMENT. SPECIFIC ACOUSTICAL TESTS ARE GIVEN FOR REFERENCE ONLY. SOUND ATTENUATION BLANKET THICKNESS SHALL BE AS FOLLOWS:
 - A. 1 1/2" FOR PARTITIONS WITH 1 5/8" AND 2 1/2" STUDS (INCLUDING SHAFTWALLS) 3" FOR PARTITIONS WITH 3 5/8", 4" OR 6" STUDS UON
 - 3" FOR SHAFTWALLS WITH 4" OR 6" STUDS UON AS REQUIRED FOR FIRE RATING
- AT ALL FIRE RATED WALL CONSTRUCTION, PROVIDE SIGNAGE ABOVE THE ADJACENT ACCESSIBLE CEILING THAT STATES: "FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS." THE LETTERS ARE TO BE 3" HIGH MIN. AND ARE TO BE STENCILED IN PAINT DIRECTLY ONTO THE WALL. LOCATE THE SIGNS 30'-0" O.C. MAXIMUM. AND NO MORE THAN 15'-0" FROM THE
- 13. ALL TYPES MAY NOT BE USED. REFER TO DRAWINGS.

END OF EACH WALL. [703.7]

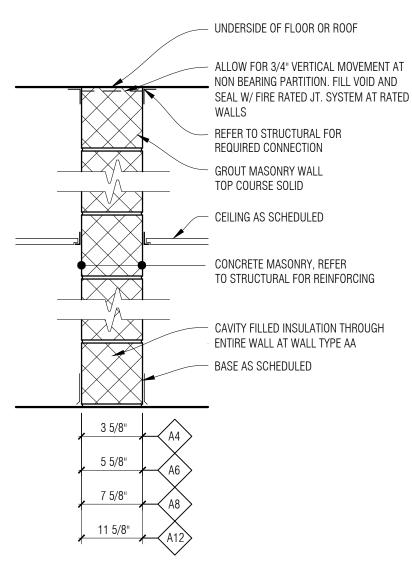


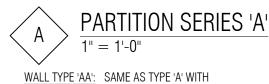




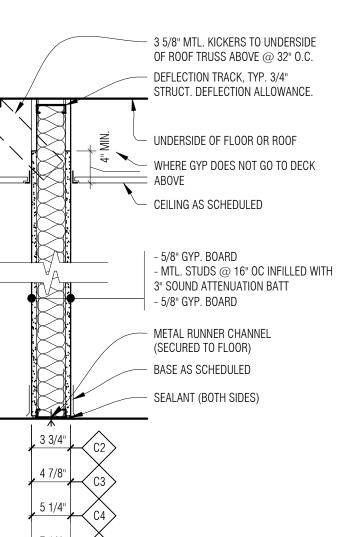


PARTITION SERIES 'B'





CAVITY FILLED INSULATION



Room Finish General Notes:

OF MATERIAL/ PAINT TRANSITION

DETAILS AND DOOR SCHEDULE.

Room Finish Kev Notes:

REFER TO SPECIFICATION.

REFER TO INTERIOR ELEVATIONS FOR FINISHES.

FLOOR SEALANT TO BE TRAFFIC GRADE SEALANT

FIRE SUPPRESSION TO BE PAINTED PNT-3.

REFER TO INTERIOR ELEVATIONS FOR BATHROOM WALL TILE LAYOUT & DESIGN.

EXPOSED STRUCTURE TO BE PAINTED PNT-2 - REFER TO INTERIOR ELEVATIONS

EXPOSED MECHANICAL TO BE PAINTED - REFER TO INTERIOR ELEVATIONS FOR PAINT NUMBERS.

ROOM AND ALL OF ITS FINISHES TO BE INCLUDED AS AN ADD ALTERNATE - REFER TO SPECIFICATION.

SIGNAGE TYPE 'A' MOUNTED AT ROOM ENTRANCE - REFER TO DETAIL 2 AND MOUNTING HEIGHT SCHEDULE

SIGNAGE TYPE 'B' MOUNTED AT ROOM ENTRANCE - REFER TO DETAIL 3 AND MOUNTING HEIGHT SCHEDULE

PROVIDE SEALANT AT FLOOR/WALL AT EPOXY AND SEALED CONCRETE FINISH FLOORS - COLOR TO MATCH FLOOR FINISH.

CHAIR RAIL - REFER TO FLOOR PLAN AND INTERIOR ELEVATIONS.

REFER TO SECTION 002000 MATERIAL FINISH COLOR SCHEDULE.

REFER TO REFLECTED CEILING PLANS, INTERIOR ELEVATIONS AND FINISH FLOOR PLANS FOR LOCATIONS

PROVIDE REDUCER STRIP AT FLOOR MATERIAL TRANSITIONS AS NEEDED- REFER TO THRESHOLD

Room Finish Legend:

ACT

ARS

CONC

CHPL

CPT

EIFS

EP PNT

ERW

GMU

MCP

MFT

STN

W0

- APPLIQUE LETTERING

- CLEAR COVER WITH

CLERESTORY LEVEL

TRAINING EQUIPMENT 204

MEZZ. 201

EMS 202

CLERESTORY

PAPER INSERTS

ATHLETIC FLOORING

EPOXY FLOOR FINISH

EPOXY RESIN WORK SURFACE

GLAZED MASONRY UNITS

LIGHTWEIGHT STONE PANELS

HOMOGENOUS VINYL

LUXURY VINYL TILE

PLASTIC LAMINATE

RUBBER ACCESSORIES

RESILIENT WALL BASE

RECESSED FLOOR MAT

STATIC DISSIPATING TILE

STONE VENEER PANELS

TERRAZZO WALL BASE

VINYL COMPOSITION TILE WALL COVERING

TOILET PARTITIONS VINYL ACCESSORIES

WOOD VENEER WALK-OFF CARPET

SOLID SURFACING

STREET, STAIN

TERRAZZO

STONE

SEALED CONCRETE

RESILIENT RUBBER FLOORING

PORCELAIN TILE

PAINT

METAL CEILING PANEL

METAL FLOOR TRANSITION

CONCRETE

EPOXY PAINT

EXP CONST EXPOSED CONSTRUCTION

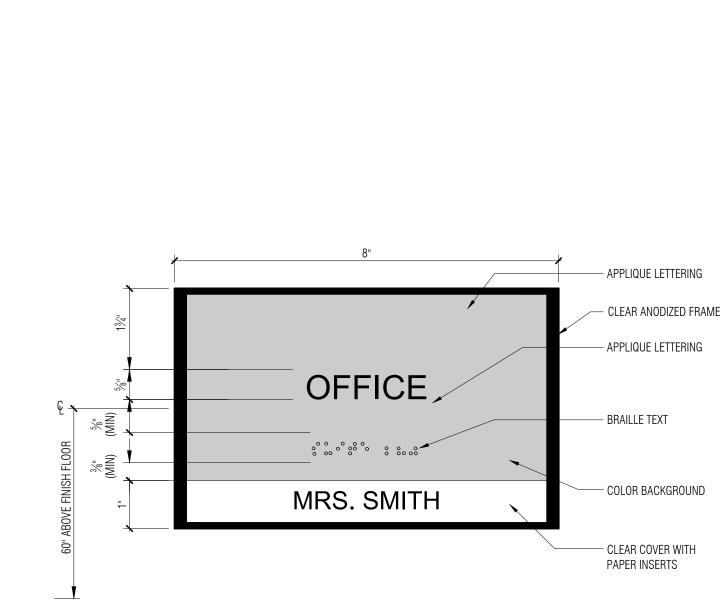
FACE BRICK

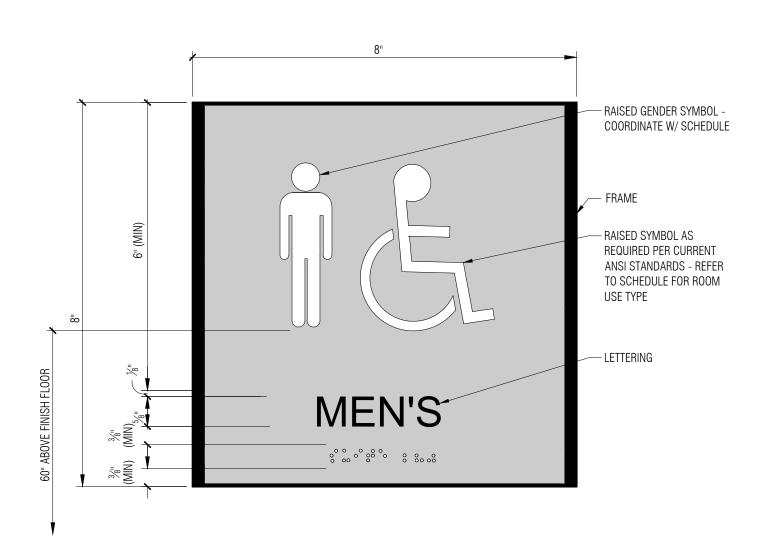
GYPSUM BOARD

CARPET CERAMIC TILE

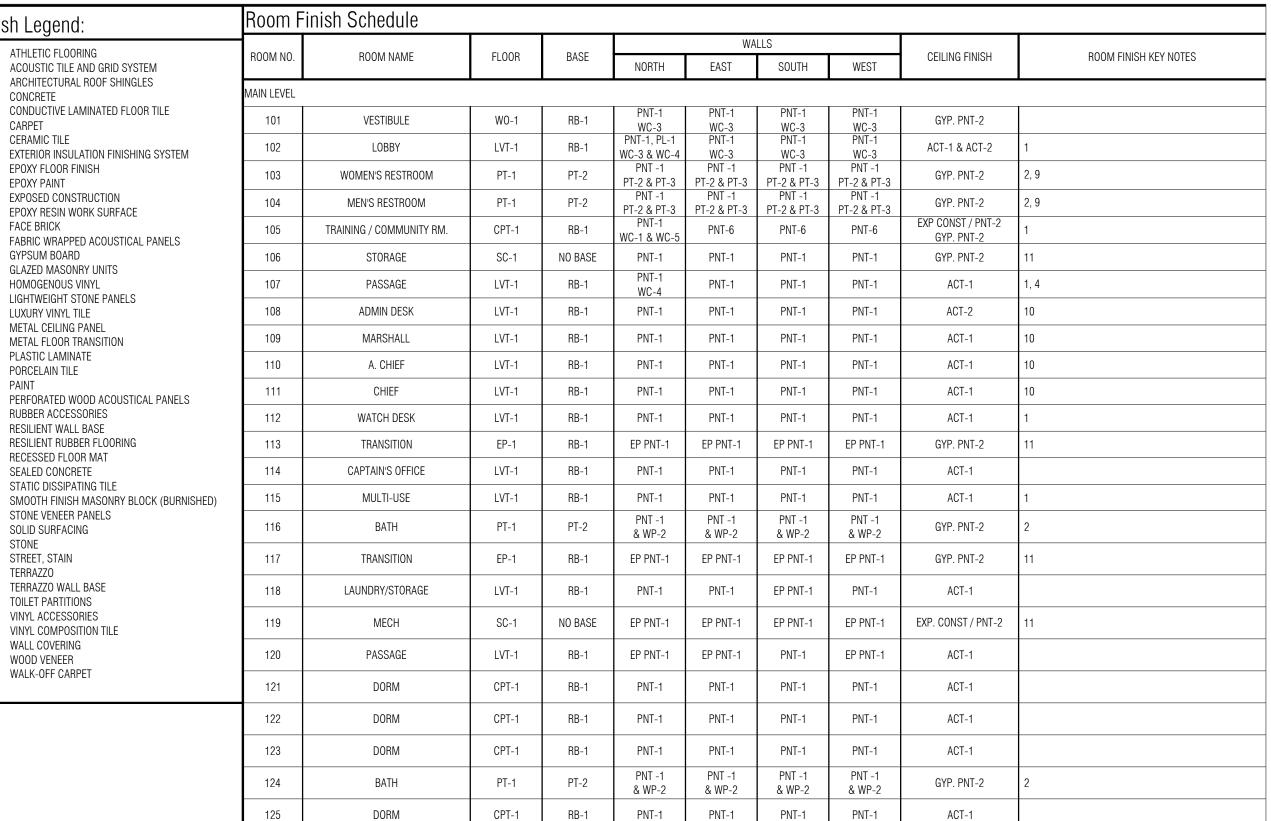
ACOUSTIC TILE AND GRID SYSTEM ARCHITECTURAL ROOF SHINGLES

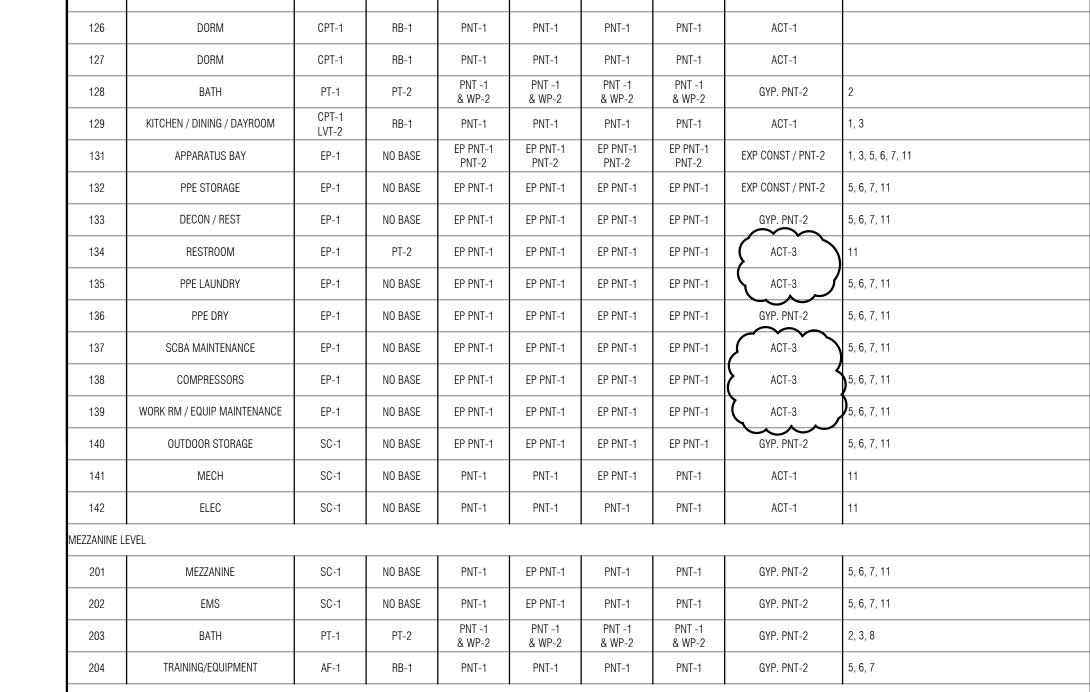




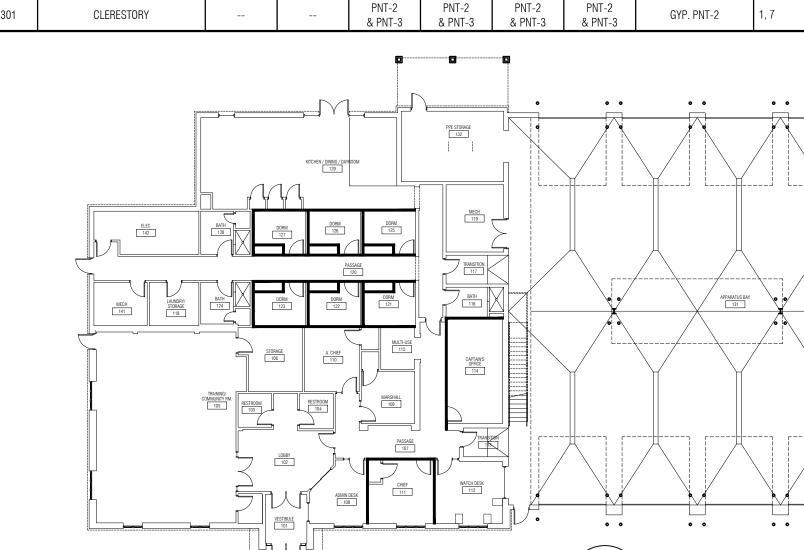








GYP. PNT-2



PARTNERS



PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

KEY PLAN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

DECON / REST

_

PPE LAUNDRY 135

PPE DRY

| Bidding - Construction | 03/27/20 |
|------------------------|----------|
| Addendum #1 | 04/20/20 |
| Construction Set | 05/04/20 |
| ASI #1 | 06/22/20 |
| PR #1 | 09/21/20 |
| | |

DRAWN BY

AR CHECKED BY

LL / AM APPROVED BY

SHEET NAME

ROOM FINISH SCHEDULE &

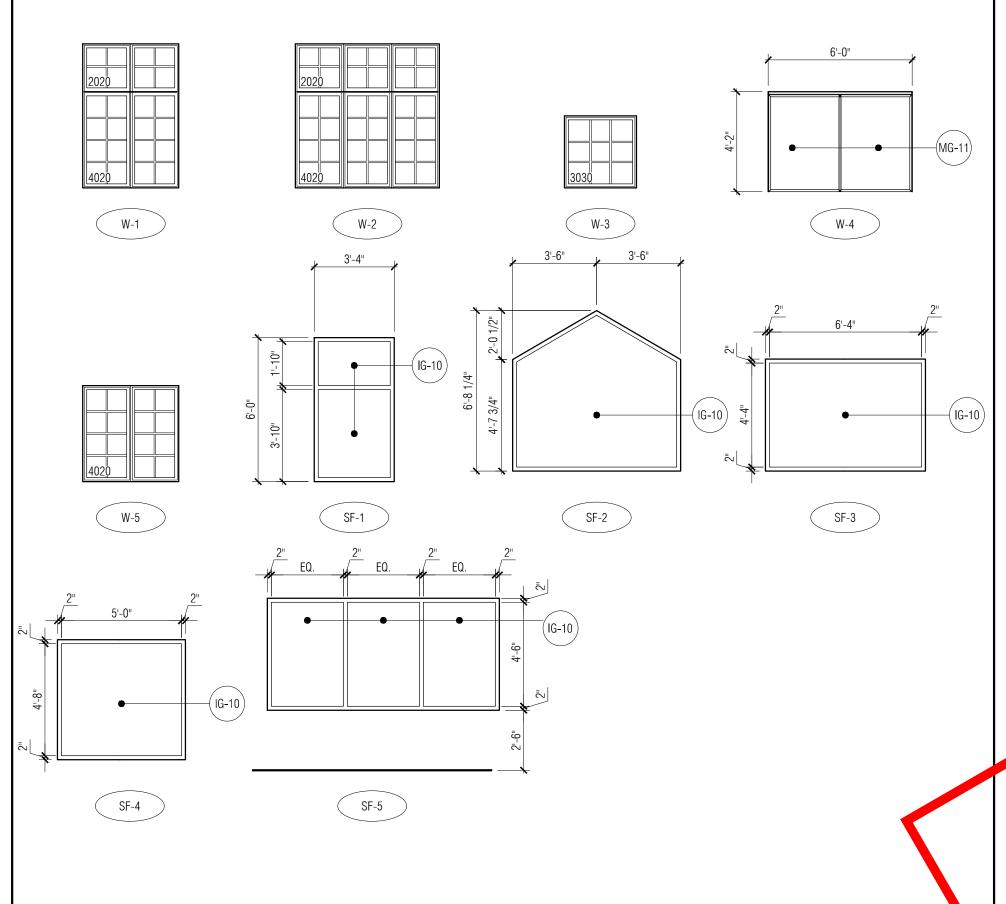
WALL TYPES

SHEET NO. A0-03

Walls to Deck Plan 1'' = 20'-0''

| Window Schedule | | | | | | | | | | | | | |
|-----------------|---------------------|--------------|----------------------|---------------|----------------------------|--------------|--|--|--|--|--|--|--|
| WINDOW NO | WINDOV | | DETAILS | | WWDOWNOTES | | | | | | | | |
| WINDOW NO. | STYLE | MATERIAL | HEAD | JAMB | SILL | WINDOW NOTES | | | | | | | |
| | | | | | | | | | | | | | |
| W-1 | CASEMENT FIXED | ALUM CLAD WD | 9/A6-10 & 1/A6-04 | D12 & D10 | 8/A6-10 & 8/A6-10 (SIM) | 1, 2 | | | | | | | |
| W-2 | CASEMENT FIXED | ALUM CLAD WD | 9/A6-10 & 6/A6-10 | D12 & D8 | 8/A6-10 & 5/A6-10 | 1, 2 | | | | | | | |
| W-3 | CASEMENT FIXED | ALUM CLAD WD | 5/A6-01 | | 4/A6-10 | 1, 2 | | | | | | | |
| W-4 | SLIDING TRANSACTION | ALUM | 5/A8-03 | | 5/A8-03 | 4 | | | | | | | |
| W-5 | CASEMENT FIXED | ALUM CLAD WD | 3/A6-02 | | 7/A6-10 | 5 | | | | | | | |
| | | | | | | | | | | | | | |
| SF-1 | STOREFRONT | ALUMINUM | 6/A6-10 (SIM) | D12 | 5/A6-10 (SIM) | | | | | | | | |
| SF-2 | STOREFRONT | ALUMINUM | 12/A6-10 | 7/A3-20 (SIM) | 2/A6-03 | | | | | | | | |
| SF-3 | STOREFRONT | ALUMINUM | D5 | D6 | D17 | | | | | | | | |
| SF-4 | STOREFRONT | ALUMINUM | 11/A8-03 | D14 (SIM) | 11/A8-03 | | | | | | | | |
| SF-5 | STOREFRONT | ALUMINUM | D7 | D8 | 5/A6-10 (SIM) | 3 | | | | | | | |
| | | | | | | | | | | | | | |

Window Types

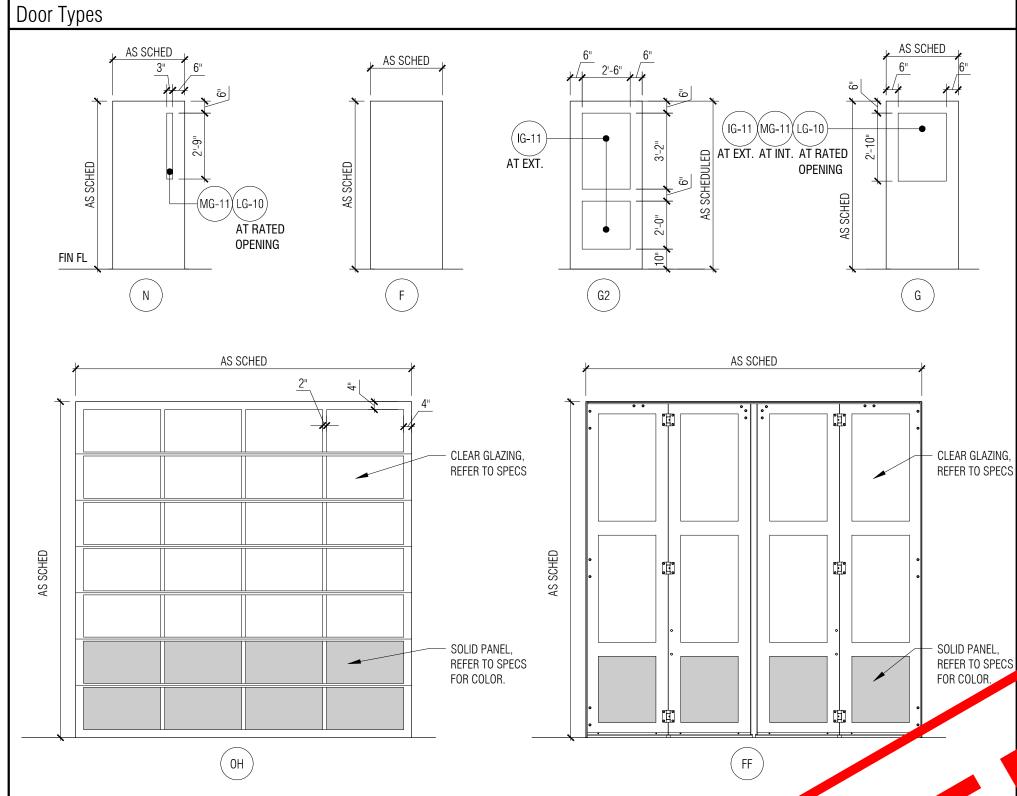


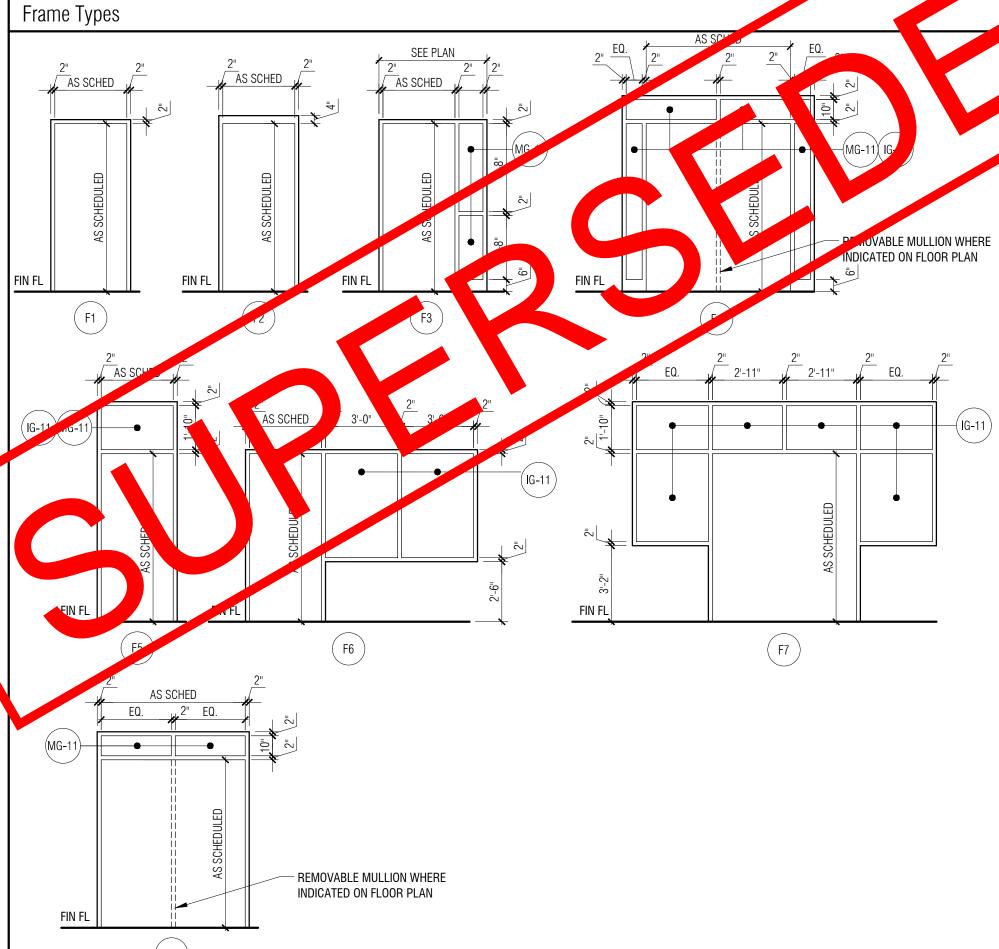
Window General Notes:

A. REFER TO SPECIFICATION FOR INTERIOR OR EXTERIOR FINISHES

Window Key Notes:

- REFER TO SPECIFICATIONS FOR BASIS OF DESIGN.
- REFER TO WINDOW TYPE AND MODEL NUMBER FOR DIMENSIONS.
- BASE BID IF ADD ALT # 3 IS NOT ACCEPTED REFER TO DOOR 204B. 4. TRANSACTION WINDOW AS SPECIFIED - REFER TO MANUFACTURERS DETAILS FOR HEAD, JAMB AND SILL INSTALLATION
- 5. DORMER WINDOW REFER TO ROOF PLAN A3-30





| FIN FL | | | | | | | |
|----------------|---------------|-------|---|--|---|---|--|
| | F8 | • | | | | | |
| | | | | | | | |
| Door / Opening | gs General No | otes: | | | | | |
| • | • | | • | | • | • | |

- A. FIELD VERIFY ALL OPENINGS PRIOR TO DOOR/FRAME FABRICATION. B. DOOR TYPE NAMING CONVENTIONS ARE BASED ON SDI 108-18 STANDARDS WHERE APPLICABLE.
- C. FIRE RATED LABEL DOORS AND FRAMES ARE LISTED IN MINUTES.
- D. REFER TO 087100 DOOR HARDWARE SPEC FOR SECTION NUMBERS.
- E. ALL WOOD DOORS TO BE SOLID CORE.
- DOORS WITH THE SYMBOL "- ON MAIN LEVEL FLOOR PLAN A3-01 ARE TO RECEIVE CARD KEY ACCESS. PROVIDE CONDUIT AND PULL STRING. INDICATE LOCATION OF CONDUIT ABOVE CEILING SYSTEM. REFER TO HARDWARE SPECIFICATIONS.
- G. REFER TO DETAILS ON A0-13 AND A0-14.

Door / Opening Key Notes:

- 1. REFER TO ALTERNATE #1.
- DOOR FRAME TO ALIGNED TO "APPARATUS BAY" SIDE OF CMU. 3. DOOR FRAME TO BE ALIGNED TO "PASSAGE" SIDE OF CMU. DOOR FRAME SHOULD ALIGN WITH END OF GYP. BD RETURN.
- 1/2" CONDUIT FOR ELECTRIFIED HARDWARE AND ACCESS CONTROL REFER TO ELEC. AND DOOR HARDWARE.
 DOOR IS PART OF <u>ADD ALT:</u> REPLACE WITH SF-5 (NO DOOR) IF NOT ACCEPTED REFER TO WINDOW TYPES.

| Door / | Opening Schedule | ; | | | | | | | | | | | |
|-------------|---|------|----------|----------|--------------|------------|--------|---------|-----------|------------------|----------|--------|---------------------------|
| DOOR NO. | DOOR / OPENING SIZE (W X H) (CONTRACTOR TO VERIFY DOOR | | DOOR | | | FRAME | | | DETAILS | TUDEC / | HARDWARE | LABEL | DOOR / OPENING KEY NOTES |
| DOON NO. | SIZE IF OPENING IS EXISTING) | TYPE | MATERIAL | FINISH | TYPE | MATERIAL | FINISH | HEAD | JAMB | THRES. / SILL | SET # | (MIN.) | BOOTH, OF ENING NET WOTES |
| MAIN LEVEL | | | | | | . | | | ı | | 1 | | |
| 101 | (2) 3'-0" X 7'-0" | G2 | ALUM | ANOD-1 | F4 | ALUM | ANOD-1 | 2/A6-03 | 7/A3-20 | T2 | 3.0 | | |
| 102 | (2) 3'-0" X 7'-0" | G2 | ALUM | ANOD-1 | F8 | ALUM | ANOD-1 | D13 | D14 | T3 | 8.0 | | 4 |
| 103 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | T8 | 20.0 | | |
| 104 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | Т8 | 20.0 | | |
| 105A | (2) 3'-0" X 7'-0" | G2 | ALUM | ANOD-1 | F4 | ALUM | ANOD-1 | D13 | D14 | T3 | 9.0 | | |
| 105B | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | | 16.0 | | |
| 105C | 3'-0" X 7'-0" | F | ALUM | ANOD-1 | F5 | ALUM | ANOD-1 | D11 | D12/D16 | T2 | 6.0 | | |
| 106 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | T2 | 17.0 | | |
| 107 | 3'-0" X 7'-0" | F | WD | ST-1 | F3 | HM | PNT-2 | D3 | D4 | | 11.0 | | 4 |
| 108 | 3'-0" X 7'-0" | F | WD | ST-1 | F3 | HM | PNT-2 | D3 | D4 | | 15.0 | | |
| 109A | 3'-0" X 7'-0" | F | WD | ST-1 | F3 | НМ | PNT-2 | D3 | D4 | | 15.0 | | |
| 109B | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | | 21.0 | | |
| 110A | 3'-0" X 7'-0" | F | WD | ST-1 | F3 | HM | PNT-2 | D3 | D4 | | 15.0 | | |
| 110B | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | | 21.0 | | |
| 111A | 3'-0" X 7'-0" | F | WD | ST-1 | F3 | HM | PNT-2 | D3 | D4 | | 15.0 | | |
| 111B | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | | 21.0 | | |
| | | | | | | | | | | | | | |
| 112 | 3'-0" X 7'-0" | F | WD | ST-1 | F3 | HM | PNT-2 | D3 | D4 | T0 | 15.0 | | |
| 113 | 3'-0" X 7'-0" | G | HM | PNT-2 | F1 | HM | PNT-2 | D5 | D6 | Т9 | 10.0 | 45 | 3 |
| 114 | 3'-0" X 7'-0" | F | WD | ST-1 | F3 | HM | PNT-2 | D3 | D4 | | 15.0 | | |
| 116 | 3 0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D1 | D2 | Т8 | 18.0 | | 3 |
| 117 | 3'-0 7'-0" | G | HM | PNT-2 | F1 | НМ | PNT-2 | D1 | D2 | Т9 | 10.0 | 45 | 3 |
| 118 | 3'-0" X / 0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | | 27.0 | | |
| 119 | (2) 3'-0" X 7'- | F | НМ | PNT-2 | F2 | НМ | PNT-2 | D1 | D2 | T1 | 14.0 | 45 | 2 |
| 120A | 3'-0" X 7'-0" | G | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | | 25.0 | 45 | |
| 120B | 3'-0" X 7'-0" | F | ALUM | ANOD-1 | F5 | ALUM | ANOD-1 | D11 | D8/D15 | T1 | 5.0 | | 4 |
| 121 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | T3 | 18.0 | | |
| 122 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | T3 | 18.0 | | |
| | 3'-0" X 7' | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | Т3 | 18.0 | | |
| 124A | o-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | Т8 | 18.0 | | |
| 124B | 2'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | | 21.0 | | |
| 125 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | T3 | 18.0 | | |
| 126 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | T3 | 18.0 | | |
| 127 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | T3 | 18.0 | | |
| 128A | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | Т8 | 19.0 | | |
| 128B | 2'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | | 21.0 | | |
| 129A | (2) 3'-0" X 7'-0" | G2 | ALUM | ANOD-1 | F7 | ALUM | ANOD-1 | 6/A6-10 | D8/D15 | T1 | 2.0 | | |
| | | | | | | | | (SIM) | | | | | |
| 129B | 2'-8" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | | 28.0 | | |
| 129C | 2'-8" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | | 28.0 | | |
| 129D | 2'-8" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | | 28.0 | | |
| 131A | 14'-0" X 14'-0" | OH | PREN | MANUFAC. | SECTION 0 | VERHEAD DO | OR | D19 | D18 / D20 | | 26.0 | | 1 |
| 131B | 14'-0" X 14'-0" | OH | | | | VERHEAD DO | | D19 | D18 | | 26.0 | | 1 |
| 131C | 14'-0" X 14'-0" | OH | PREN | MANUFAC. | SECTION 0 | VERHEAD DO | OR | D19 | D18 | | 26.0 | | 1 |
| 131D | 14'-0" X 14'-0" | OH | PREN | MANUFAC. | SECTION 0 | VERHEAD DO | OR | D19 | D18 / D20 | | 26.0 | | 1 |
| 131E | 14'-0" X 14'-0" | OH | PREN | MANUFAC. | SECTION 0 | VERHEAD DO | OR | D19 | D20 | | 26.0 | | 1 |
| 131F | 14'-0" X 14'-0" | ОН | PREN | MANUFAC. | SECTION 0 | VERHEAD DO | OR | D19 | D20 | | 26.0 | | 1 |
| 131G | 14'-0" X 14'-0" | ОН | PREN | MANUFAC. | SECTION 0 | VERHEAD DO | OR | D19 | D20 | | 26.0 | | 1 |
| 131H | 14'-0" X 14'-0" | ОН | PREN | MANUFAC. | SECTION 0 | VERHEAD DO | OR | D19 | D20 | | 26.0 | | 1 |
| 131J | 3'-0" X 7'-0" | N | FRP | | F2 | ALUM | ANOD-1 | D9 | D10 | T1 | 4.0 | | 4 |
| 131K | 3'-0" X 7'-0" | N | FRP | | F2 | ALUM | ANOD-1 | D9 | D10 | T1 | 4.0 | | |
| 132 | 3'-0" X 7'-0" | F | FRP | | F2 | ALUM | ANOD-1 | D11 | D12/D16 | T1 | 5.0 | | 4 |
| 133 | 3'-0" X 7'-0" | N | FRP | | F2 | ALUM | ANOD-1 | D9 | D10 | T1 | 5.0 | | 4 |
| 134A | 3'-0" X 7'-0" | F | НМ | PNT-2 | F2 | НМ | PNT-2 | D1 | D2 | | 18.0 | | |
| 134B | 3'-0" X 7'-0" | F | НМ | PNT-2 | F2 | НМ | PNT-2 | D1 | D2 | | 18.0 | | |
| 136 | (2) 3'-0" X 7'-0" | N | HM | PNT-2 | F2 | HM | PNT-2 | D1 | D2 | T1 | 22.0 | | 2 |
| 137 | 3'-0" X 7'-0" | N | HM | PNT-2 | F2 | HM | PNT-2 | D1 | D2 | T1 | 13.0 | | 2 |
| 138 | (2) 3'-0" X 7'-0" | F | HM | PNT-2 | гz F2 | HM | PNT-2 | D1 | D2 | T1 | 23.0 | | 2 |
| | | | | | | | | | | | | | |
| 140 | (2) 3'-0" X 7'-0" | F | FRP | CT 4 | F2 | ALUM | ANOD-1 | D9 | D10 | T1 | 7.0 | | |
| 141 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | T9 | 29.0 | | |
| 142 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | Т9 | 29.0 | | |
| | | | | | | | | | | | | | |
| MEZZANINE L | | | | | | T | | | <u> </u> | 1 | Γ | | |
| 202 | 3'-0" X 7'-0" | F | HM | PNT-2 | F1 | НМ | PNT-2 | D3 | D4 | | 12.0 | | |
| 203 | 3'-0" X 7'-0" | F | НМ | PNT-2 | F1 | НМ | PNT-2 | D3 | D4 | T6 | 18.0 | | |
| 204A | 3'-0" X 7'-0" | N | НМ | PNT-2 | F1 | НМ | PNT-2 | D3 | D4 | T5 | 24.0 | | |
| 204B | 3'-0" X 7'-0" | G | ALUM | ANOD-1 | F6 | ALUM | ANOD-1 | D7 | D8 | T2 | 1.0 | | 5 |
| | | | | | | | | | I | | I | | |

PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

Statement of Intellectual Property

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| Bidding - Construction | 03/27/20 |
|------------------------|----------|
| Addendum #1 | 04/20/20 |
| Construction Set | 05/04/20 |

DRAWN BY

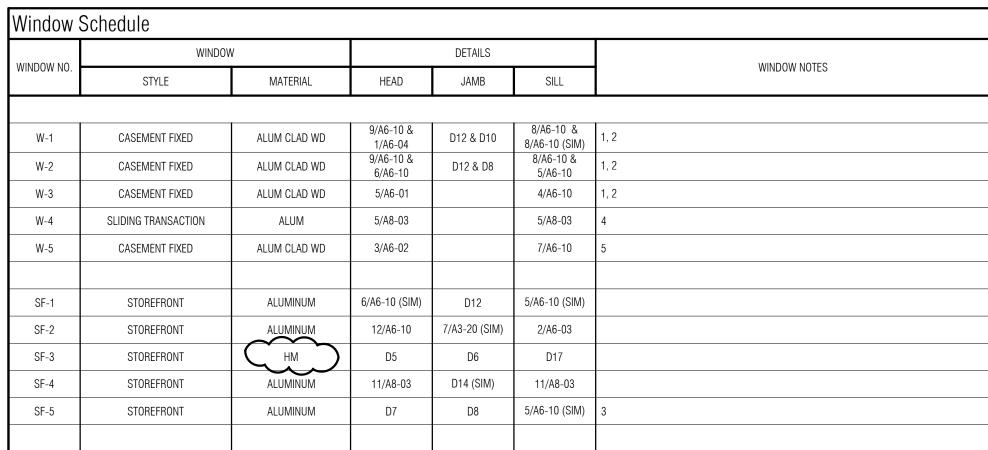
CHECKED BY LL / AM

APPROVED BY

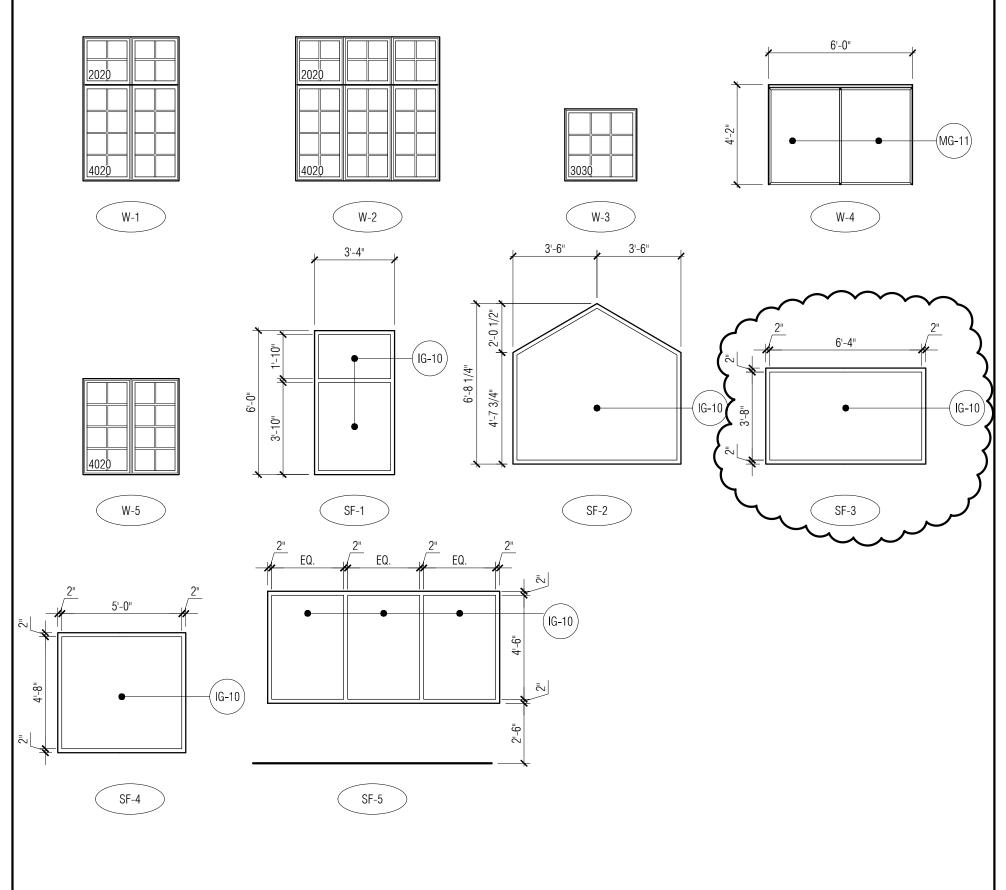
SHEET NAME

DOOR SCHEDULE & FRAME TYPES

SHEET NO. A0-04



Window Types

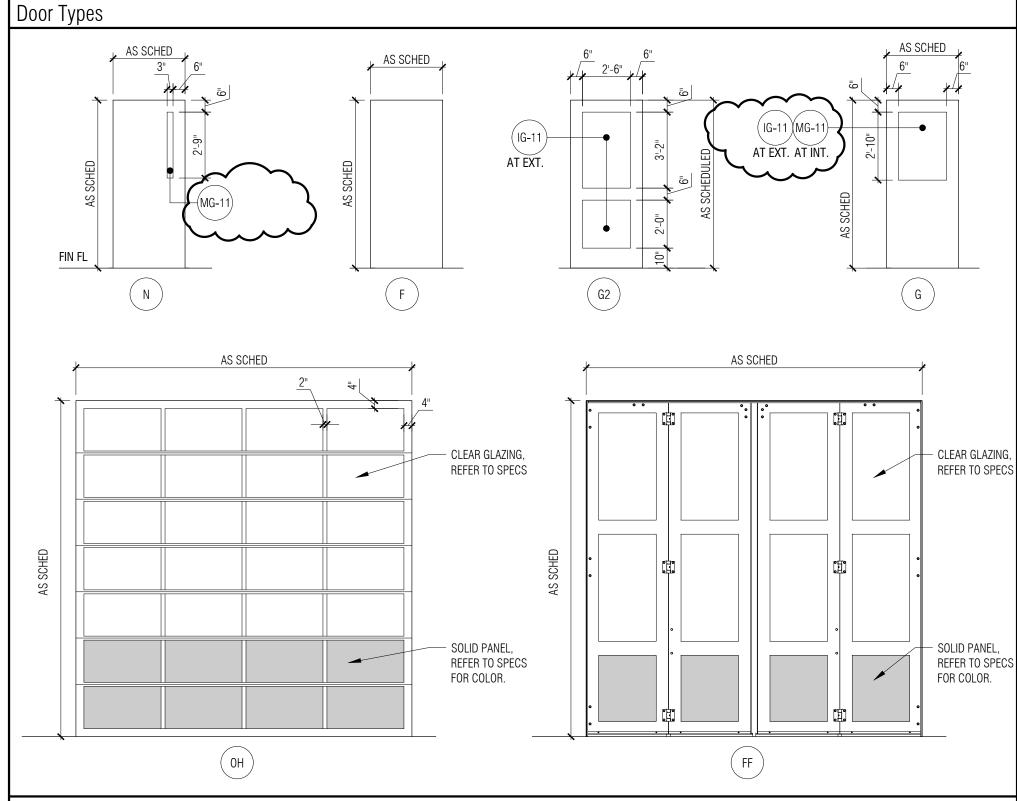


Window General Notes:

A. REFER TO SPECIFICATION FOR INTERIOR OR EXTERIOR FINISHES

Window Key Notes:

- REFER TO SPECIFICATIONS FOR BASIS OF DESIGN.
- REFER TO WINDOW TYPE AND MODEL NUMBER FOR DIMENSIONS.
- BASE BID IF ADD ALT # 3 IS NOT ACCEPTED REFER TO DOOR 204B. 4. TRANSACTION WINDOW AS SPECIFIED - REFER TO MANUFACTURERS DETAILS FOR HEAD, JAMB AND SILL INSTALLATION
- 5. DORMER WINDOW REFER TO ROOF PLAN A3-30



Frame Types REMOVABLE MULLION WHERE INDICATED ON FLOOR PLAN FIN FL FIN FL F7 F6 — REMOVABLE MULLION WHERE

| FIN FL F8 | INDICATED ON FLOOR PLAN | | |
|--|-------------------------|--|--|
| Door / Openings General Notes: | | | |
| A. FIELD VERIFY ALL OPENINGS PRIOR TO DOOR/FRAME | FABRICATION. | | |

- B. DOOR TYPE NAMING CONVENTIONS ARE BASED ON SDI 108-18 STANDARDS WHERE APPLICABLE.
- FIRE RATED LABEL DOORS AND FRAMES ARE LISTED IN MINUTES. D. REFER TO 087100 DOOR HARDWARE SPEC FOR SECTION NUMBERS.
- ALL WOOD DOORS TO BE SOLID CORE.
- DOORS WITH THE SYMBOL "- ON MAIN LEVEL FLOOR PLAN A3-01 ARE TO RECEIVE CARD KEY ACCESS. PROVIDE CONDUIT AND PULL STRING. INDICATE LOCATION OF CONDUIT ABOVE CEILING SYSTEM. REFER TO HARDWARE SPECIFICATIONS. G. REFER TO DETAILS ON A0-13 AND A0-14.

Door / Opening Key Notes:

- REFER TO ALTERNATE #1.
- DOOR FRAME TO ALIGNED TO "APPARATUS BAY" SIDE OF CMU.
- 3. DOOR FRAME TO BE ALIGNED TO "PASSAGE" SIDE OF CMU. DOOR FRAME SHOULD ALIGN WITH END OF GYP. BD RETURN.
- 1/2" CONDUIT FOR ELECTRIFIED HARDWARE AND ACCESS CONTROL REFER TO ELEC. AND DOOR HARDWARE.
 DOOR IS PART OF <u>ADD ALT:</u> REPLACE WITH SF-5 (NO DOOR) IF NOT ACCEPTED REFER TO WINDOW TYPES.

| | Opening Schedule | ' | | ı | | | | | | | | | <u> </u> |
|---------------|---|---------|------------|----------------|-----------|------------|-----------------|------------------|-----------|----------|-------------------|-----------------|--------------------------|
| DOOR NO. | DOOR / OPENING SIZE (W X H) (CONTRACTOR TO VERIFY DOOR | 7) (0.5 | DOOR | FINIOLI | 7.05 | FRAME | FINIOLI | LIEAD | DETAILS | THRES./ | HARDWARE SET # | LABEL (MIN.) | DOOR / OPENING KEY NOTES |
| 44141 51/51 | SIZE IF OPENING IS EXISTING) | TYPE | MATERIAL | FINISH | TYPE | MATERIAL | FINISH | HEAD | JAMB | SILL | OLI # | (141114.) | |
| MAIN LEVEL | (2) 3'-0" X 7'-0" | | ALLINA | ANOD-1 | F4 | ALUM | ANOD-1 | 2/A6-03 | 7// 2 20 | то | 2.0 | | |
| 101 | (2) 3'-0" X 7'-0" | G2 | ALUM | | F4 | | | | 7/A3-20 | T2 | 3.0 | | 4 |
| 102 | 3'-0" X 7'-0" | G2 F | ALUM WD | ANOD-1 ST-1 | F8 | ALUM HM | ANOD-1 PNT-2 | D13 | D14 D4 | T3 T8 | 8.0 | | 4 |
| 103 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | T8 | 20.0 | | |
| 105A | (2) 3'-0" X 7'-0" | G2 | ALUM | ANOD-1 | F4 | ALUM | ANOD-1 | D13 | D14 | T3 | 9.0 | | |
| 105A 105B | 3'-0" X 7'-0" | | WD | ST-1 | F1 | HM | PNT-2 | D13 | D14 | | 16.0 | | |
| 105C | 3'-0" X 7'-0" | ' F | ALUM | ANOD-1 | F5 | ALUM | ANOD-1 | D11 | D12/D16 | T2 | 6.0 | | |
| 106 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | T2 | 17.0 | | |
| 107 | 3'-0" X 7'-0" | ' F | WD | ST-1 | F3 | HM | PNT-2 | D3 | D4 | | 11.0 | | 4 |
| 108 | 3'-0" X 7'-0" | F | WD | ST-1 | F3 | HM | PNT-2 | D3 | D4 | | 15.0 | | ' |
| 109A | 3'-0" X 7'-0" | F | WD | ST-1 | F3 | HM | PNT-2 | D3 | D4 | | 15.0 | | |
| 109B | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | | 21.0 | | |
| 110A | 3'-0" X 7'-0" | F | WD | ST-1 | F3 | HM | PNT-2 | D3 | D4 | | 15.0 | | |
| 110B | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | | 21.0 | | |
| 111A | 3'-0" X 7'-0" | F | WD | ST-1 | F3 | HM | PNT-2 | D3 | D4 | | 15.0 | | |
| 111B | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | | 21.0 | | |
| 112 | 3'-0" X 7'-0" | F | WD | ST-1 | F3 | HM | PNT-2 | D3 | D4 | | 15.0 | | |
| 113 | 3'-0" X 7'-0" | G | НМ | PNT-2 | F1 | НМ | PNT-2 | D5 | D6 | T9 | 10.0 | | 3 |
| 114 | 3'-0" X 7'-0" | F | WD | ST-1 | F3 | НМ | PNT-2 | D3 | D4 | | 15.0 | | |
| 116 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D1 | D2 | T8 | 18.0 | | 3 |
| 117 | 3'-0" X 7'-0" | G | НМ | PNT-2 | F1 | HM | PNT-2 | D1 | D2 | Т9 | 10.0 | | 3 |
| 118 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | | 27.0 | \searrow | |
| 119 | (2) 3'-0" X 7'-0" | F | НМ | PNT-2 | F2 | HM | PNT-2 | D1 | D2 | T1 | 14.0 | | 2 |
| 120A | 3'-0" X 7'-0" | G | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | | 25.0 | |) |
| 120B | 3'-0" X 7'-0" | F | ALUM | ANOD-1 | F5 | ALUM | ANOD-1 | D11 | D8/D15 | T1 | 5.0 | | 4 |
| 121 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | T3 | 18.0 | 20 | |
| 122 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | T3 | 18.0 | 20 | ζ |
| 123 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | T3 | 18.0 | 20 | } |
| 124A | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | T8 | 18.0 | \ \ | |
| 124B | 2'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | | 21.0 | | |
| 125 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | T3 | 18.0 | 20 | |
| 126 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | T3 | 18.0 | 20 |) |
| 127 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | T3 | 18.0 | 20 | } |
| 128A | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | Т8 | 19.0 | $\bigg)$ | |
| 128B | 2'-0" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | | 21.0 | | |
| 129A | (2) 3'-0" X 7'-0" | G2 | ALUM | ANOD-1 | F7 | ALUM | ANOD-1 | 6/A6-10 (SIM) | D8/D15 | T1 | 2.0 | | |
| 129B | 2'-8" X 7'-0" | F | WD | ST-1 | F1 | НМ | PNT-2 | D3 | D4 | | 28.0 | | |
| 129C | 2'-8" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | | 28.0 | | |
| 129D | 2'-8" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | | 28.0 | | |
| 131A | 14'-0" X 14'-0" | OH | PREN | MANUFAC. | SECTION O | VERHEAD DO | DR | D19 | D18 / D20 | | 26.0 | | 1 |
| 131B | 14'-0" X 14'-0" | OH | PREN | MANUFAC. | SECTION O | VERHEAD DO | OR | D19 | D18 | | 26.0 | | 1 |
| 131C | 14'-0" X 14'-0" | OH | PREN | MANUFAC. | SECTION O | VERHEAD DO | OR | D19 | D18 | | 26.0 | | 1 |
| 131D | 14'-0" X 14'-0" | OH | PREN | MANUFAC. | SECTION O | VERHEAD DO | OR OR | D19 | D18 / D20 | | 26.0 | | 1 |
| 131E | 14'-0" X 14'-0" | OH | PREN | MANUFAC. | SECTION O | VERHEAD DO | OR . | D19 | D20 | | 26.0 | | 1 |
| 131F | 14'-0" X 14'-0" | OH | PREN | MANUFAC. | SECTION O | VERHEAD DO | OR | D19 | D20 | | 26.0 | | 1 |
| 131G | 14'-0" X 14'-0" | ОН | PREN | MANUFAC. | SECTION O | VERHEAD DO | OR . | D19 | D20 | | 26.0 | | 1 |
| 131H | 14'-0" X 14'-0" | ОН | PREN | MANUFAC. | SECTION O | VERHEAD DO | OR | D19 | D20 | | 26.0 | | 1 |
| 131J | 3'-0" X 7'-0" | N | FRP | | F2 | ALUM | ANOD-1 | D9 | D10 | T1 | 4.0 | | 4 |
| 131K | 3'-0" X 7'-0" | N | FRP | | F2 | ALUM | ANOD-1 | D9 | D10 | T1 | 4.0 | | |
| 132 | 3'-0" X 7'-0" | F | FRP | | F2 | ALUM | ANOD-1 | D11 | D12/D16 | T1 | 5.0 | | 4 |
| 133 | 3'-0" X 7'-0" | N | FRP | | F2 | ALUM | ANOD-1 | D9 | D10 | T1 | 5.0 | | 4 |
| 134A | 3'-0" X 7'-0" | F | НМ | PNT-2 | F2 | HM | PNT-2 | D1 | D2 | | 18.0 | | |
| 134B | 3'-0" X 7'-0" | F | НМ | PNT-2 | F2 | НМ | PNT-2 | D1 | D2 | | 18.0 | | |
| 136 | (2) 3'-0" X 7'-0" | N | НМ | PNT-2 | F2 | НМ | PNT-2 | D1 | D2 | T1 | 22.0 | | 2 |
| 137 | 3'-0" X 7'-0" | N | НМ | PNT-2 | F2 | HM | PNT-2 | D1 | D2 | T1 | 13.0 | | 2 |
| 138 | (2) 3'-0" X 7'-0" | F | HM | PNT-2 | F2 | HM | PNT-2 | D1 | D2 | T1 | 23.0 | | 2 |
| 140 | (2) 3'-0" X 7'-0" | F | FRP | | F2 | ALUM | ANOD-1 | D9 | D10 | T1 | 7.0 | | |
| 141 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | T9 | 29.0 | | |
| 142 | 3'-0" X 7'-0" | F | WD | ST-1 | F1 | HM | PNT-2 | D3 | D4 | T9 | 29.0 | | |
| | 3 5 7.7 | • | 5 | ' | | | | | | | | | |
| MEZZANINE L | <u>I</u> Level | | <u> </u> | <u> </u> | | İ | | | <u> </u> | | Ī | | <u> </u> |
| 202 | 3'-0" X 7'-0" | F | НМ | PNT-2 | F1 | НМ | PNT-2 | D3 | D4 | | 12.0 | | |
| | | ' | HM | PNT-2 | F1 | HM | PNT-2 | D3 | D4 | T6 | 18.0 | | |
| วกจ | 3'_0" X 7'_0" • | | 1.1100 | / | | 1 11 11 | / | | . ∪+ | 1.17 | . 10.0 | | |
| 203 204A | 3'-0" X 7'-0" 3'-0" X 7'-0" | | HM | PNT-2 | F1 | HM | PNT-2 | D3 | D4 | T5 | 24.0 | | |

PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

Statement of Intellectual Property

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| Bidding - Construction | 03/27/20 |
|------------------------|----------|
| Addendum #1 | 04/20/20 |
| CCD #4 | 09/01/20 |
| | |
| | |
| | |

DRAWN BY

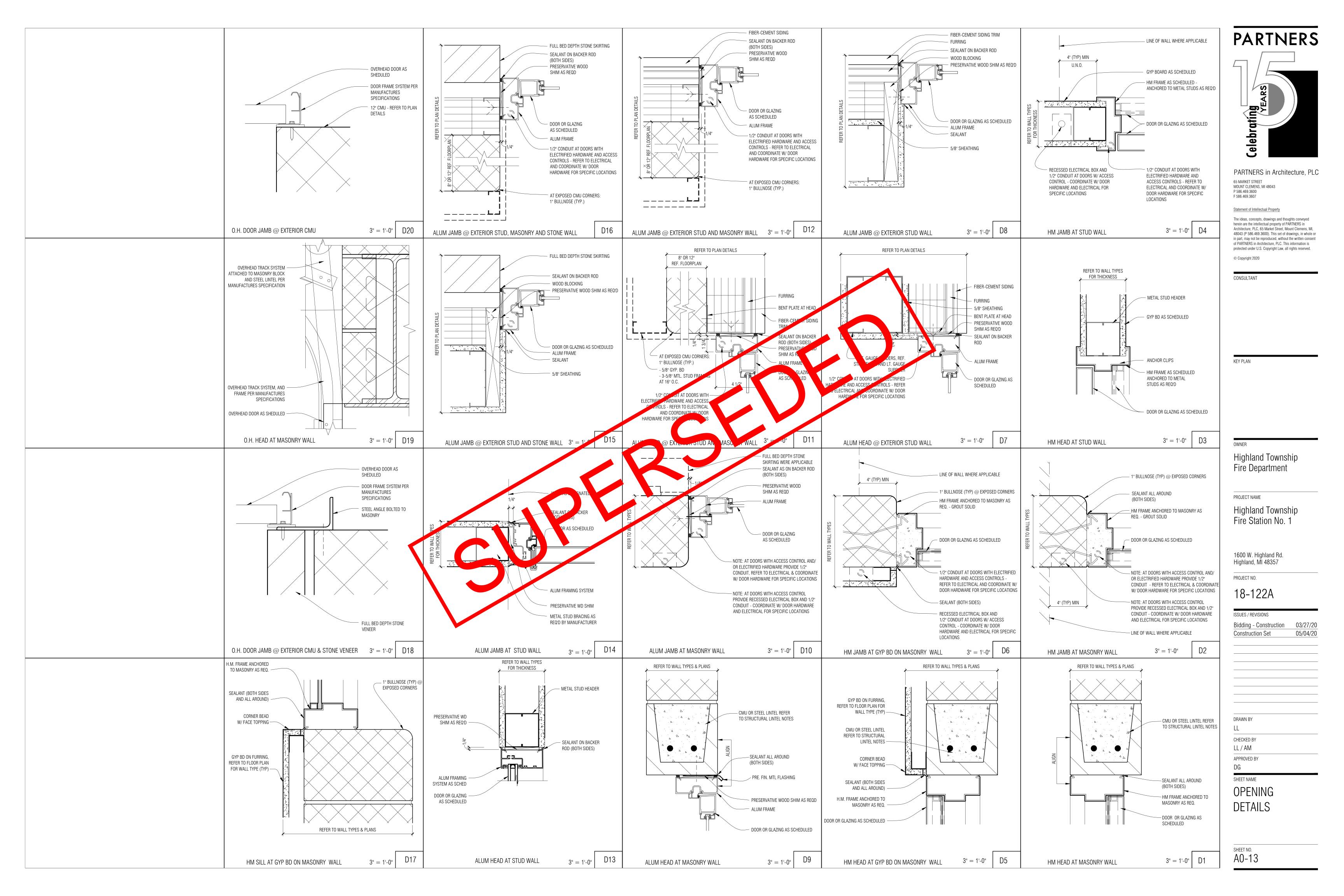
CHECKED BY LL / AM

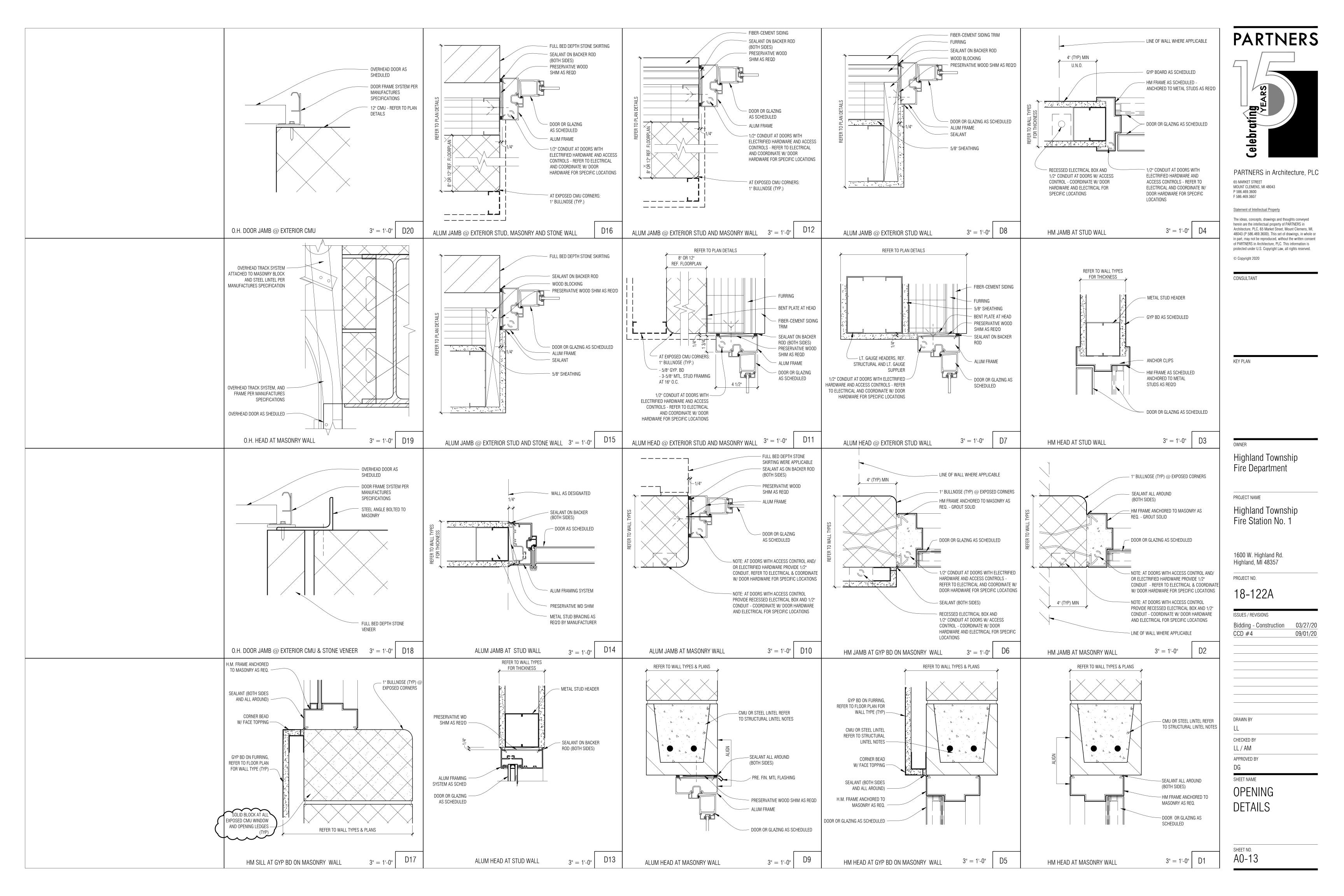
APPROVED BY

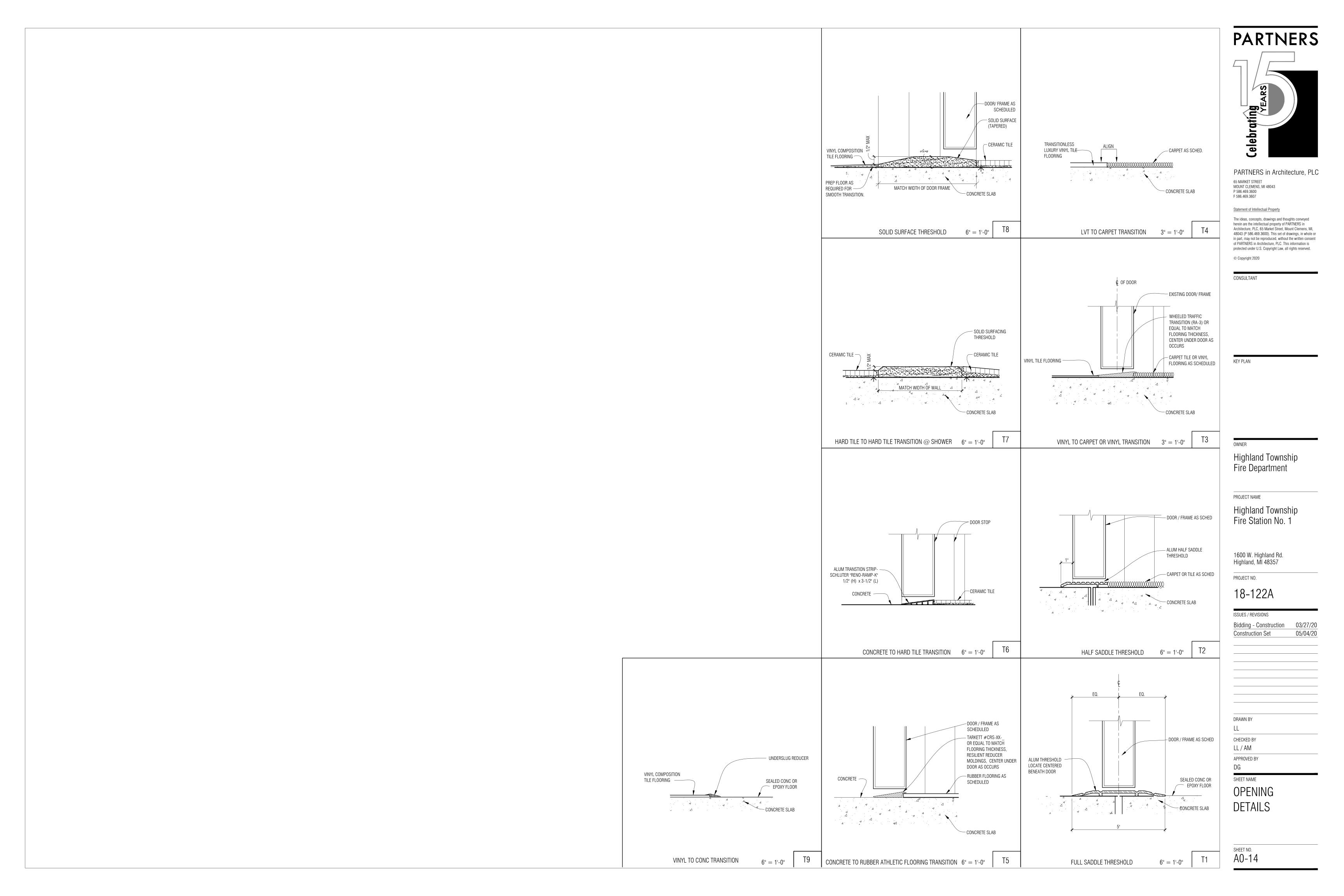
SHEET NAME

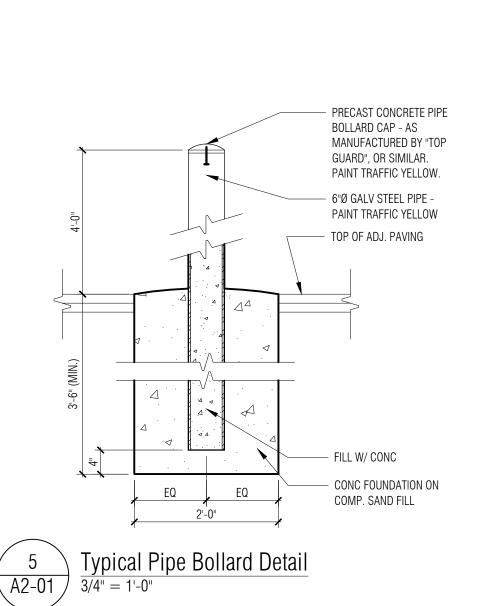
DOOR SCHEDULE & FRAME TYPES

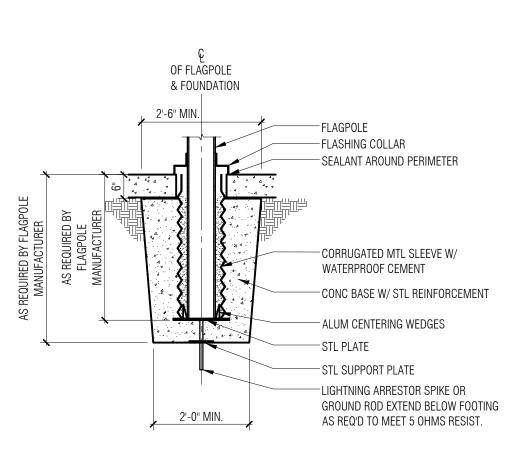
SHEET NO. A0-04



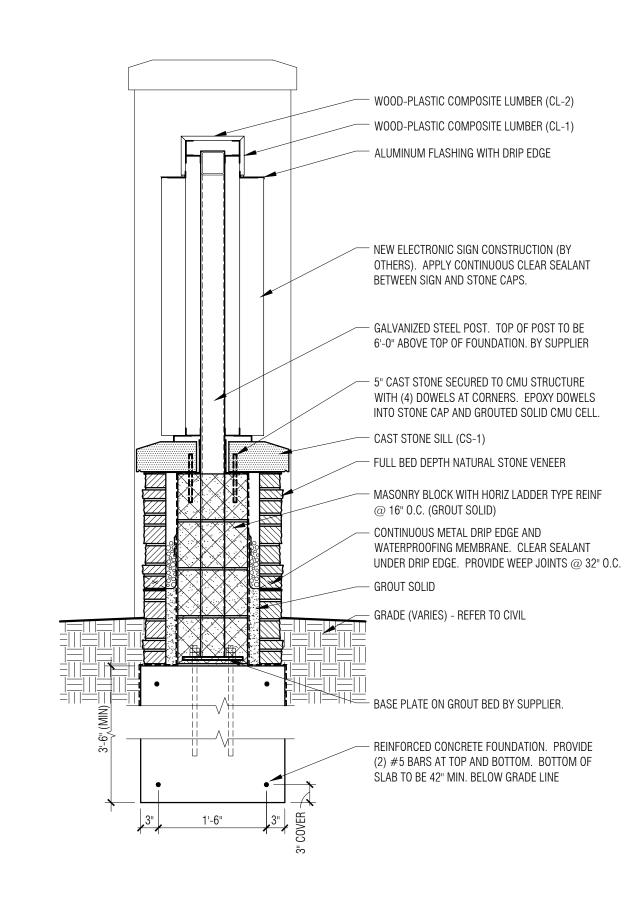




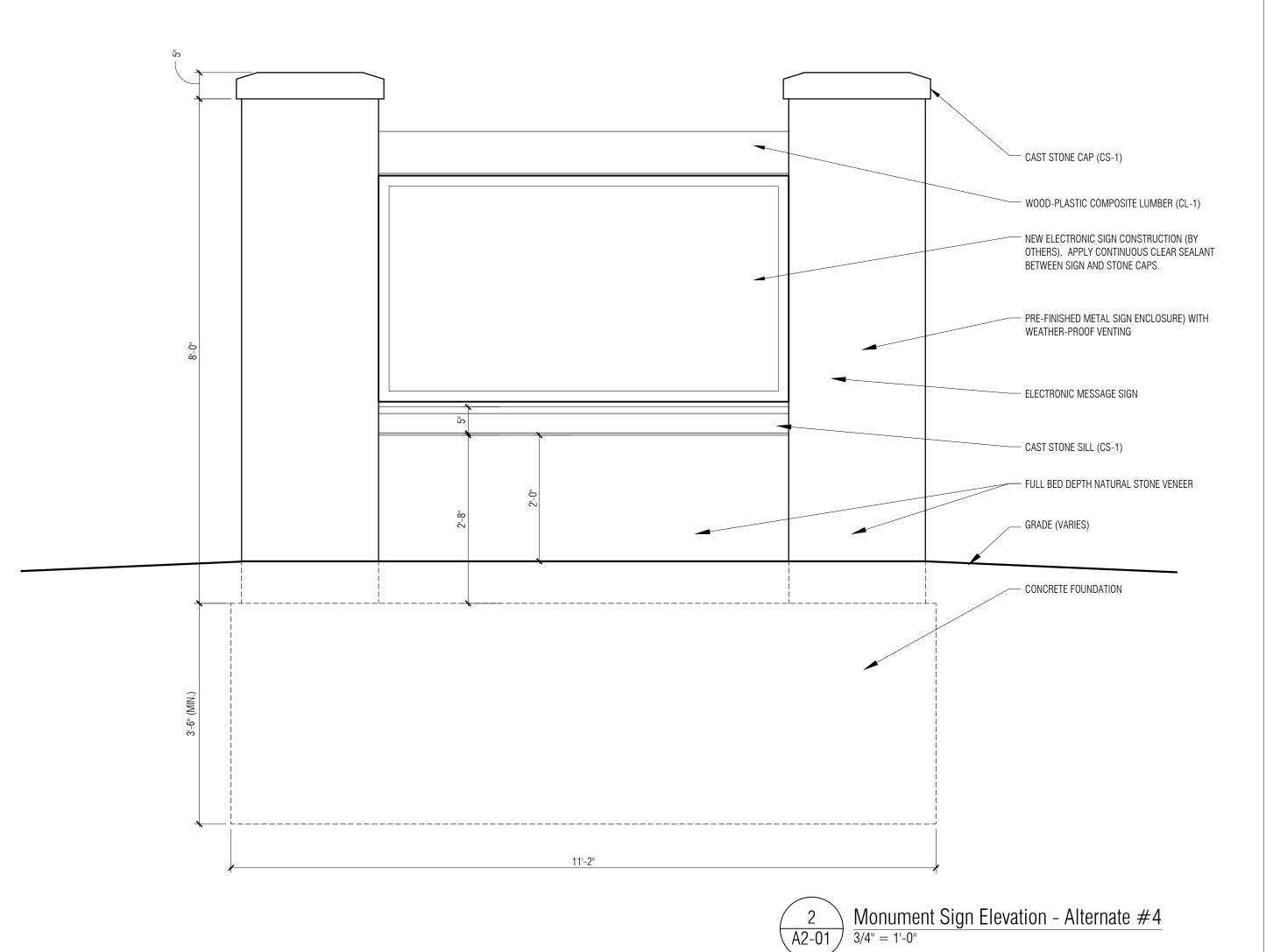


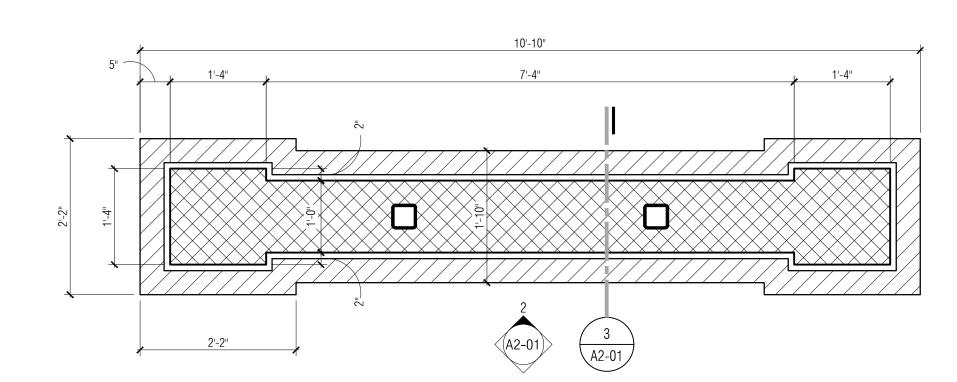












Monument Sign Plan - Alternate #4 4 = 1'-0"

PARTNERS



PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600

Statement of Intellectual Property

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

KEV DI A

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

Bidding - Construction 03/27/20
Addendum #1 04/20/20
Construction Set 05/04/20

DRAWN BY

CHECKED BY

APPROVED BY

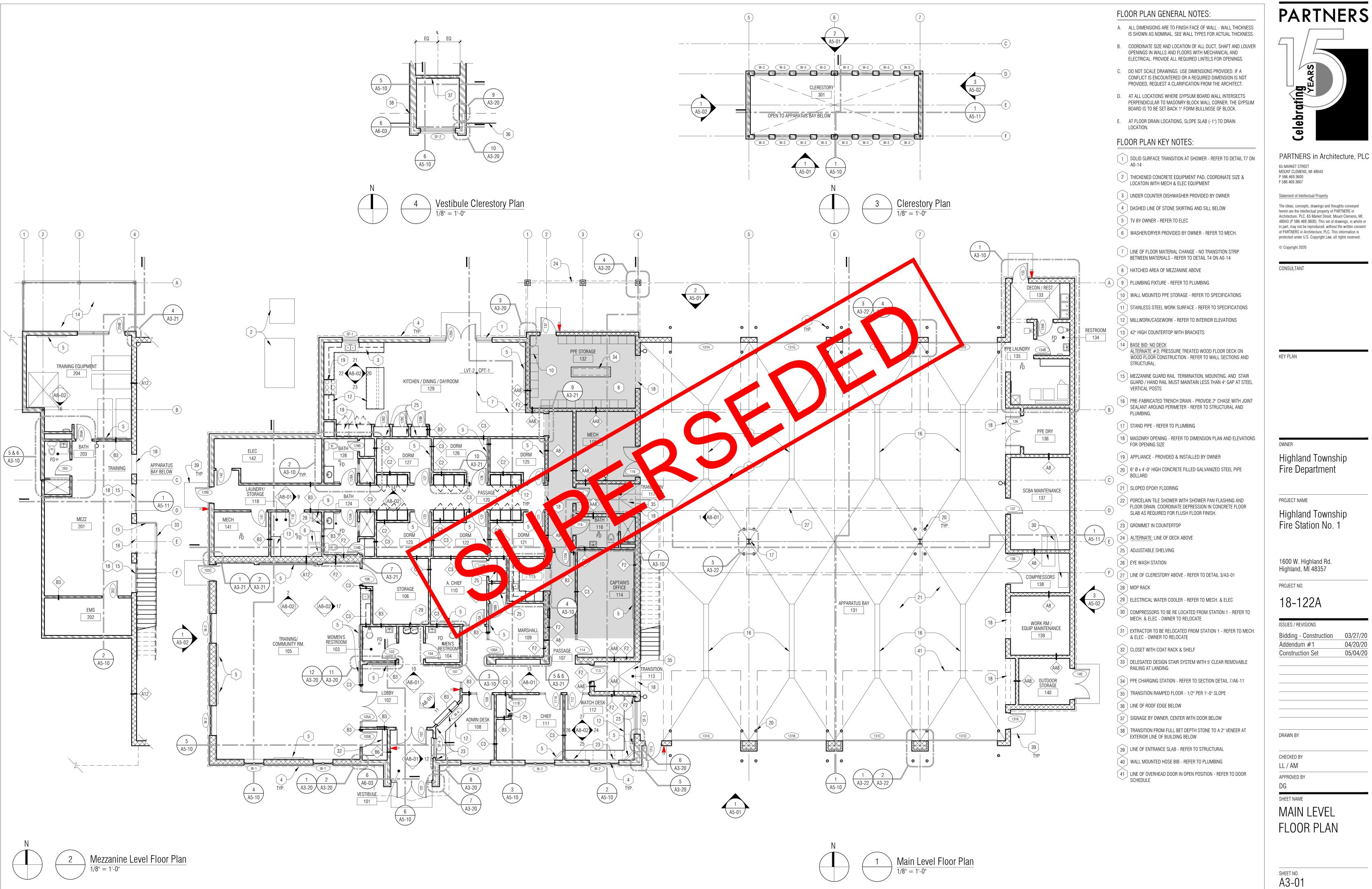
DC APPROVED BY

SHEET NAME

ARCHITECTURAL

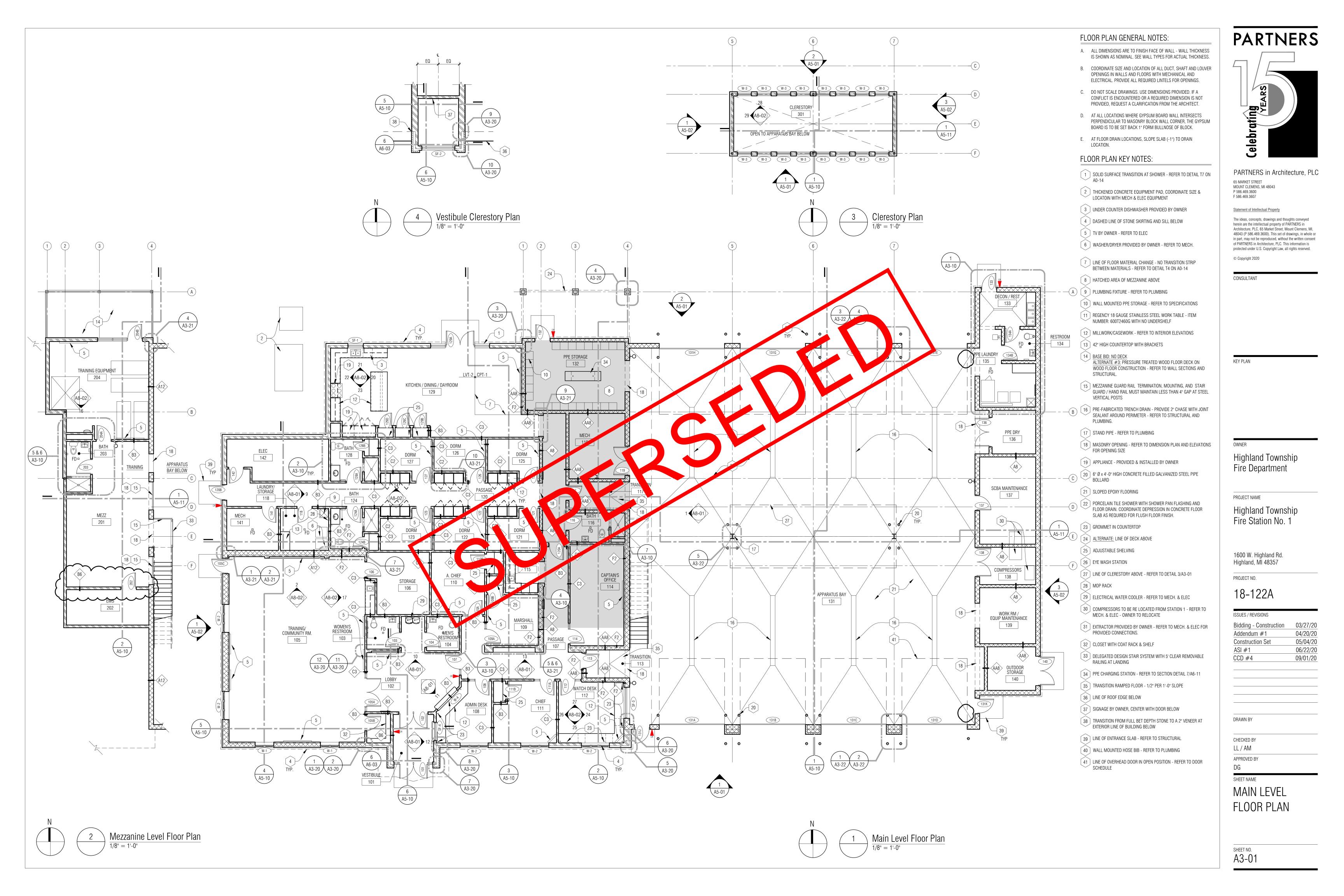
SITE PLAN DETAILS

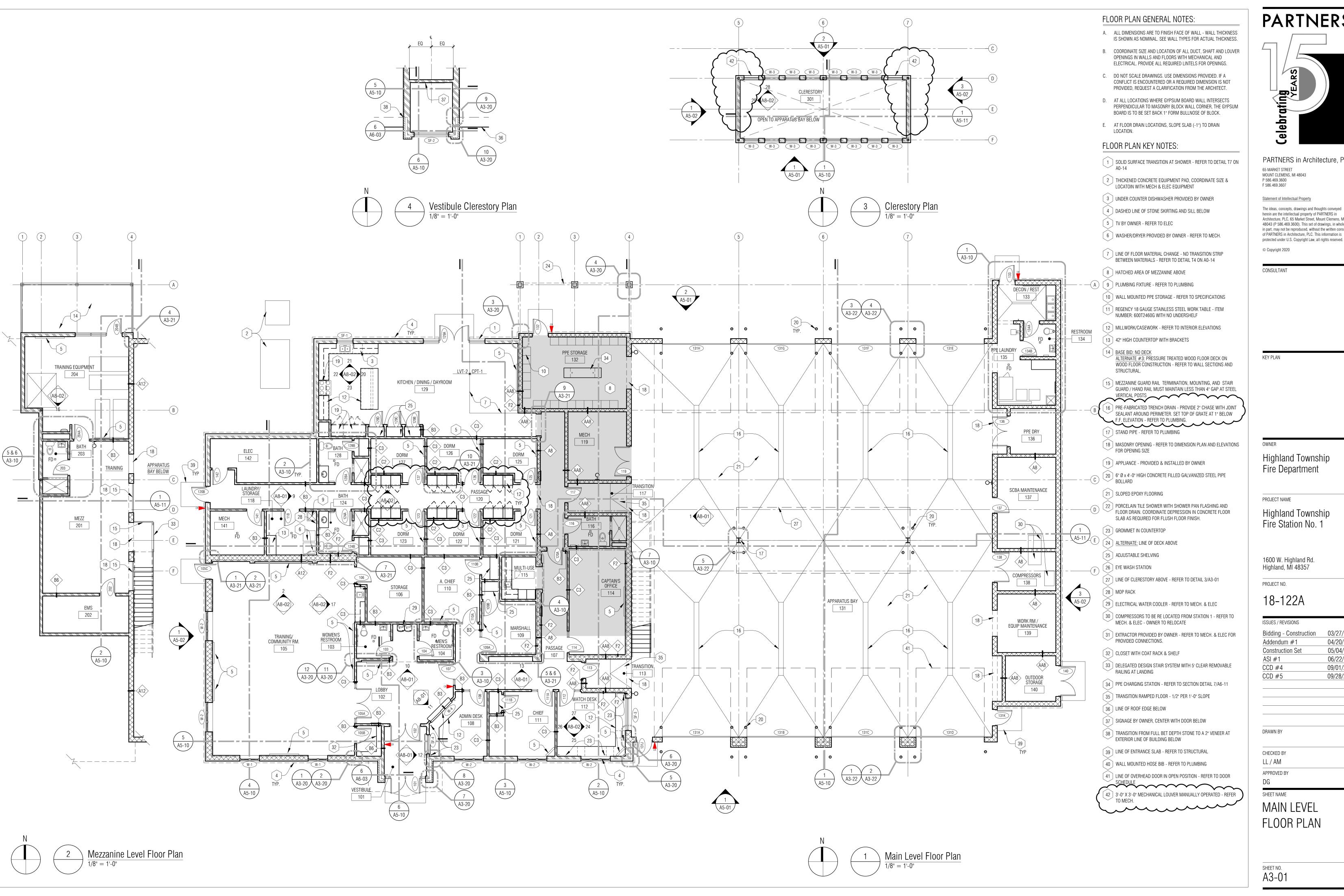
SHEET NO. A2-01





04/20/20 05/04/20





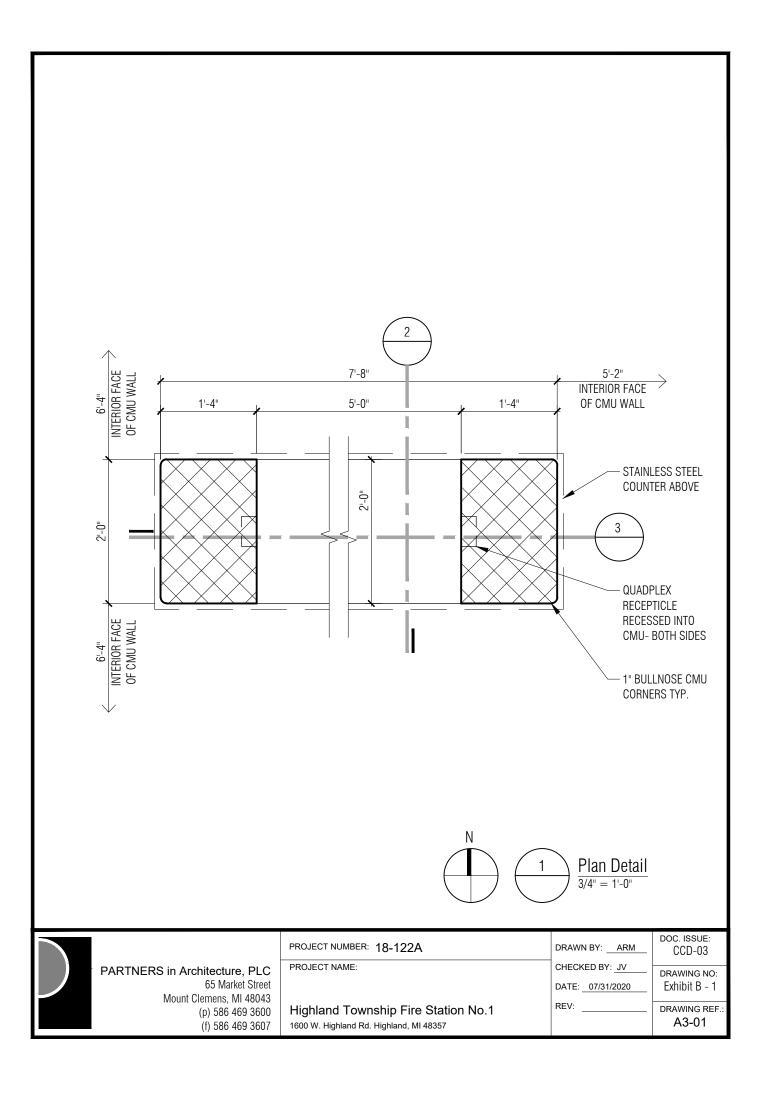


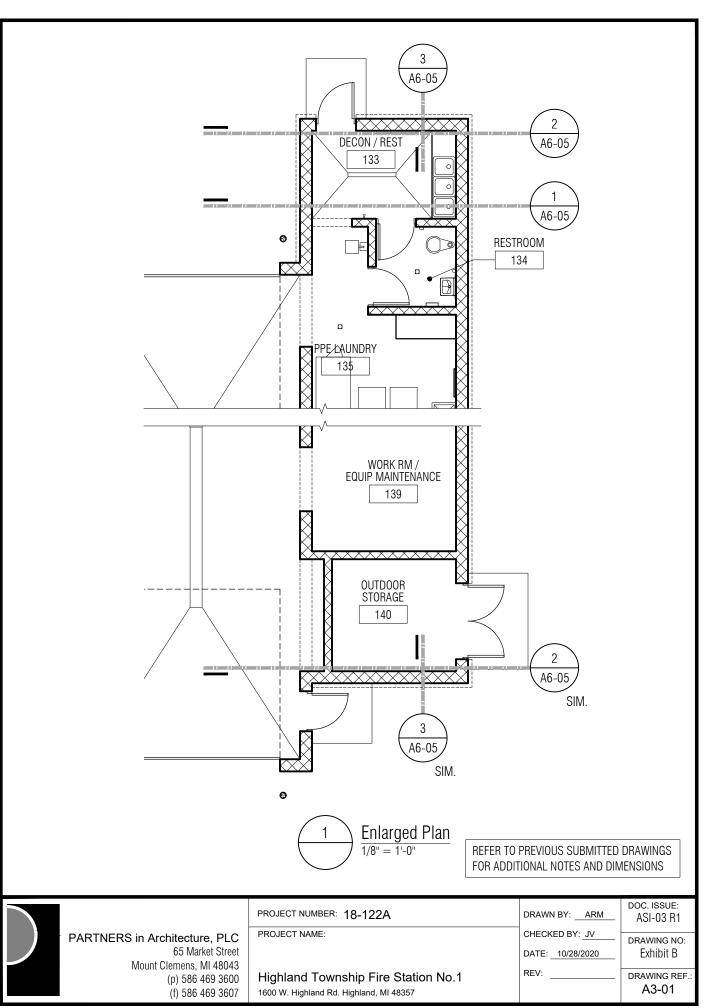
PARTNERS in Architecture, PLC

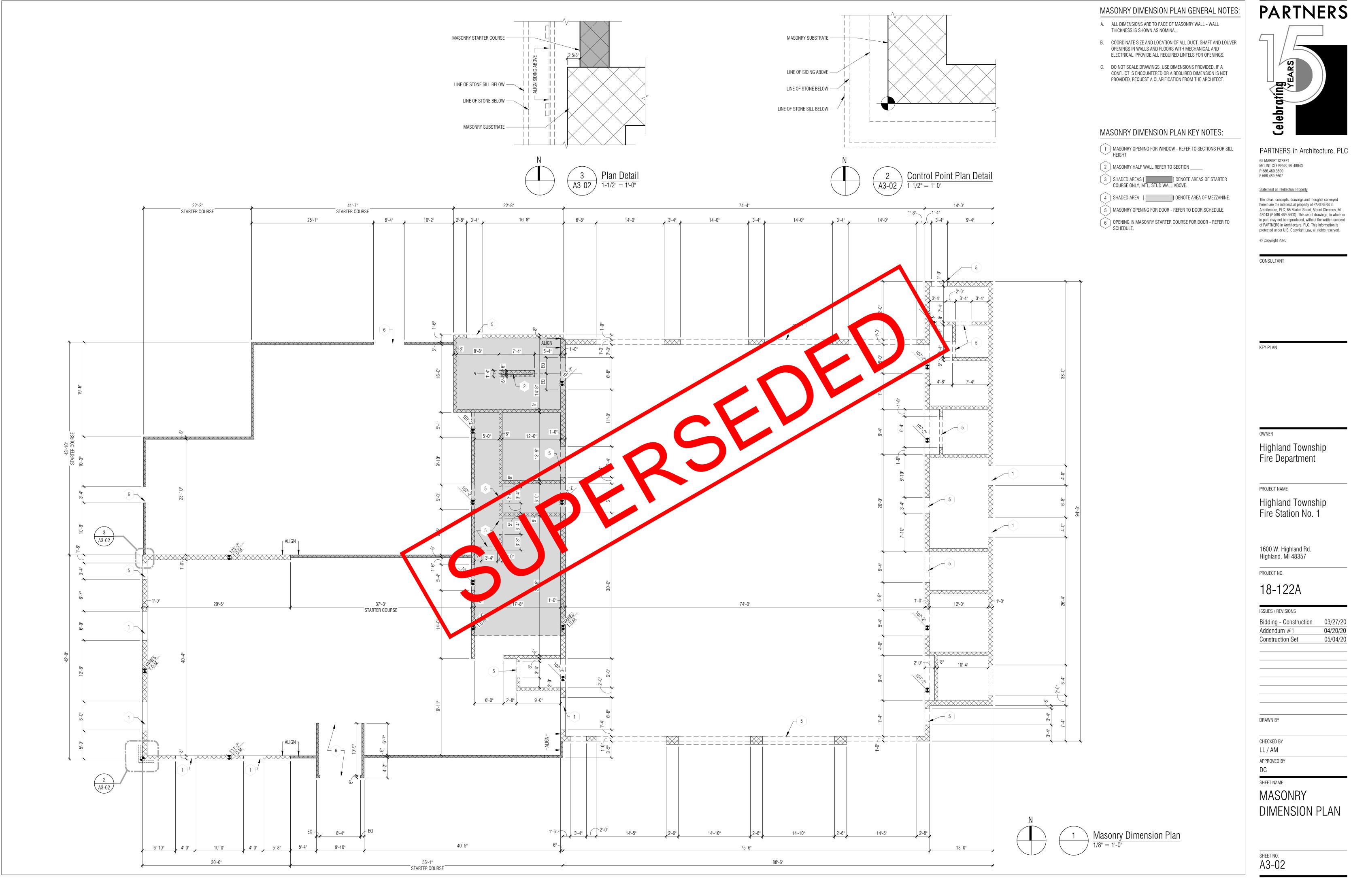
Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

Highland Township

| , | |
|------------------------|----------|
| Bidding - Construction | 03/27/20 |
| Addendum #1 | 04/20/20 |
| Construction Set | 05/04/20 |
| ASI #1 | 06/22/20 |
| CCD #4 | 09/01/20 |
| CCD #5 | 09/28/20 |
| | |

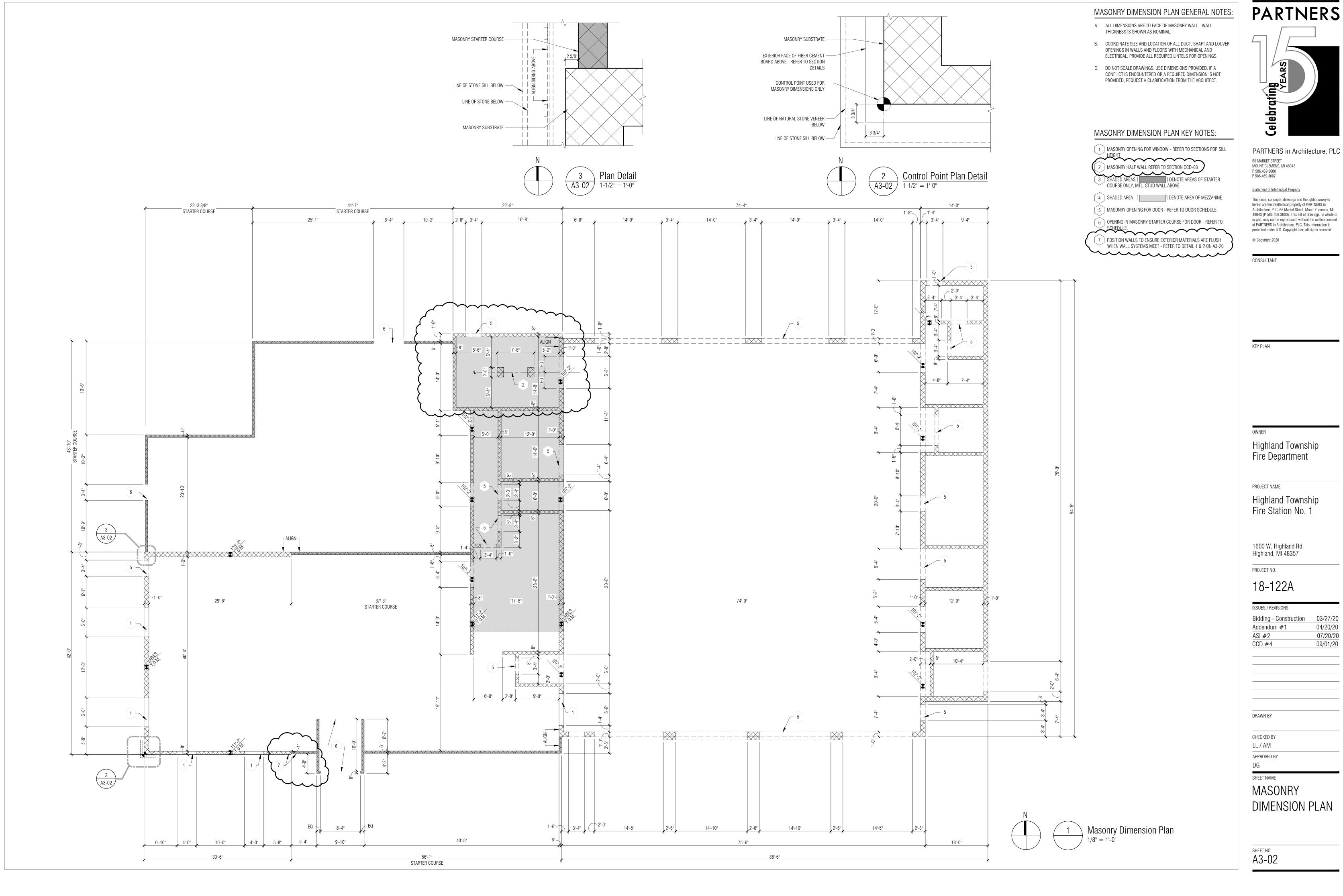






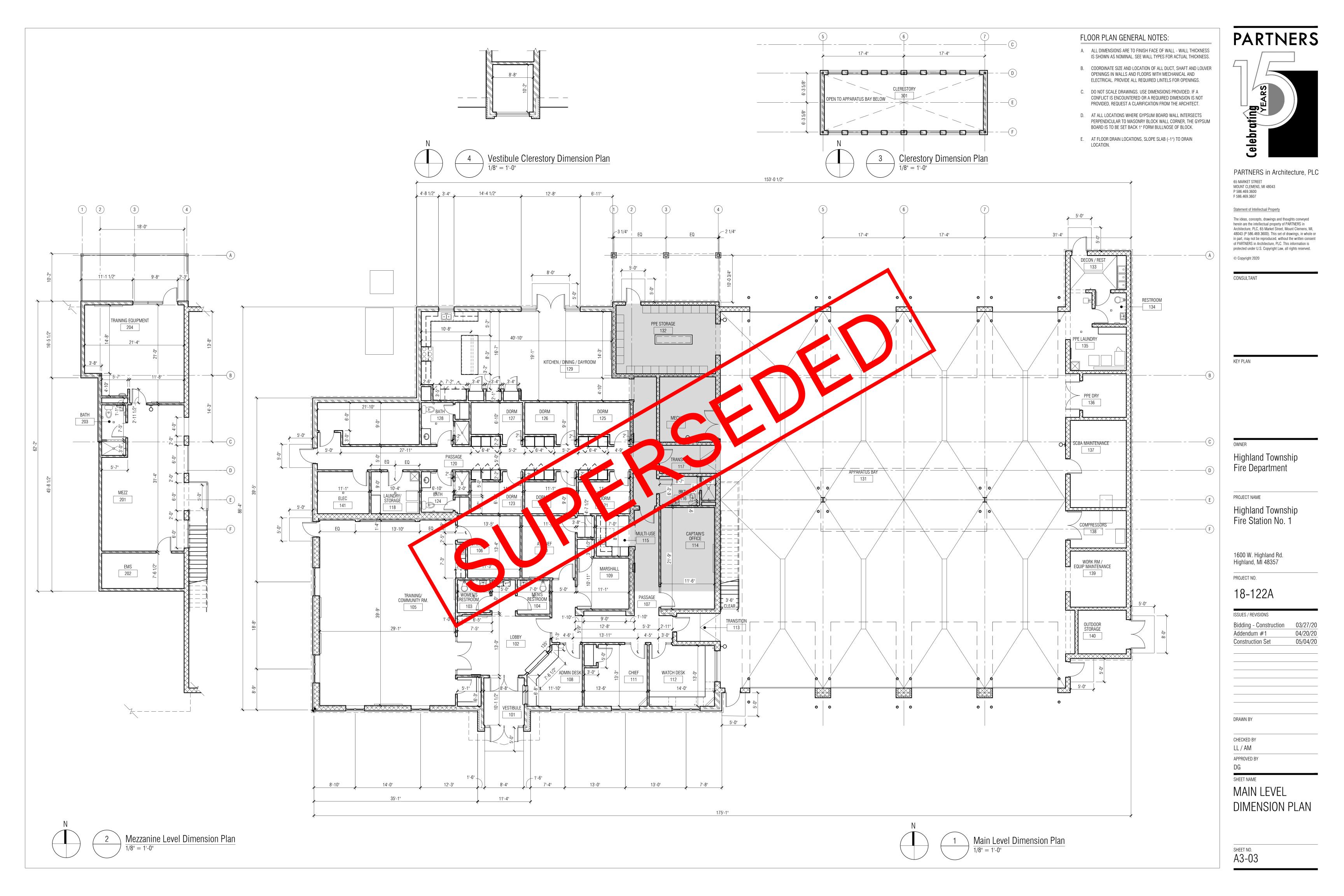
The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

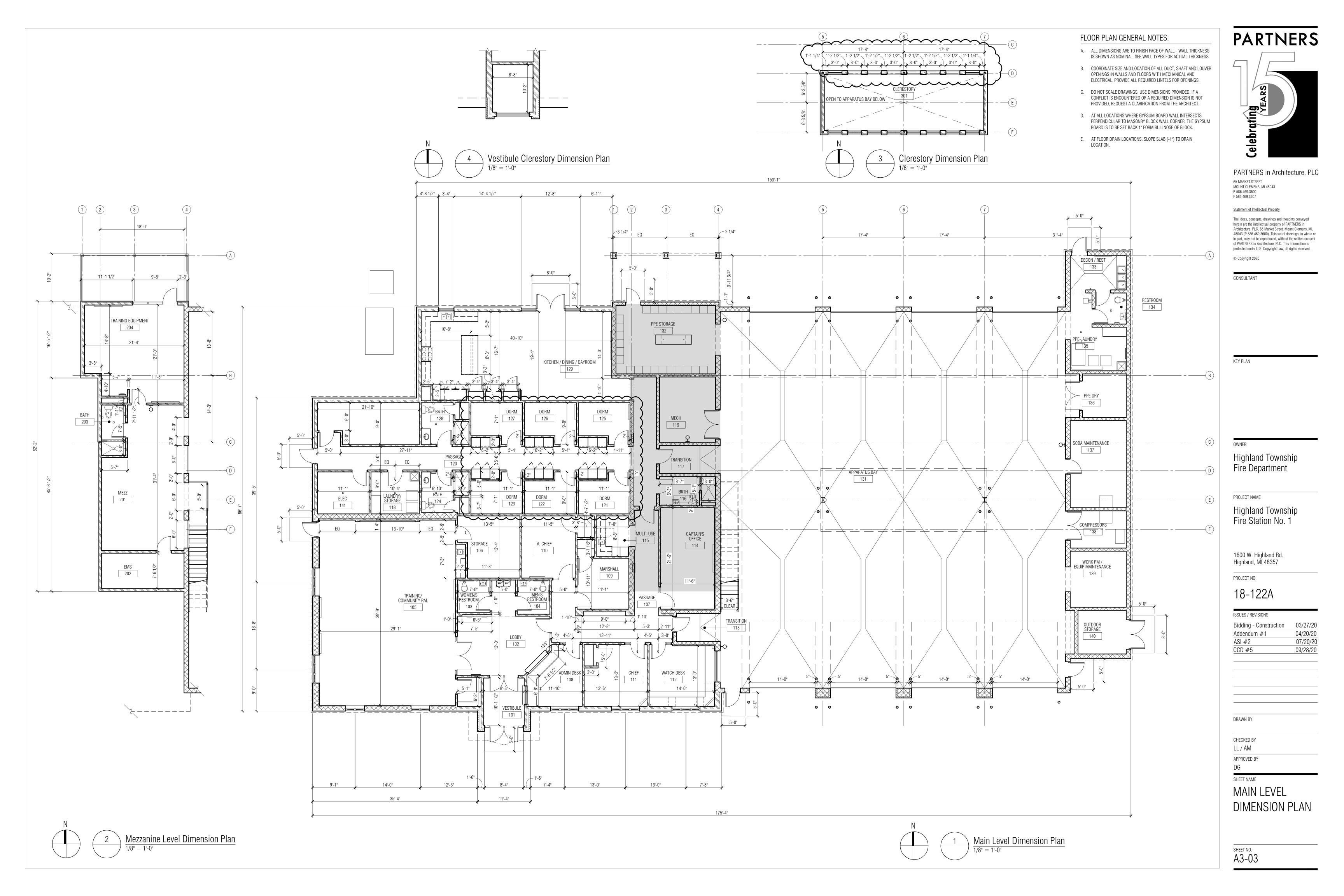
DIMENSION PLAN



Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent

| Bidding - Construction | 03/27/20 |
|------------------------|----------|
| Addendum #1 | 04/20/20 |
| ASI #2 | 07/20/20 |
| CCD #4 | 09/01/20 |
| | |





A3-21 201 \ A3-21/ Enlarged Plan - Bathroom 116 narged Floor Pl czzanine Level Enlarged Floor Plan - Alternate #2 Mezzanine Level F A3-01 1/4" = 1'-0"A3-01 1/4" = 1'-0"133 PPE LAUNDRY 135

Enlarged Plan - Bathroom 124 & 128

1/4" = 1'-0"

 $\frac{4}{A3-01}$ Enlarged Plan - Multi-Use

Enlarged Plan - Restroom 103 & 104

A3-01 $\frac{2.44 - 9.54}{1/4'' = 1'-0''}$

GENERAL NOTES - TOILET ACCESSORIES

- A. REFER TO SPECIFICATION SECTION 102800 FOR DESCRIPTION OF TOILET ACCESSORIES.
- B. REFER TO MECHANICAL PLANS FOR ALL PLUMBING FIXTURES.
- C. CENTER FLOOR DRAIN IN ROOM UON. ENSURE 1/8" PER FOOT SLOPE TOWARD FLOOR DRAINS. (TYP.)
- D. PROVIDE WD BLOCKING SUPPORT AT ALL GRAB BAR LOCATIONS PER
 - GRAB BAR MANUFACTURER'S RECOMMENDATION.

LEGEND - TOILET ACCESSORIES

- TA-1 42" GRAB BAR
- TA-2 36" GRAB BAR
- TA-3 18" GRAB BAR VERTICAL
- TA-4 WALL MOUNTED MIRROR
- TA-5 TOILET TISSUE DISPENSER
- TA-6 SURFACE MOUNTED SOAP DISPENSER
- TA-7 SHOWER CURTAIN ROD & HOOKS
- TA-8 PAPER TOWEL DISPENSER
- TA-9 ELECTRIC HAND DRIER
- TA-10 TOWEL HOOK
- TA-12 FREE STANDING WASTE RECEPTACLE (NOT SHOWN- PROVIDE 1 AT EACH RESTROOM)

- A. ALL DIMENSIONS ARE TO FINISH FACE OF WALL WALL THICKNESS IS SHOWN AS NOMINAL. SEE WALL TYPES FOR ACTUAL THICKNESS.
- B. COORDINATE SIZE AND LOCATION OF ALL DUCT, SHAFT AND LOUVER OPENINGS IN WALLS AND FLOORS WITH MECHANICAL AND ELECTRICAL. PROVIDE ALL REQUIRED LINTELS FOR OPENINGS.

PARTNERS

PARTNERS in Architecture, PLC

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in

Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or

in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

Celebr

65 MARKET STREET MOUNT CLEMENS, MI 48043

F 586.469.3607

© Copyright 2020

CONSULTANT

KEY PLAN

Highland Township

Highland Township

Fire Station No. 1

1600 W. Highland Rd. Highland, Ml 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

Addendum #1

Construction Set

Bidding - Construction 03/27/20

04/20/20

05/04/20

Fire Department

PROJECT NAME

Statement of Intellectual Property

- C. DO NOT SCALE DRAWINGS. USE DIMENSIONS PROVIDED. IF A CONFLICT IS ENCOUNTERED OR A REQUIRED DIMENSION IS NOT PROVIDED, REQUEST A CLARIFICATION FROM THE ARCHITECT.
- D. AT ALL LOCATIONS WHERE GYPSUM BOARD WALL INTERSECTS PERPENDICULAR TO MASONRY BLOCK WALL CORNER, THE GYPSUM BOARD IS TO BE SET BACK 1" FORM BULLNOSE OF BLOCK.
- E. AT FLOOR DRAIN LOCATIONS, SLOPE SLAB (-1") TO DRAIN

FLOOR PLAN KEY NOTES:

- 1 SOLID SURFACE TRANSITION AT SHOWER REFER TO DETAIL T7 ON A0-14
- 2 THICKENED CONCRETE EQUIPMENT PAD, COORDINATE SIZE &
- LOCATOIN WITH MECH & ELEC EQUIPMENT
- 3 UNDER COUNTER DISHWASHER PROVIDED BY OWNER 4 DASHED LINE OF STONE SKIRTING AND SILL BELOW
- 5 TV BY OWNER REFER TO ELEC
- [7] LINE OF FLOOR MATERIAL CHANGE NO TRANSITION STRIP

6 Washer/Dryer Provided by Owner - Refer to Mech.

- BETWEEN MATERIALS REFER TO DETAIL T4 ON A0-14
- 8 HATCHED AREA OF MEZZANINE ABOVE
- 9 PLUMBING FIXTURE REFER TO PLUMBING
- [10] WALL MOUNTED PPE STORAGE REFER TO SPECIFICATIONS
- 11 STAINLESS STEEL WORK SURFACE REFER TO SPECIFICATIONS
- 12 MILLWORK/CASEWORK REFER TO INTERIOR ELEVATIONS
- 13 42" HIGH COUNTERTOP WITH BRACKETS
- 14 BASE BID: NO DECK
- ALTERNATE #3: PRESSURE TREATED WOOD FLOOR DECK ON WOOD FLOOR CONSTRUCTION - REFER TO WALL SECTIONS AND STRUCTURAL.
- 15 MEZZANINE GUARD RAIL TERMINATION, MOUNTING, AND STAIR GUARD / HAND RAIL MUST MAINTAIN LESS THAN 4" GAP AT STEEL VERTICAL POSTS
- 16 PRE-FABRICATED TRENCH DRAIN PROVIDE 2" CHASE WITH JOINT SEALANT AROUND PERIMETER - REFER TO STRUCTURAL AND PLUMBING.
- 17 STAND PIPE REFER TO PLUMBING
- 18 MASONRY OPENING REFER TO DIMENSION PLAN AND ELEVATIONS FOR OPENING SIZE
- 19 APPLIANCE PROVIDED & INSTALLED BY OWNER
- 20 6" Ø x 4'-0" HIGH CONCRETE FILLED GALVANIZED STEEL PIPE BOLLARD
- 21 SLOPED EPOXY FLOORING
- 22 PORCELAIN TILE SHOWER WITH SHOWER PAN FLASHING AND FLOOR DRAIN. COORDINATE DEPRESSION IN CONCRETE FLOOR SLAB AS REQUIRED FOR FLUSH FLOOR FINISH.
- 23 GROMMET IN COUNTERTOP
- 24 ALTERNATE: LINE OF DECK ABOVE
- 25 ADJUSTABLE SHELVING
- [26] EYE WASH STATION
- 28 MOP RACK

27 LINE OF CLERESTORY ABOVE - REFER TO DETAIL 3/A3-01

- 29 ELECTRICAL WATER COOLER REFER TO MECH. & ELEC
- COMPRESSORS TO BE RE LOCATED FROM STATION 1 REFER TO MECH. & ELEC OWNER TO RELOCATE
- EXTRACTOR TO BE RELOCATED FROM STATION 1 REFER TO MECH. & ELEC OWNER TO RELOCATE 32 CLOSET WITH COAT RACK & SHELF

RAILING AT LANDING

- [33] DELEGATED DESIGN STAIR SYSTEM WITH 5' CLEAR REMOVABLE
- 34 PPE CHARGING STATION REFER TO SECTION DETAIL 7/A6-11
- 35 TRANSITION RAMPED FLOOR 1/2" PER 1'-0" SLOPE
- 36 LINE OF ROOF EDGE BELOW
- 37 SIGNAGE BY OWNER, CENTER WITH DOOR BELOW
- TRANSITION FROM FULL BET DEPTH STONE TO A 2" VENEER AT EXTERIOR LINE OF BUILDING BELOW
- 39 LINE OF ENTRANCE SLAB REFER TO STRUCTURAL
- 40 WALL MOUNTED HOSE BIB REFER TO PLUMBING
- 41 LINE OF OVERHEAD DOOR IN OPEN POSITION REFER TO DOOR

ENLARGED FLOOR PLANS

DRAWN BY

CHECKED BY

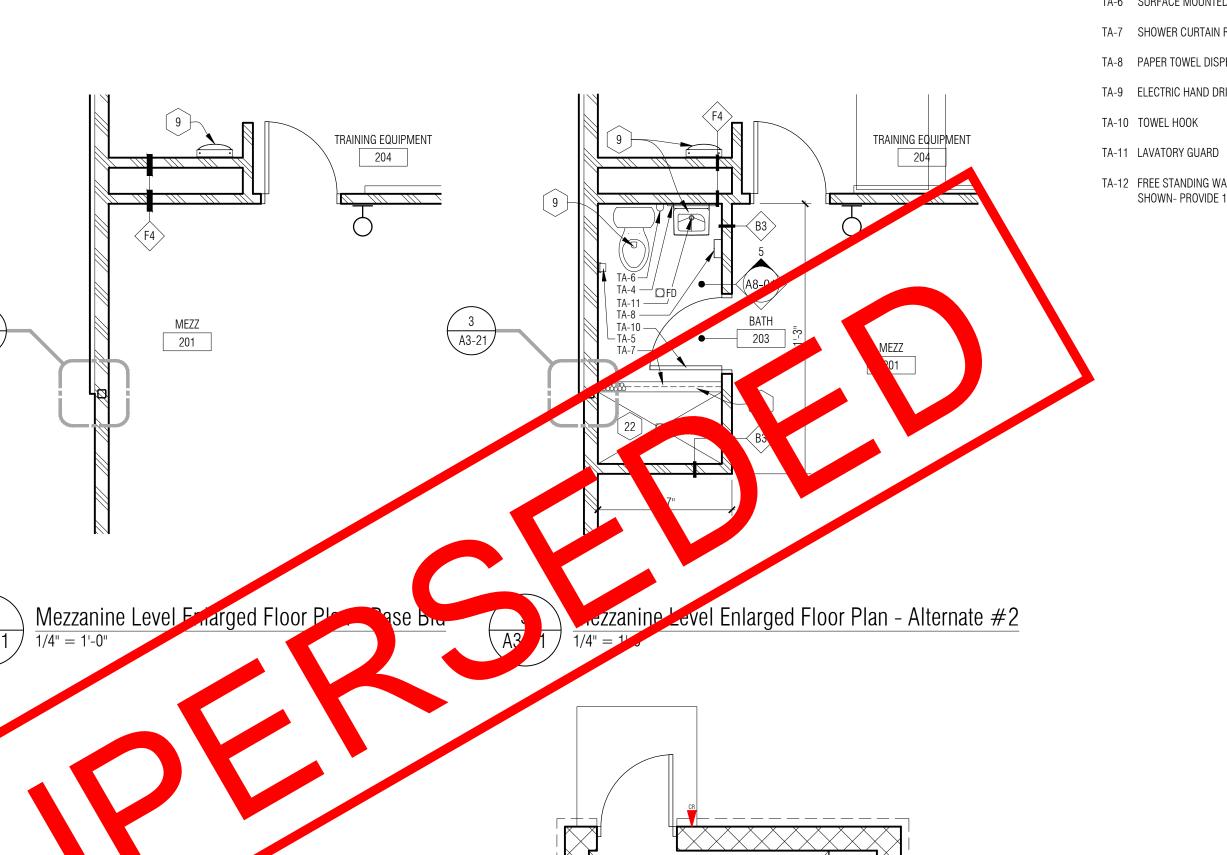
APPROVED BY

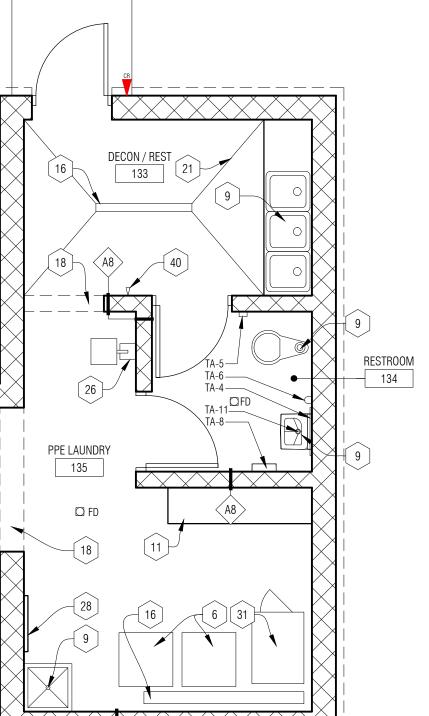
SHEET NAME

LL / AM

A3-10

FLOOR PLAN GENERAL NOTES:





Enlarged Plan - Decon Area

TA-11 LAVATORY GUARD A3-21 201 A3-21 Mezzanine Level Frarged Floor Pl Enlarged Plan - Bathroom 116 czzanine Level Enlarged Floor Plan - Alternate #2 A3-01 1/4" = 1'-0"A3-01 1/4" = 1'-0"133

GENERAL NOTES - TOILET ACCESSORIES

- A. REFER TO SPECIFICATION SECTION 102800 FOR DESCRIPTION OF TOILET ACCESSORIES.
- B. REFER TO MECHANICAL PLANS FOR ALL PLUMBING FIXTURES.
- C. CENTER FLOOR DRAIN IN ROOM UON. ENSURE 1/8" PER FOOT SLOPE TOWARD FLOOR DRAINS. (TYP.)
- D. PROVIDE WD BLOCKING SUPPORT AT ALL GRAB BAR LOCATIONS PER GRAB BAR MANUFACTURER'S RECOMMENDATION.

LEGEND - TOILET ACCESSORIES

- TA-1 42" GRAB BAR
- TA-2 36" GRAB BAR
- TA-3 18" GRAB BAR VERTICAL
- TA-4 WALL MOUNTED MIRROR
- TA-5 TOILET TISSUE DISPENSER
- TA-6 SURFACE MOUNTED SOAP DISPENSER
- TA-7 SHOWER CURTAIN ROD & HOOKS
- TA-8 PAPER TOWEL DISPENSER
- TA-9 ELECTRIC HAND DRIER
- TA-10 TOWEL HOOK
- TA-12 FREE STANDING WASTE RECEPTACLE (NOT SHOWN- PROVIDE 1 AT EACH RESTROOM)

FLOOR PLAN GENERAL NOTES:

- A. ALL DIMENSIONS ARE TO FINISH FACE OF WALL WALL THICKNESS IS SHOWN AS NOMINAL. SEE WALL TYPES FOR ACTUAL THICKNESS.
- B. COORDINATE SIZE AND LOCATION OF ALL DUCT, SHAFT AND LOUVER OPENINGS IN WALLS AND FLOORS WITH MECHANICAL AND ELECTRICAL. PROVIDE ALL REQUIRED LINTELS FOR OPENINGS.

PARTNERS

PARTNERS in Architecture, PLC

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in

Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or

protected under U.S. Copyright Law, all rights reserved.

in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

Celebr

65 MARKET STREET MOUNT CLEMENS, MI 48043

F 586.469.3607

© Copyright 2020

CONSULTANT

KEY PLAN

Highland Township

Highland Township

Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

Addendum #1

CCD #2

DRAWN BY

CHECKED BY

APPROVED BY

LL / AM

Construction Set

Bidding - Construction

04/20/20

05/04/20

06/16/20

Fire Department

PROJECT NAME

Statement of Intellectual Property

- C. DO NOT SCALE DRAWINGS. USE DIMENSIONS PROVIDED. IF A CONFLICT IS ENCOUNTERED OR A REQUIRED DIMENSION IS NOT PROVIDED, REQUEST A CLARIFICATION FROM THE ARCHITECT.
- D. AT ALL LOCATIONS WHERE GYPSUM BOARD WALL INTERSECTS PERPENDICULAR TO MASONRY BLOCK WALL CORNER, THE GYPSUM BOARD IS TO BE SET BACK 1" FORM BULLNOSE OF BLOCK.
- E. AT FLOOR DRAIN LOCATIONS, SLOPE SLAB (-1") TO DRAIN

FLOOR PLAN KEY NOTES:

- 1 SOLID SURFACE TRANSITION AT SHOWER REFER TO DETAIL T7 ON A0-14
- 2 THICKENED CONCRETE EQUIPMENT PAD, COORDINATE SIZE &
- LOCATOIN WITH MECH & ELEC EQUIPMENT 3 UNDER COUNTER DISHWASHER PROVIDED BY OWNER
- 4 DASHED LINE OF STONE SKIRTING AND SILL BELOW

6 Washer/Dryer Provided by Owner - Refer to Mech.

- 5 TV BY OWNER REFER TO ELEC
- 7 LINE OF FLOOR MATERIAL CHANGE NO TRANSITION STRIP
- BETWEEN MATERIALS REFER TO DETAIL T4 ON A0-14
- 8 HATCHED AREA OF MEZZANINE ABOVE

9 PLUMBING FIXTURE - REFER TO PLUMBING

- 0) WALL MOUNTED PPE STORAGE REFER TO SPECIFICATIONS
- REGENCY 18 GAUGE STAINLESS STEEL WORK TABLE ITEM NUMBER: 600T2460G WITH NO UNDERSHELF
- 12 MILLWORK/CASEWORK REFER TO INTERIOR ELEVATIONS
- 13 42" HIGH COUNTERTOP WITH BRACKETS
- 14 BASE BID: NO DECK ALTERNATE #3: PRESSURE TREATED WOOD FLOOR DECK ON WOOD FLOOR CONSTRUCTION - REFER TO WALL SECTIONS AND STRUCTURAL.
- 15 MEZZANINE GUARD RAIL TERMINATION, MOUNTING, AND STAIR GUARD / HAND RAIL MUST MAINTAIN LESS THAN 4" GAP AT STEEL VERTICAL POSTS
- 16 PRE-FABRICATED TRENCH DRAIN PROVIDE 2" CHASE WITH JOINT SEALANT AROUND PERIMETER - REFER TO STRUCTURAL AND PLUMBING.
- 17 STAND PIPE REFER TO PLUMBING
- 18 MASONRY OPENING REFER TO DIMENSION PLAN AND ELEVATIONS FOR OPENING SIZE
- 19 APPLIANCE PROVIDED & INSTALLED BY OWNER
- 6" Ø x 4'-0" HIGH CONCRETE FILLED GALVANIZED STEEL PIPE BOLLARD
- 21 SLOPED EPOXY FLOORING
- [22] PORCELAIN TILE SHOWER WITH SHOWER PAN FLASHING AND FLOOR DRAIN. COORDINATE DEPRESSION IN CONCRETE FLOOR SLAB AS REQUIRED FOR FLUSH FLOOR FINISH.
- 23 GROMMET IN COUNTERTOP
- 24 ALTERNATE: LINE OF DECK ABOVE
- 25 ADJUSTABLE SHELVING 26 EYE WASH STATION
- 27 LINE OF CLERESTORY ABOVE REFER TO DETAIL 3/A3-01
- 28 MOP RACK
- [29] ELECTRICAL WATER COOLER REFER TO MECH. & ELEC
- [30] COMPRESSORS TO BE RE LOCATED FROM STATION 1 REFER TO MECH. & ELEC - OWNER TO RELOCATE 31] EXTRACTOR PROVIDED BY OWNER - REFER TO MECH. & ELEC FOR
- [33] DELEGATED DESIGN STAIR SYSTEM WITH 5' CLEAR REMOVABLE RAILING AT LANDING
- 34 PPE CHARGING STATION REFER TO SECTION DETAIL 7/A6-11
- 35 TRANSITION RAMPED FLOOR 1/2" PER 1'-0" SLOPE
- 36 LINE OF ROOF EDGE BELOW
- 37 SIGNAGE BY OWNER, CENTER WITH DOOR BELOW
- TRANSITION FROM FULL BET DEPTH STONE TO A 2" VENEER AT EXTERIOR LINE OF BUILDING BELOW
- 39 LINE OF ENTRANCE SLAB REFER TO STRUCTURAL
- 40 WALL MOUNTED HOSE BIB REFER TO PLUMBING
- (41) Line of Overhead door in open position refer to door

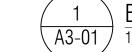


SHEET NO. A3-10

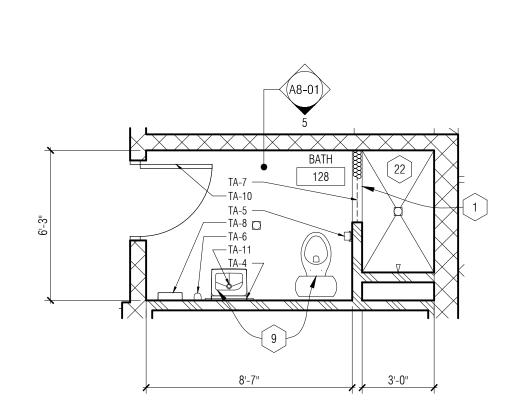
 $\frac{4}{A3-01}$ Enlarged Plan - Multi-Use



Enlarged Plan - Bathroom 124 & 128 1/4" = 1'-0"



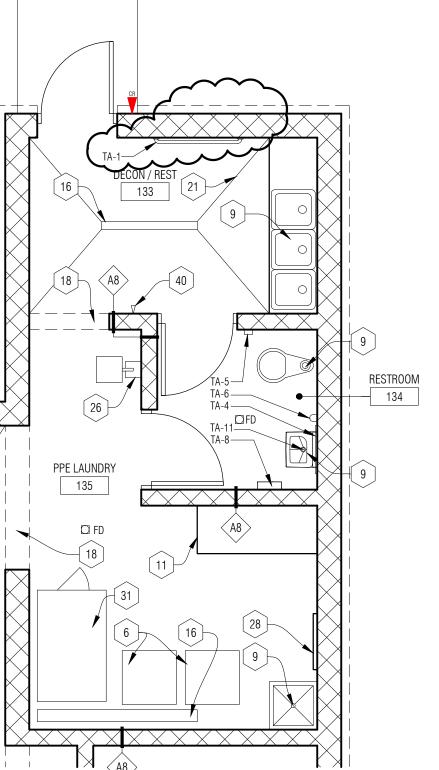
Enlarged Plan - Decon Area

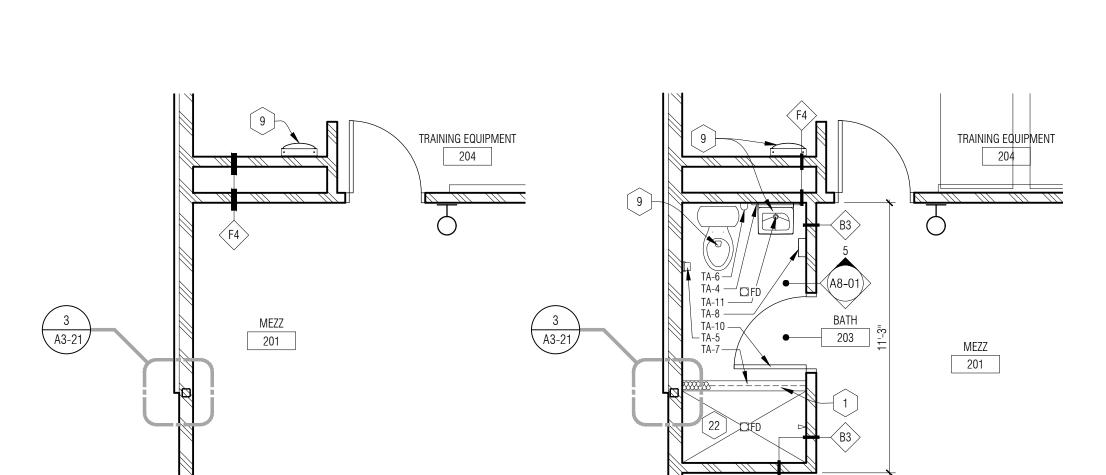


Enlarged Plan - Bathroom 116

A3-01 1/4" = 1'-0"

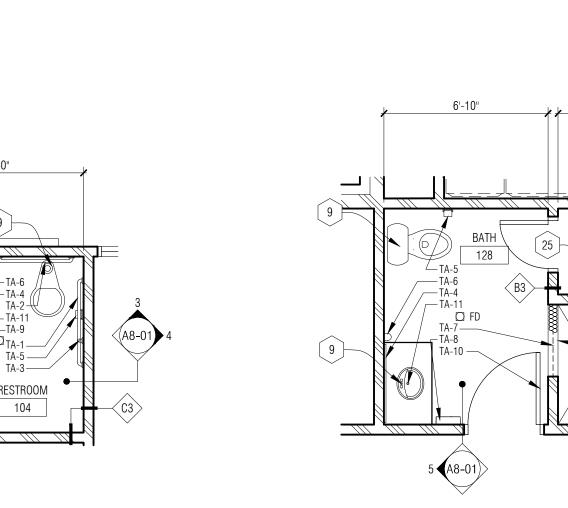






Mezzanine Level Enlarged Floor Plan - Base Bid $\overline{(A3-01)}$ $\overline{1/4" = 1'-0"}$











- A. REFER TO SPECIFICATION SECTION 102800 FOR DESCRIPTION OF TOILET ACCESSORIES.
- B. REFER TO MECHANICAL PLANS FOR ALL PLUMBING FIXTURES.
- C. CENTER FLOOR DRAIN IN ROOM UON. ENSURE 1/8" PER FOOT SLOPE TOWARD FLOOR DRAINS. (TYP.)
- D. PROVIDE WD BLOCKING SUPPORT AT ALL GRAB BAR LOCATIONS PER GRAB BAR MANUFACTURER'S RECOMMENDATION.

LEGEND - TOILET ACCESSORIES

- TA-1 42" GRAB BAR
- TA-2 36" GRAB BAR
- TA-3 18" GRAB BAR VERTICAL

TA-4 WALL MOUNTED MIRROR

- TA-5 TOILET TISSUE DISPENSER BY OWNER TA-6 SURFACE MOUNTED SOAP DISPENSER - BY OWNER _____ TA-7 SHOWER CURTAIN BOD & HOOKS
- TA-8 PAPER TOWEL DISPENSER BY OWNER TA-9 ELECTRIC HAND DRYER
- TA-10 TOWEL HOOK

TA-11 LAVATORY GUARD

TA-12 FREE STANDING WASTE RECEPTACLE (NOT SHOWN- PROVIDE 1 AT EACH RESTROOM)

- FLOOR PLAN GENERAL NOTES:
- A. ALL DIMENSIONS ARE TO FINISH FACE OF WALL WALL THICKNESS IS SHOWN AS NOMINAL. SEE WALL TYPES FOR ACTUAL THICKNESS.
- B. COORDINATE SIZE AND LOCATION OF ALL DUCT, SHAFT AND LOUVER OPENINGS IN WALLS AND FLOORS WITH MECHANICAL AND ELECTRICAL. PROVIDE ALL REQUIRED LINTELS FOR OPENINGS.

PARTNERS

PARTNERS in Architecture, PLC

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in

Architecture, PLC, 65 Market Street, Mount Clemens, MI,

protected under U.S. Copyright Law, all rights reserved.

48043 (P 586.469.3600). This set of drawings, in whole or

in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

Celebr

65 MARKET STREET

F 586.469.3607

© Copyright 2020

CONSULTANT

KEY PLAN

Highland Township

Highland Township

Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

Addendum #1 Construction Set

CCD #2

CCD #4

DRAWN BY

CHECKED BY

APPROVED BY

LL / AM

Bidding - Construction

04/20/20

05/04/20

06/16/20 09/01/20

Fire Department

PROJECT NAME

MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

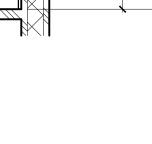
- . DO NOT SCALE DRAWINGS. USE DIMENSIONS PROVIDED. IF A CONFLICT IS ENCOUNTERED OR A REQUIRED DIMENSION IS NOT PROVIDED, REQUEST A CLARIFICATION FROM THE ARCHITECT.
- D. AT ALL LOCATIONS WHERE GYPSUM BOARD WALL INTERSECTS PERPENDICULAR TO MASONRY BLOCK WALL CORNER, THE GYPSUM BOARD IS TO BE SET BACK 1" FORM BULLNOSE OF BLOCK.
- E. AT FLOOR DRAIN LOCATIONS, SLOPE SLAB (-1") TO DRAIN

FLOOR PLAN KEY NOTES:

- 1 SOLID SURFACE TRANSITION AT SHOWER REFER TO DETAIL T7 ON A0-14
- 2 THICKENED CONCRETE EQUIPMENT PAD, COORDINATE SIZE &
- LOCATOIN WITH MECH & ELEC EQUIPMENT
- [3] UNDER COUNTER DISHWASHER PROVIDED BY OWNER 4 DASHED LINE OF STONE SKIRTING AND SILL BELOW
- 5 TV BY OWNER REFER TO ELEC
- 6 Washer/Dryer Provided by Owner Refer to Mech.
- 7 LINE OF FLOOR MATERIAL CHANGE NO TRANSITION STRIP BETWEEN MATERIALS - REFER TO DETAIL T4 ON A0-14
- 8 HATCHED AREA OF MEZZANINE ABOVE
- 9 PLUMBING FIXTURE REFER TO PLUMBING
- 10 WALL MOUNTED PPE STORAGE REFER TO SPECIFICATIONS
- [11] REGENCY 18 GAUGE STAINLESS STEEL WORK TABLE ITEM NUMBER: 600T2460G WITH NO UNDERSHELF
- 12 MILLWORK/CASEWORK REFER TO INTERIOR ELEVATIONS
- 13 42" HIGH COUNTERTOP WITH BRACKETS
- 14 BASE BID: NO DECK
- ALTERNATE #3: PRESSURE TREATED WOOD FLOOR DECK ON WOOD FLOOR CONSTRUCTION - REFER TO WALL SECTIONS AND
- 15 MEZZANINE GUARD RAIL TERMINATION, MOUNTING, AND STAIR GUARD / HAND RAIL MUST MAINTAIN LESS THAN 4" GAP AT STEEL VERTICAL POSTS
- 16 PRE-FABRICATED TRENCH DRAIN PROVIDE 2" CHASE WITH JOINT SEALANT AROUND PERIMETER - REFER TO STRUCTURAL AND PLUMBING.
- 17 STAND PIPE REFER TO PLUMBING
- 18 MASONRY OPENING REFER TO DIMENSION PLAN AND ELEVATIONS FOR OPENING SIZE
- 19 APPLIANCE PROVIDED & INSTALLED BY OWNER
- 6" Ø x 4'-0" HIGH CONCRETE FILLED GALVANIZED STEEL PIPE BOLLARD
- 21 SLOPED EPOXY FLOORING
- [22] PORCELAIN TILE SHOWER WITH SHOWER PAN FLASHING AND FLOOR DRAIN. COORDINATE DEPRESSION IN CONCRETE FLOOR SLAB AS REQUIRED FOR FLUSH FLOOR FINISH.
- 23 GROMMET IN COUNTERTOP
- 24 ALTERNATE: LINE OF DECK ABOVE
- 25 ADJUSTABLE SHELVING
- 26 EYE WASH STATION
- 27 LINE OF CLERESTORY ABOVE REFER TO DETAIL 3/A3-01
- 28 MOP RACK
- [29] ELECTRICAL WATER COOLER REFER TO MECH. & ELEC
- COMPRESSORS TO BE RE LOCATED FROM STATION 1 REFER TO MECH. & ELEC OWNER TO RELOCATE
- 31 EXTRACTOR PROVIDED BY OWNER REFER TO MECH. & ELEC FOR PROVIDED CONNECTIONS.
- 32 CLOSET WITH COAT RACK & SHELF
- [33] DELEGATED DESIGN STAIR SYSTEM WITH 5' CLEAR REMOVABLE RAILING AT LANDING
- 34 PPE CHARGING STATION REFER TO SECTION DETAIL 7/A6-11
- 35 TRANSITION RAMPED FLOOR 1/2" PER 1'-0" SLOPE
- 36 LINE OF ROOF EDGE BELOW
- 37 SIGNAGE BY OWNER, CENTER WITH DOOR BELOW
- TRANSITION FROM FULL BET DEPTH STONE TO A 2" VENEER AT EXTERIOR LINE OF BUILDING BELOW
- 39 LINE OF ENTRANCE SLAB REFER TO STRUCTURAL
- 40 WALL MOUNTED HOSE BIB REFER TO PLUMBING
- 41 LINE OF OVERHEAD DOOR IN OPEN POSITION REFER TO DOOR

SHEET NAME ENLARGED FLOOR PLANS

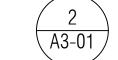
A3-10



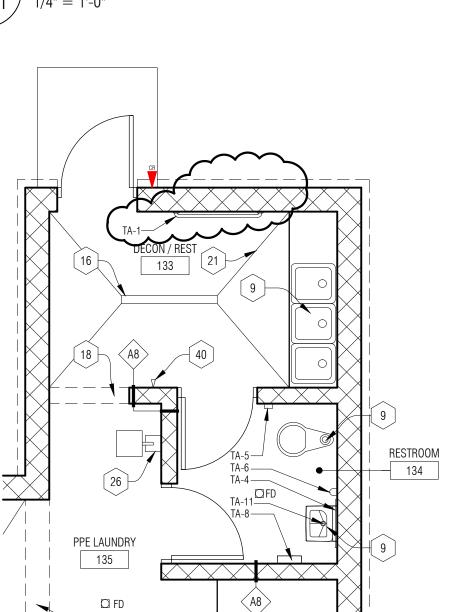
 $\frac{4}{A3-01}$ Enlarged Plan - Multi-Use



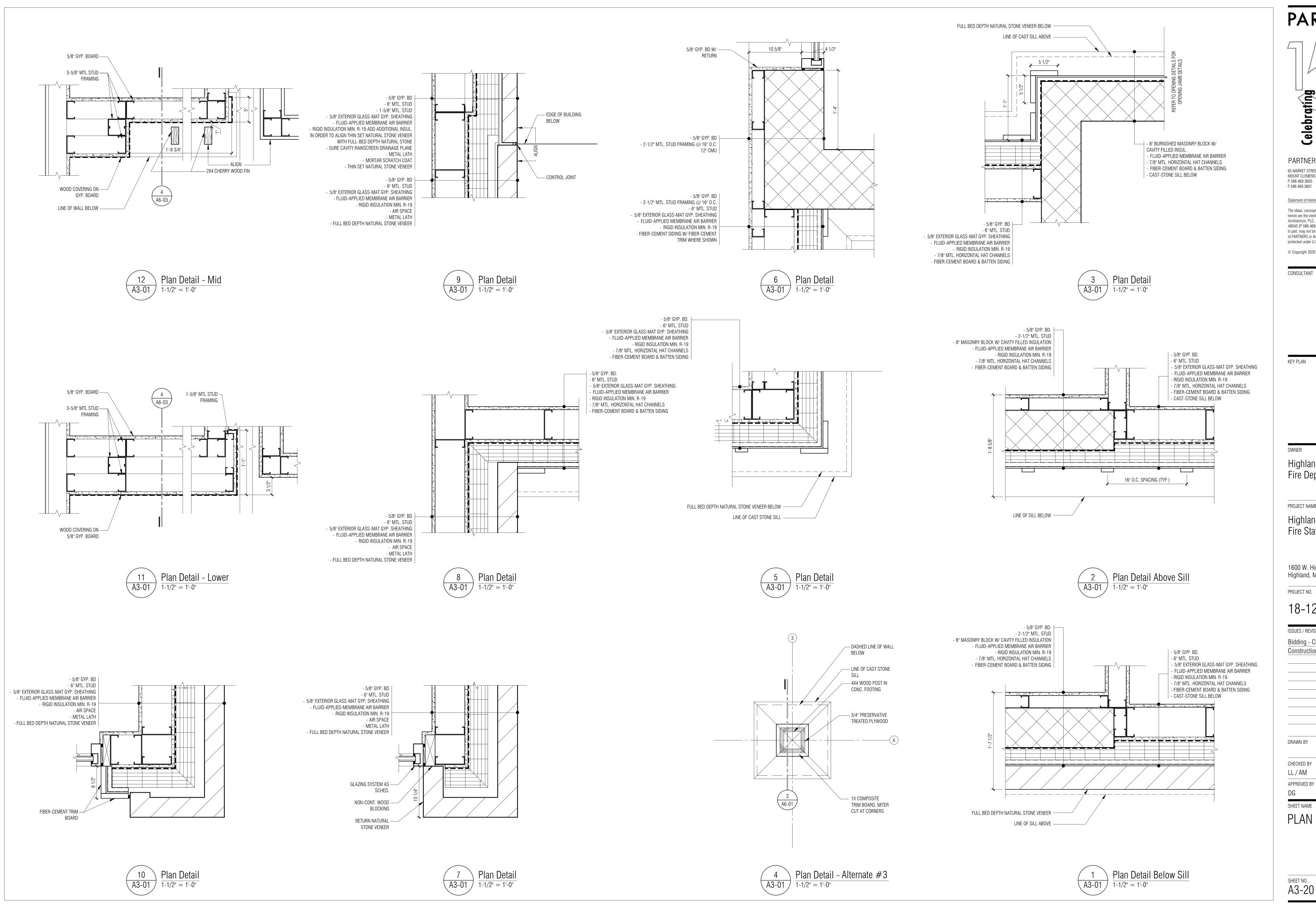
Enlarged Plan - Restroom 103 & 104







Mezzanine Level Enlarged Floor Plan - Alternate #2 A3-01 1/4" = 1'-0"





PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, Ml 48357

PROJECT NO.

18-122A

| 03/27/20 |
|----------|
| 05/04/20 |
| |
| |
| |
| |
| |
| |
| |
| |

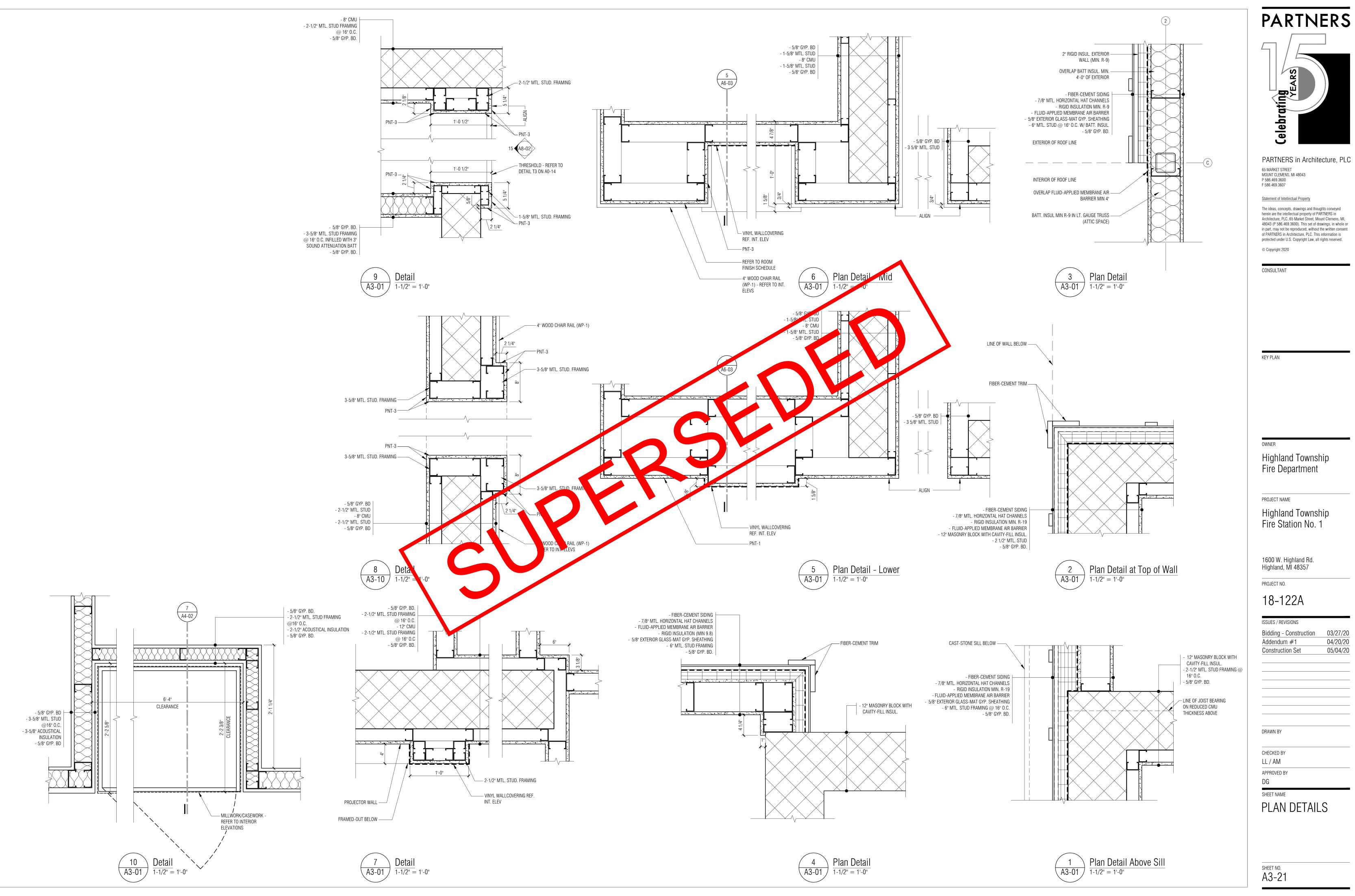
CHECKED BY LL / AM

APPROVED BY

SHEET NAME

PLAN DETAILS

SHEET NO. **A3-20**





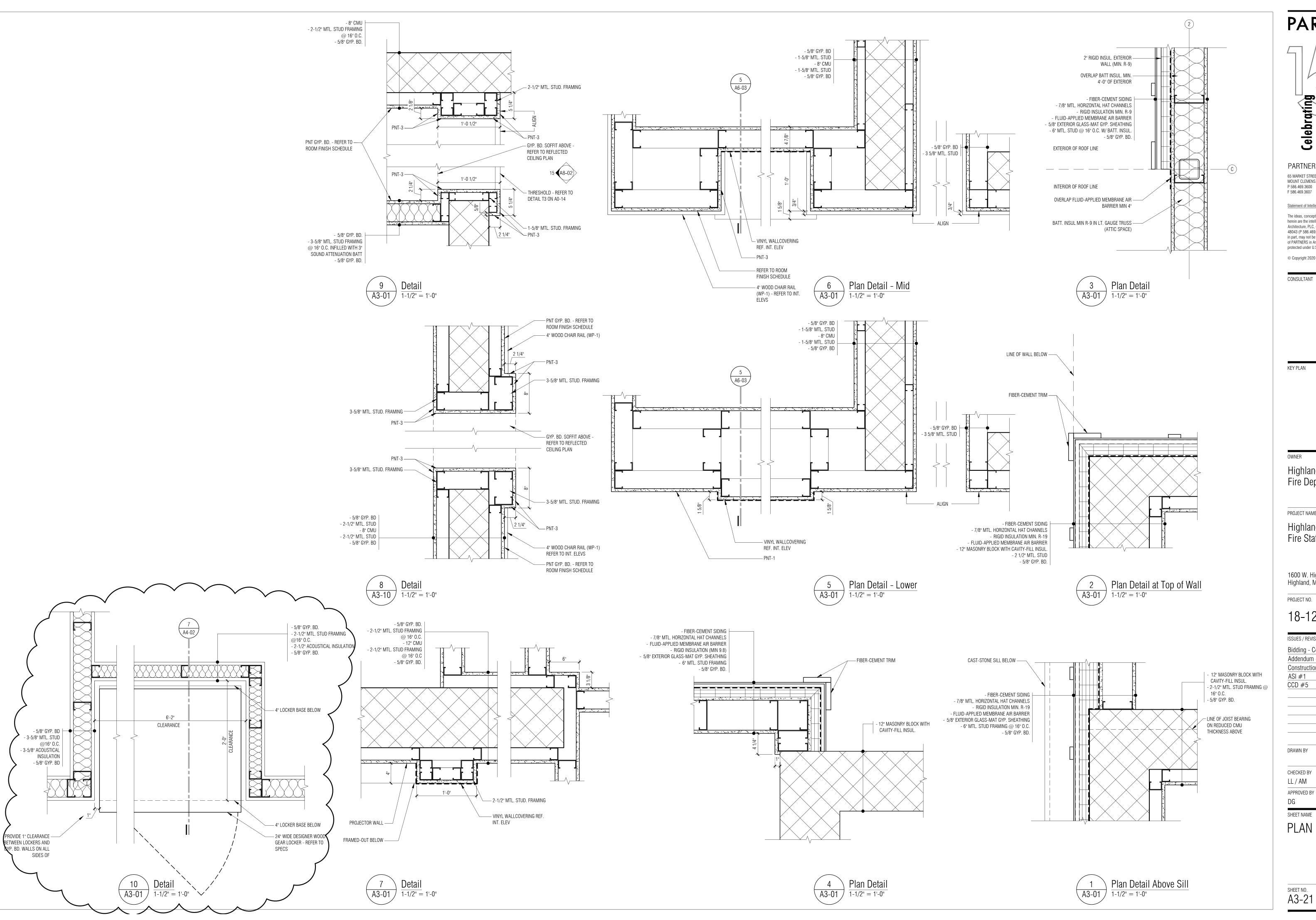
PARTNERS in Architecture, PLC

herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

Highland Township

Highland Township Fire Station No. 1

| ISSUES / REVISIONS | |
|------------------------|----------|
| Bidding - Construction | 03/27/20 |
| Addendum #1 | 04/20/20 |
| Construction Set | 05/04/20 |





PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| Bidding - Construction | 03/27/20 |
|------------------------|----------|
| Addendum #1 | 04/20/20 |
| Construction Set | 05/04/20 |
| ASI #1 | 06/22/20 |
| CCD #5 | 09/28/20 |

DRAWN BY

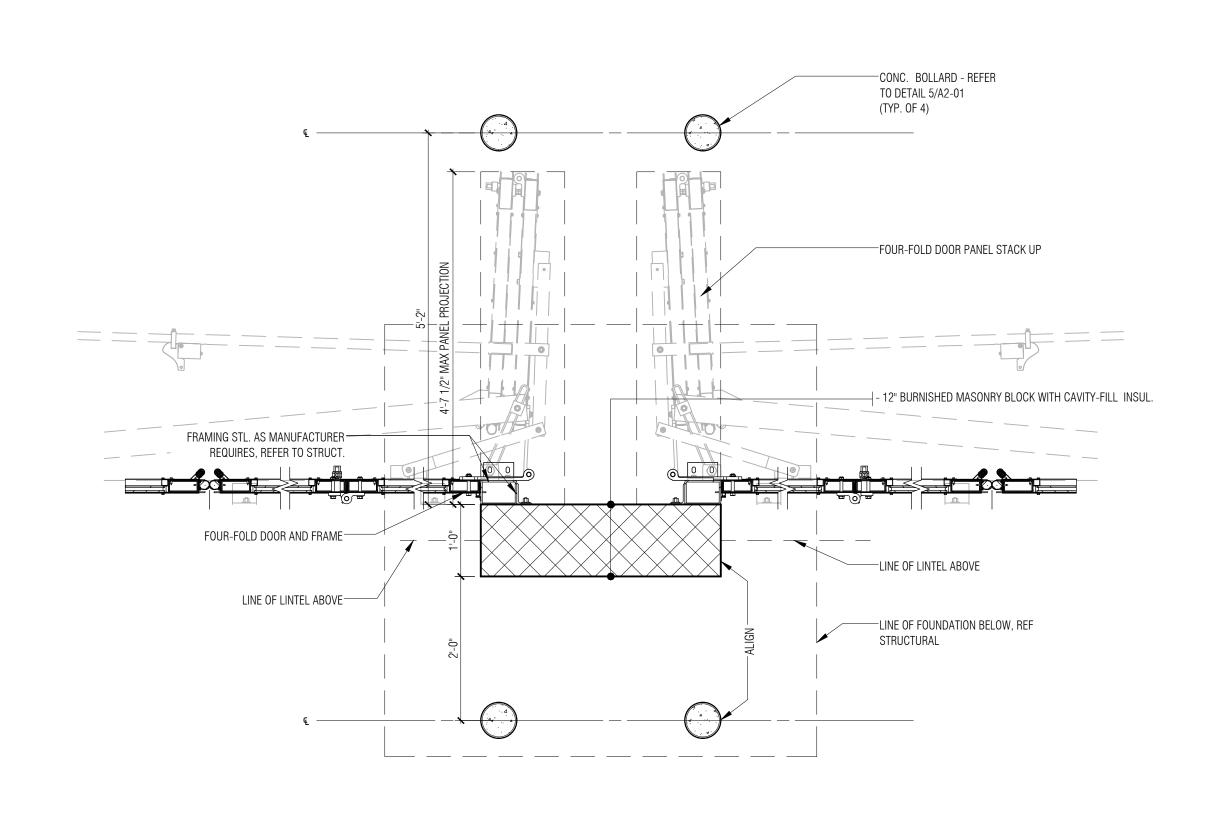
CHECKED BY

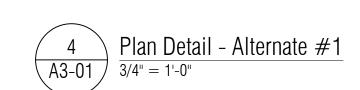
LL / AM APPROVED BY

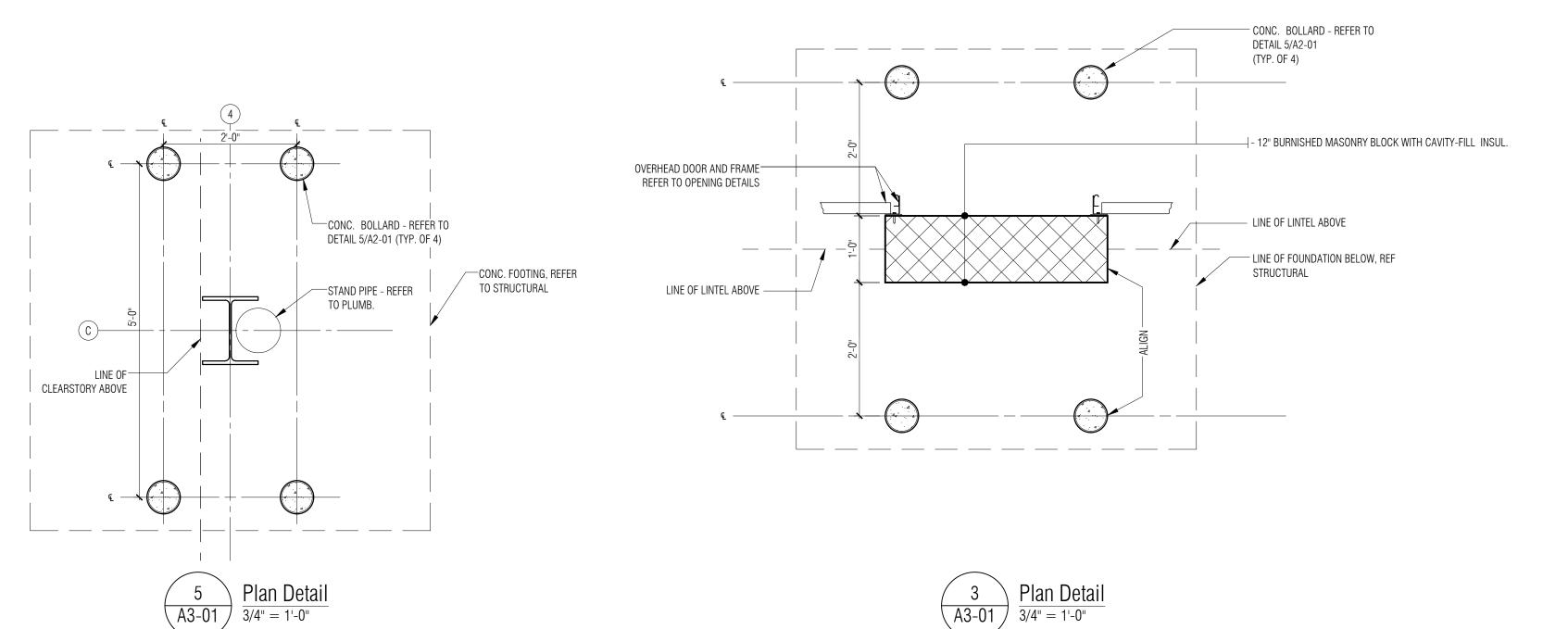
SHEET NAME

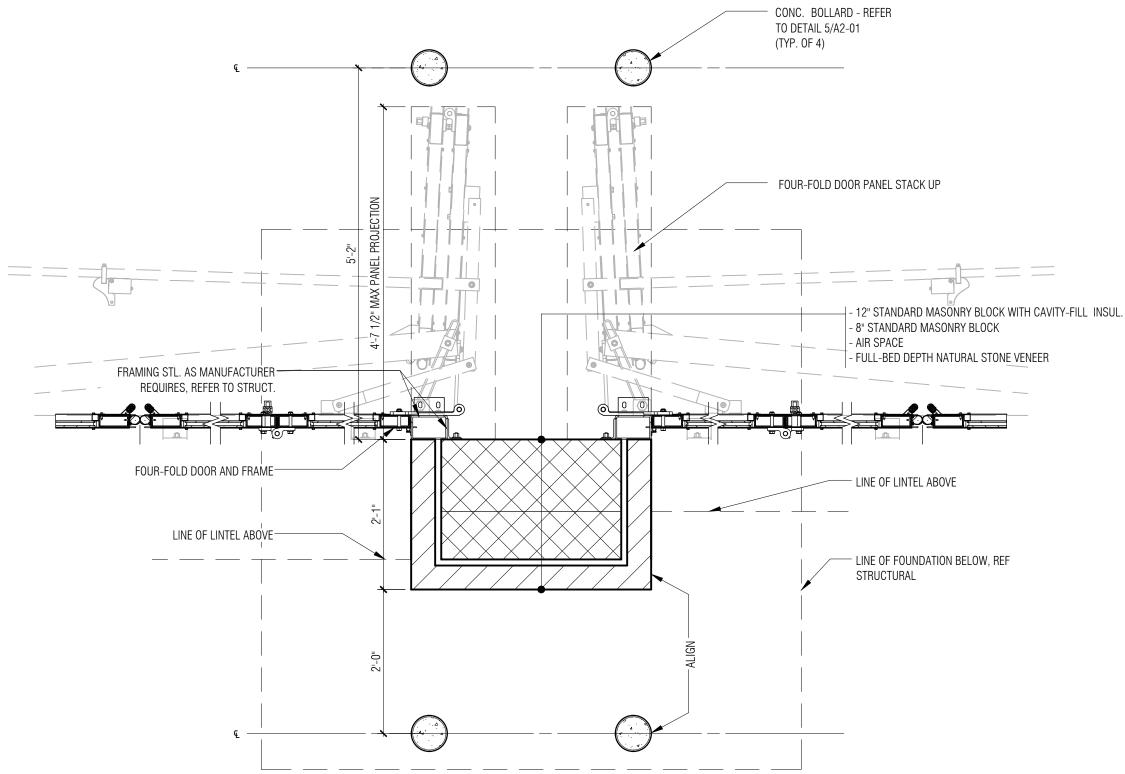
PLAN DETAILS

A3-21

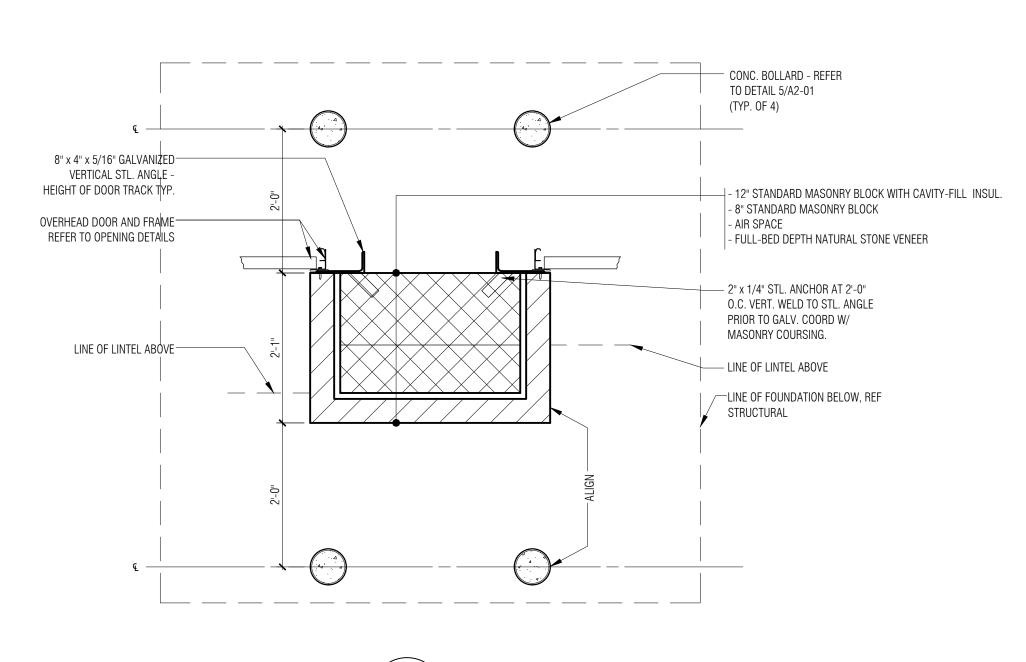


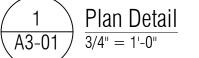














PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

KEY PLAN

OVAVALE

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| ISSUES / REVISIONS | |
|------------------------|----------|
| Bidding - Construction | 03/27/20 |
| Addendum #1 | 04/20/20 |
| Construction Set | 05/04/20 |
| | |
| | |
| | |
| | |

DRAWN BY

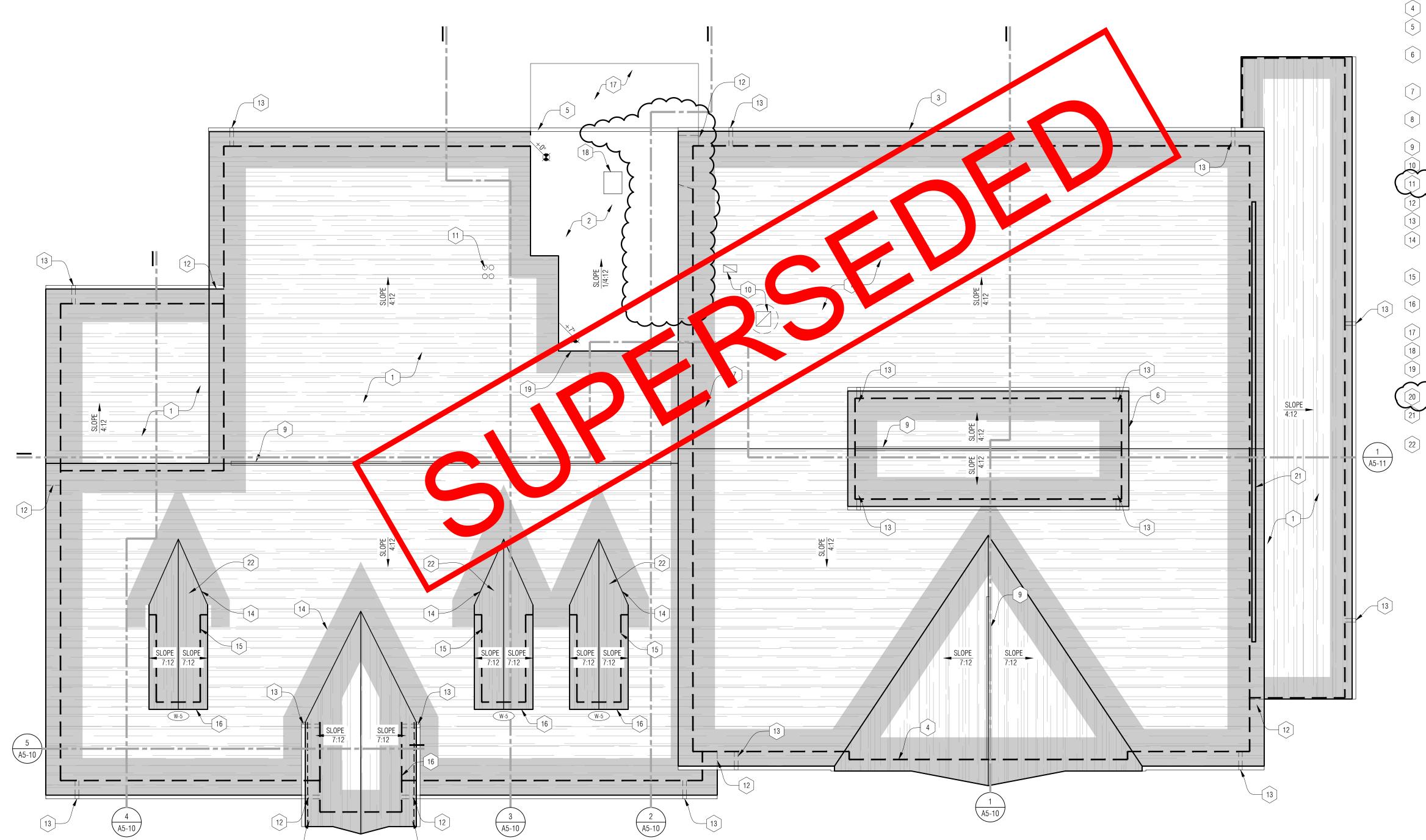
CHECKED BY

LL / AM
APPROVED BY

SHEET NAME

PLAN DETAILS

SHEET NO. A3-22

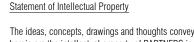


ROOF PLAN GENERAL NOTES:

- A. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION FOR ROOF RELATED ITEMS.
- B. TAPERED INSULATION SHALL SLOPE 1/4" PER 1'-0" TOWARDS ROOF SUMP UNLESS OTHERWISE NOTED. SLOPE VALUES ARE APPROXIMATE. IF SLOPE CANNOT BE ACHIEVED, CONTACT ARCHITECT BEFORE PROCEEDING FURTHER. ARROWS SHOWN REPRESENT DOWN SLOPE OF ROOF.
- C. REFER TO ROOF DETAILS FOR ALL PIPE PENETRATIONS COORDINATE LOCATIONS AND QUANTITIES W/ MECHANICAL.
- D. DO NOT PENETRATE SHINGLE ROOF REFER TO MECHANICAL AND ELECTRICAL FOR ALL THRU ROOF PENETRATIONS. FLASH AND SEAL ALL PENETRATIONS IN ACCORDANCE WITH THE ROOF MANUFACTURER'S SPECIFICATIONS AND DETAILS TO ENSURE WARRANTY & DETAILS.

ROOF PLAN KEY NOTES:

- ASPHALT SHINGLE ROOF. ALL VENTING AND EXHAUST TO BE IN ROOF WELL WALL / RIDGE OR SOFFIT. NO VENTING OR ANY M.E.P. PENETRATIONS THROUGH SHINGLE ROOF ON SOUTH SIDE
- 2 SINGLE-PLY MEMBRANE ROOFING ON R-15 MIN TAPERED INSULATION
- 3 6" K-STYLE METAL GUTTER (MRS-2)
- 4 LINE OF FACE OF WALL BELOW, TYPICAL (DASHED LINE)
- 5 WRAP ROOF MEMBRANE OVER SIDING. TWO-PIECE ALUMINUM GUTTER AND FASCIA SYSTEM APPLIED OVER MEMBRANE WRAP
- 6 PARAPET FLASHING MEMBRANE ON BOTH SIDES OF ROOF CUT-OUT. PROVIDE METAL FLASHING W/ DRIP EDGE AT SHINGLES SEE SIM. DETAIL 4/A3-31
- 7 SHADED AREA OF ICE AND WATER SHIELD SYSTEM EXTEND 3'-0" MIN. PAST WALL BELOW AND VALLEYS.
- 8 CONTINUOUS INTAKE VENT. INSTALL PER MANUFACTURERS INSTRUCTIONS
- 9 CONTINUOUS RIDGE VENT REFER TO DETAIL 2/A3-31
- 10 ROOF VENT REFER TO MECH. & DETAIL 1/A3-31 11 NOT USED
- [13] METAL DOWNSPOUT DRAIN (MRS-2)
- [14] PROVIDE ICE AND WATER SHIELD AT ALL VALLEYS AND RIDGES (DETAIL 5/A3-21) AND EXTEND 3'-0" BEYOND INTERIOR FACE OF EXTERIOR WALLS (DETAIL 6/A3-21)
- PROVIDE FLASHING AT SIDEWALL TO ROOF TRANSITION SEE DETAIL (4/A3-21)
- [16] WINDOW BELOW ROOF DORMER, REF A0-04: WINDOW SCHEDULE AND WINDOW TYPES
- 17 LINE OF TRAINING DECK BELOW ALTERNATE #3
- 18 ROOF ACCESS HATCH
- 19 PROVIDE FLASHING AT ASPHALT SHINGLE ROOF TO SINGLY-PLY
- CONTINUOUS RIDGE VENT SLOPE TO HIGH WALL REFER TO SPECIFICATIONS NO SHEATHING BELOW DORMER FOR CONTINUOUS ATTIC ATMOSPHERE



protected under U.S. Copyright Law, all rights reserved.

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

PARTNERS in Architecture, PLC

PARTNERS

© Copyright 2020

Celebr

65 MARKET STREET MOUNT CLEMENS, MI 48043

P 586.469.3600 F 586.469.3607

CONSULTANT

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| ISSUES / REVISIONS | _ |
|------------------------|----------|
| Bidding - Construction | 03/27/20 |
| Addendum #1 | 04/20/20 |
| Construction Set | 05/04/20 |
| CCD #1 | 06/04/20 |

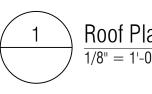
DRAWN BY

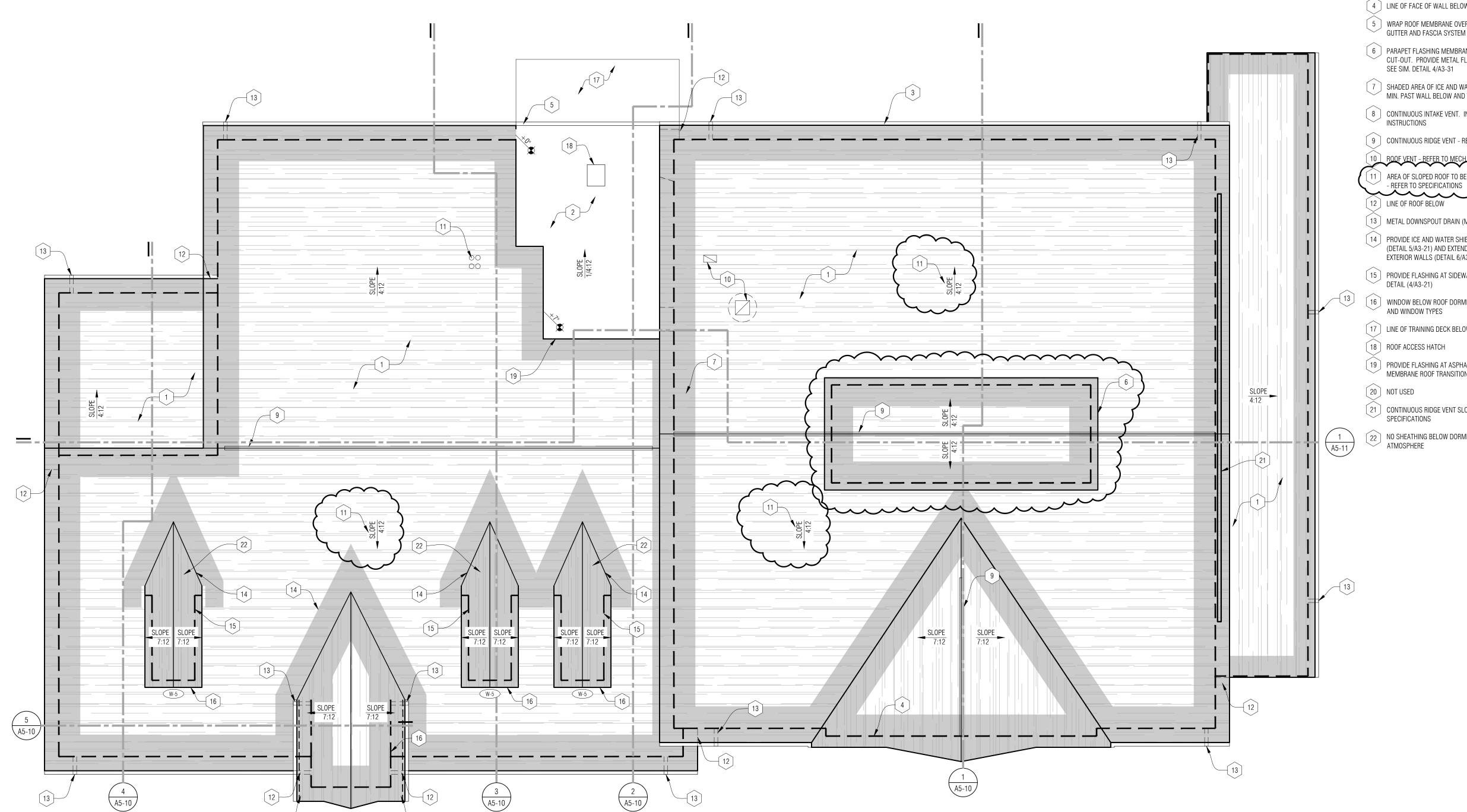
CHECKED BY LL / AM

APPROVED BY

SHEET NAME **ROOF PLAN**

SHEET NO. A3-30





ROOF PLAN GENERAL NOTES:

- A. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION FOR ROOF RELATED ITEMS.
- B. TAPERED INSULATION SHALL SLOPE 1/4" PER 1'-0" TOWARDS ROOF SUMP UNLESS OTHERWISE NOTED. SLOPE VALUES ARE APPROXIMATE. IF SLOPE CANNOT BE ACHIEVED, CONTACT ARCHITECT BEFORE PROCEEDING FURTHER. ARROWS SHOWN REPRESENT DOWN SLOPE OF ROOF.
- C. REFER TO ROOF DETAILS FOR ALL PIPE PENETRATIONS COORDINATE LOCATIONS AND QUANTITIES W/ MECHANICAL.
- D. DO NOT PENETRATE SHINGLE ROOF REFER TO MECHANICAL AND ELECTRICAL FOR ALL THRU ROOF PENETRATIONS. FLASH AND SEAL ALL PENETRATIONS IN ACCORDANCE WITH THE ROOF MANUFACTURER'S SPECIFICATIONS AND DETAILS TO ENSURE WARRANTY & DETAILS.

ROOF PLAN KEY NOTES:

- ASPHALT SHINGLE ROOF. ALL VENTING AND EXHAUST TO BE IN ROOF WELL WALL / RIDGE OR SOFFIT. NO VENTING OR ANY M.E.P. PENETRATIONS THROUGH SHINGLE ROOF ON SOUTH SIDE
- 2 SINGLE-PLY MEMBRANE ROOFING ON R-15 MIN TAPERED INSULATION
- 3 6" K-STYLE METAL GUTTER (MRS-2)
- 4 LINE OF FACE OF WALL BELOW, TYPICAL (DASHED LINE)
- 5 WRAP ROOF MEMBRANE OVER SIDING. TWO-PIECE ALUMINUM GUTTER AND FASCIA SYSTEM APPLIED OVER MEMBRANE WRAP
- 6 PARAPET FLASHING MEMBRANE ON BOTH SIDES OF ROOF CUT-OUT. PROVIDE METAL FLASHING W/ DRIP EDGE AT SHINGLES SEE SIM. DETAIL 4/A3-31
- 7 SHADED AREA OF ICE AND WATER SHIELD SYSTEM EXTEND 3'-0" MIN. PAST WALL BELOW AND VALLEYS.
- 8 CONTINUOUS INTAKE VENT. INSTALL PER MANUFACTURERS INSTRUCTIONS
- 9 CONTINUOUS RIDGE VENT REFER TO DETAIL 2/A3-31
- [10] ROOF VENT REFER TO MECH. & DETAIL 1/A3-31 1 AREA OF SLOPED ROOF TO BE VENTED NAILABLE RIGID INSULATION
- [12] LINE OF ROOF BELOW
- [13] METAL DOWNSPOUT DRAIN (MRS-2)
- [14] PROVIDE ICE AND WATER SHIELD AT ALL VALLEYS AND RIDGES (DETAIL 5/A3-21) AND EXTEND 3'-0" BEYOND INTERIOR FACE OF EXTERIOR WALLS (DETAIL 6/A3-21)
- 15 PROVIDE FLASHING AT SIDEWALL TO ROOF TRANSITION SEE DETAIL (4/A3-21)
- 16 WINDOW BELOW ROOF DORMER, REF A0-04: WINDOW SCHEDULE AND WINDOW TYPES
- 17 LINE OF TRAINING DECK BELOW ALTERNATE #3

- PROVIDE FLASHING AT ASPHALT SHINGLE ROOF TO SINGLY-PLY MEMBRANE ROOF TRANSITION
- [21] CONTINUOUS RIDGE VENT SLOPE TO HIGH WALL REFER TO
- 22 NO SHEATHING BELOW DORMER FOR CONTINUOUS ATTIC ATMOSPHERE

PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET

P 586.469.3600 F 586.469.3607

MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

KEY PLAN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| ISSUES / REVISIONS | |
|------------------------|----------|
| Bidding - Construction | 03/27/20 |
| Addendum #1 | 04/20/20 |
| Construction Set | 05/04/20 |
| CCD #1 | 06/04/20 |
| CCD #5 | 09/28/20 |

DRAWN BY

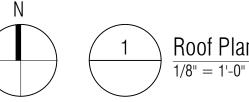
CHECKED BY LL / AM

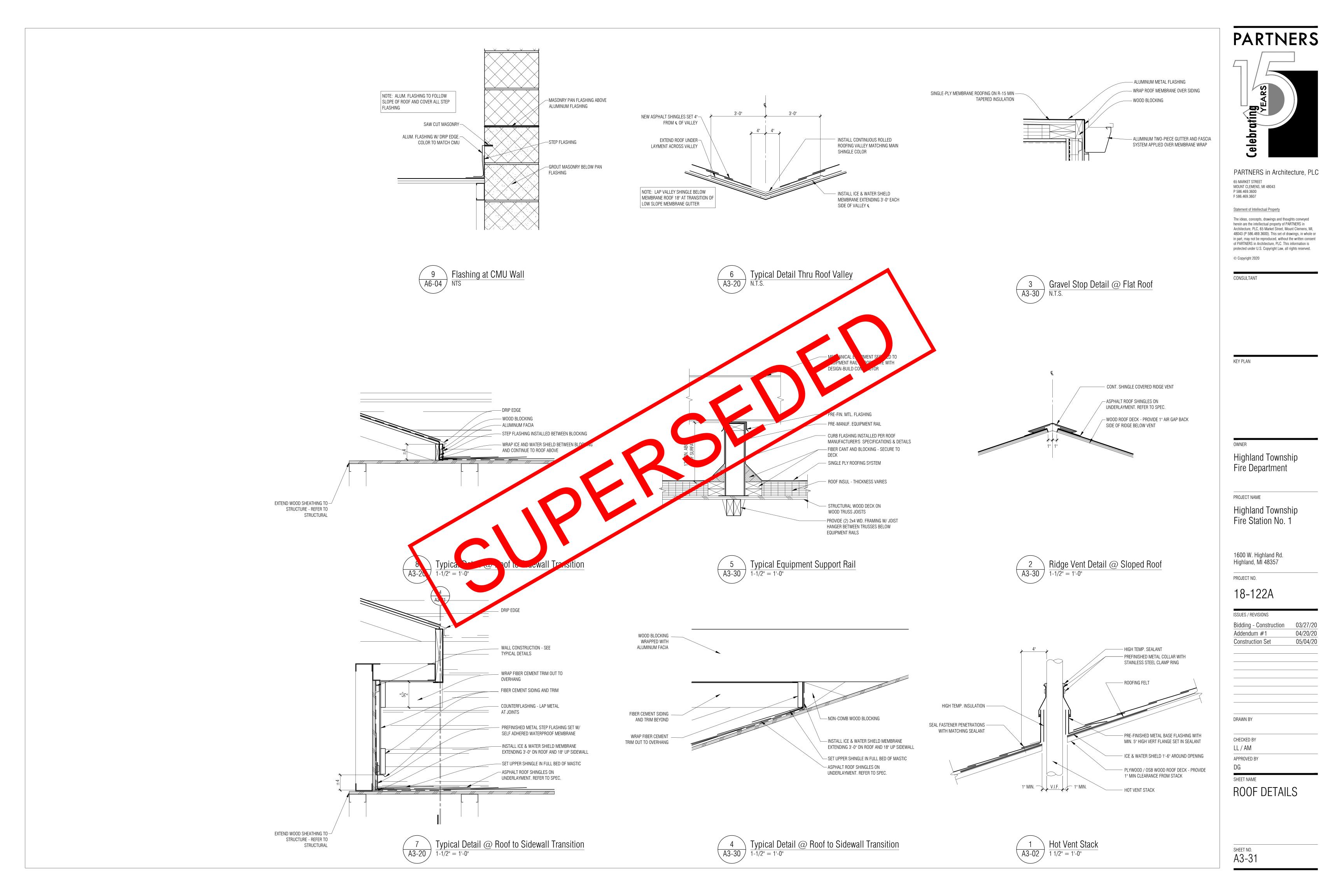
APPROVED BY

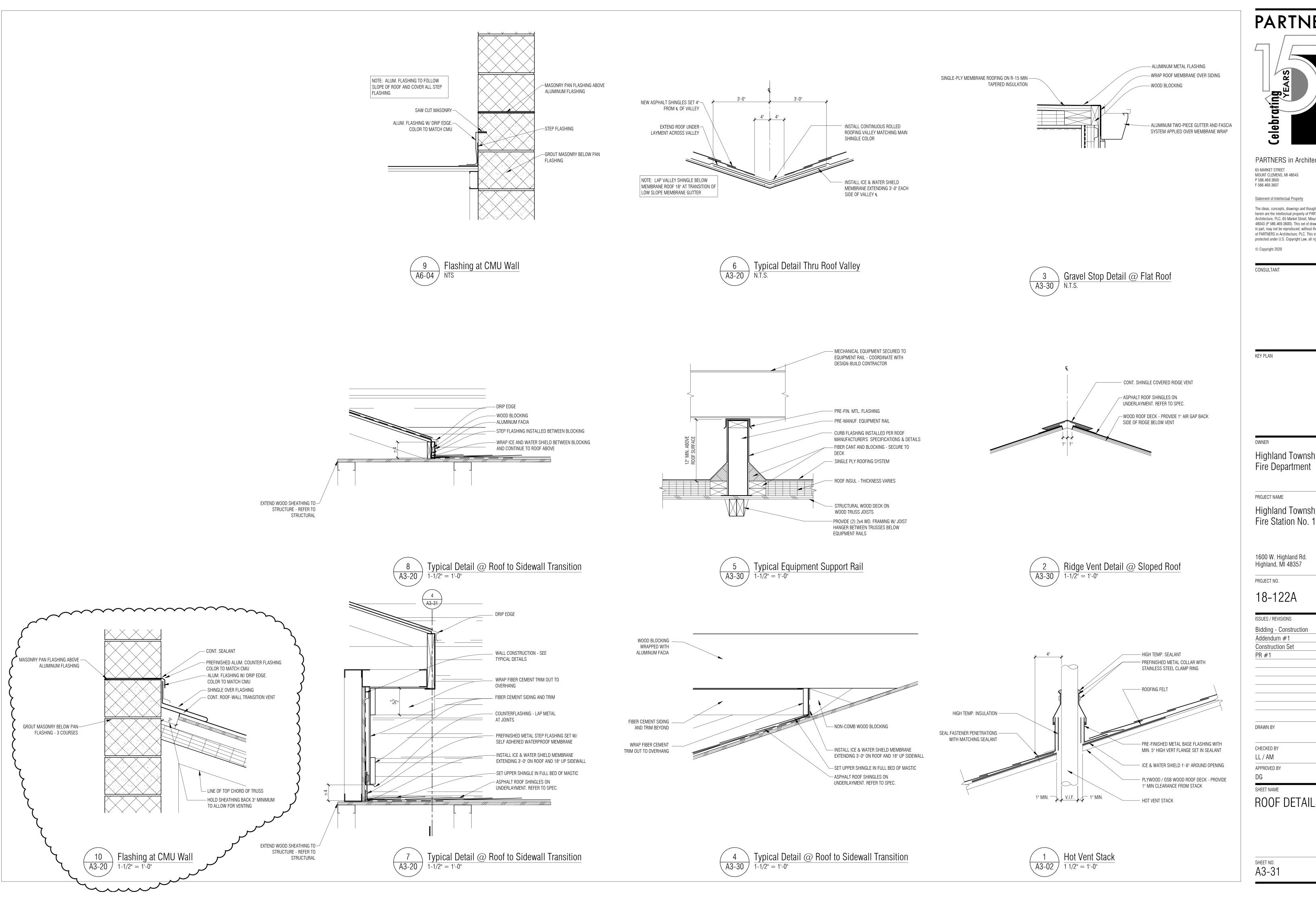
SHEET NAME

ROOF PLAN

SHEET NO. A3-30









PARTNERS in Architecture, PLC

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

Highland Township

Highland Township Fire Station No. 1

| Bidding - Construction Addendum #1 | 04/20/20 |
|---------------------------------------|----------|
| Construction Set | 05/04/20 |
| PR #1 | 09/21/20 |
| | |

ROOF DETAILS



REFLECTED CEILING PLAN - GENERAL NOTES:

- A. REFER TO FLOOR PLANS FOR ROOM NAMES, NUMBERS AND ROOM
- B. REFER TO ELECTRICAL FOR LIGHT FIXTURE TYPES AND
- C. REFER TO MECHANICAL FOR DIFFUSERS, REGISTERS, AND RETURNS.
- D. ALL LIGHT FIXTURES ARE TO BE CENTERED WITHIN CEILING U.O.N.
- E. CEILING HEIGHT MEASURED FROM 100'-0" FINISH FLOOR.

REFLECTED CEILING PLAN - KEY NOTES:

- [1] EXPOSED CEILING TO UNDERSIDE OF ROOF DECK REFER TO ROOM FINISH SCHEDULE
- 2 GYPSUM BOARD CEILING
- [3] LINE OF OVERHEAD DOOR REFER TO DOOR SCHEDULE
- 4 GYPSUM BOARD CEILING / SOFFIT REFER TO DETAIL 1/A4-02
- 5 RECESSED CAN LIGHT FIXTURES REFER TO ELECTRICAL
- 6 WALL MOUNTED SIGN REFER TO ELECTRICAL
- 7 HOOD REFER TO SPECIFICATIONS
- 8 WALL COVERING SOFFIT ACCENT BAND REFER TO DETAIL 6/A4-02
- 9 SUPPLY AIR DIFFUSER REFER TO MECH
- 10 IN GROUND LIGHT FIXTURE REFER TO ELEC
- EXPOSED CONCRETE PLANK ABOVE REFER TO ROOM FINISH SCHEDULE
- [12] EXPOSED MECHANICAL DUCTWORK PAINT TO MATCH CEILING, REFER TO MECH. AND ROOM FINISH SCHEDULE
- 13 SUSPENDED MECH UNIT REFER TO MECH
- [14] GOOSENECK FIXTURE REFER TO ELECTRICAL AND
- 15 GYP. BOARD CEILING ON 1-1/2" HAT CHANNELS 16" O.C. MOUNTED TO UNDERSIDE OF STRUCTURE - REFER TO DETAIL 3/A4-02
- 16 EXPOSED STRUCTURE PAINT TO MATCH CEILING, REFER TO MECH.
- [17] LINE OF CUPOLA ABOVE REFER TO PLAN (3/A4-01)
- [18] CMU OPENING REFER TO INTERIOR ELEVATIONS
- 19 GYP. BOARD WALL BANDING W/ COVE LIGHTING REFER TO DETAIL
- 20 GYP. BOARD FRAMING AROUND STRUCTURE REFER TO BUILDING SECTIONS (A5-10)
- EXTERIOR WALL MOUNTED LIGHTING ABOVE DECK REFER TO ALTERNATE #3
- 22 EXTERIOR FIBER CEMENT SOFFIT (SD-4)
- (23) UNDER CABINET LIGHT FIXTURE REFER TO INTERIOR ELEVATIONS
- 24 CEILING SUSPENDED TRACK LIGHTING REFER TO ELEC
- [25] MECH UNIT REFER TO MECH.
- [26] EXTERIOR METAL SOFFIT (MS-1)
- 27 ROOF ACCESS HATCH

Ceiling Symbols Legend

| | 5/8" GYP BD ON 3 5/8" MTL. STUD AT 16" O.C. SECURE TO STRUCTURE ABOVE AT 48" O.C. MAX EACH WAY |
|------------|---|
| | LINEAR PENDANT FIXTURE |
| | 2' X 4' LAY-IN LIGHT FIXTURE IN GRID |
| | SUPPLY AIR DIFFUSER (MECHANICAL) |
| | RETURN AIR GRILLE (MECHANICAL) |
| | HIGH BAY LIGHT FIXTURE |
| 0 | 6" RECESSED ROUND LIGHT FIXTURE |
| • | 6" RECESSED ROUND LIGHT WET FIXTURE |
| + | PENDANT LIGHT FIXTURE |
| ⊢ ⊕ | EXTERIOR GARAGE LIGHT FIXTURE - WALL MOUNTED |
| | EXTERIOR LIGHT FIXTURE |
| ⊗ | EXIT LIGHT - CEILING MOUNTED |
| H⊗ | EXIT LIGHT - WALL MOUNTED |
| 0 | VIDEO SURVEILLANCE CAMERA - COORD WITH TECH AND ELEC |
| | WIRELESS ACCESS POINT - COORD WITH TECH AND ELEC |





PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent

of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS Bidding - Construction 03/27/20 04/20/20 Addendum #1 05/04/20 Construction Set

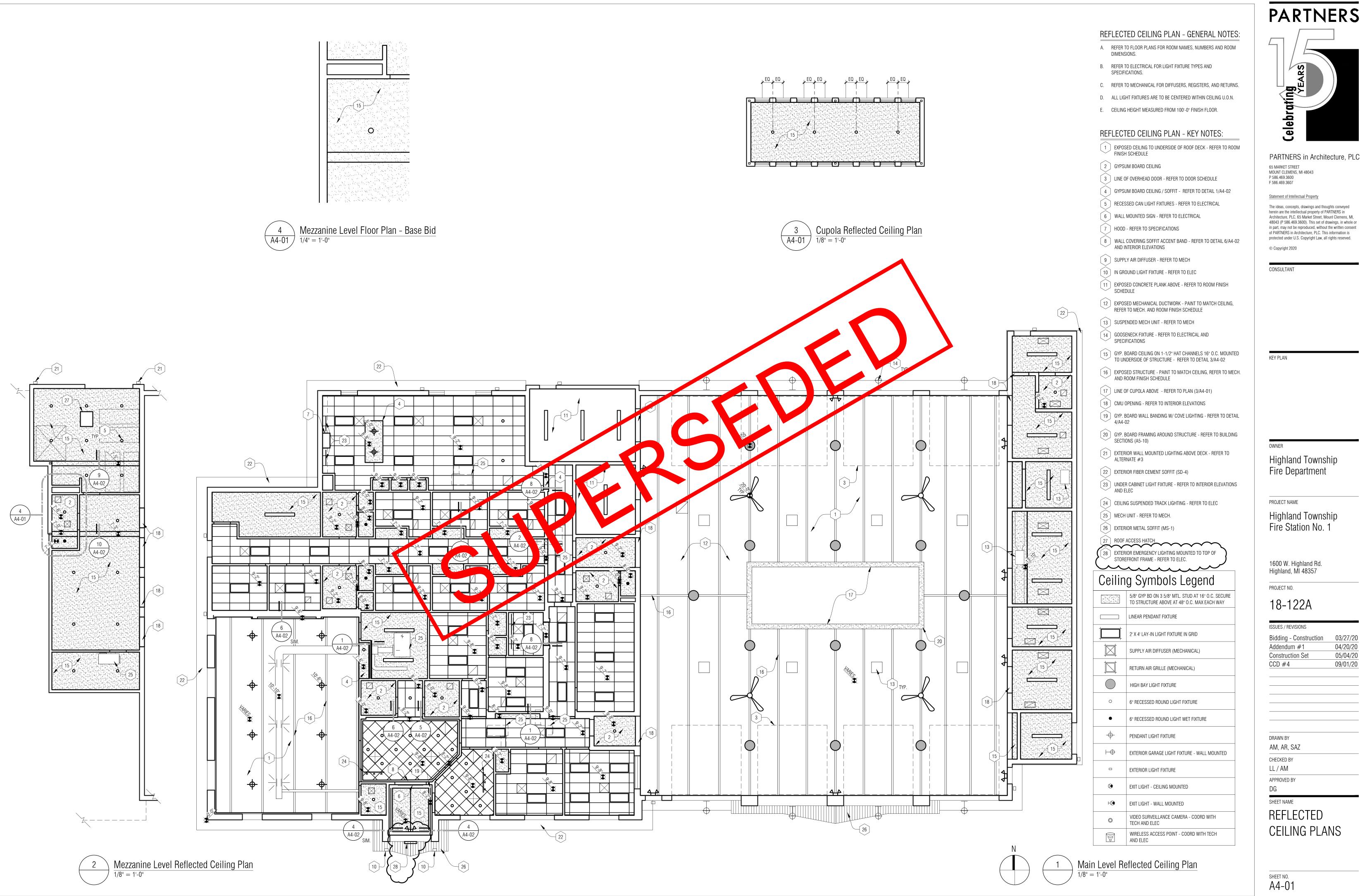
DRAWN BY AM, AR, SAZ

LL / AM APPROVED BY

CHECKED BY

SHEET NAME REFLECTED CEILING PLANS

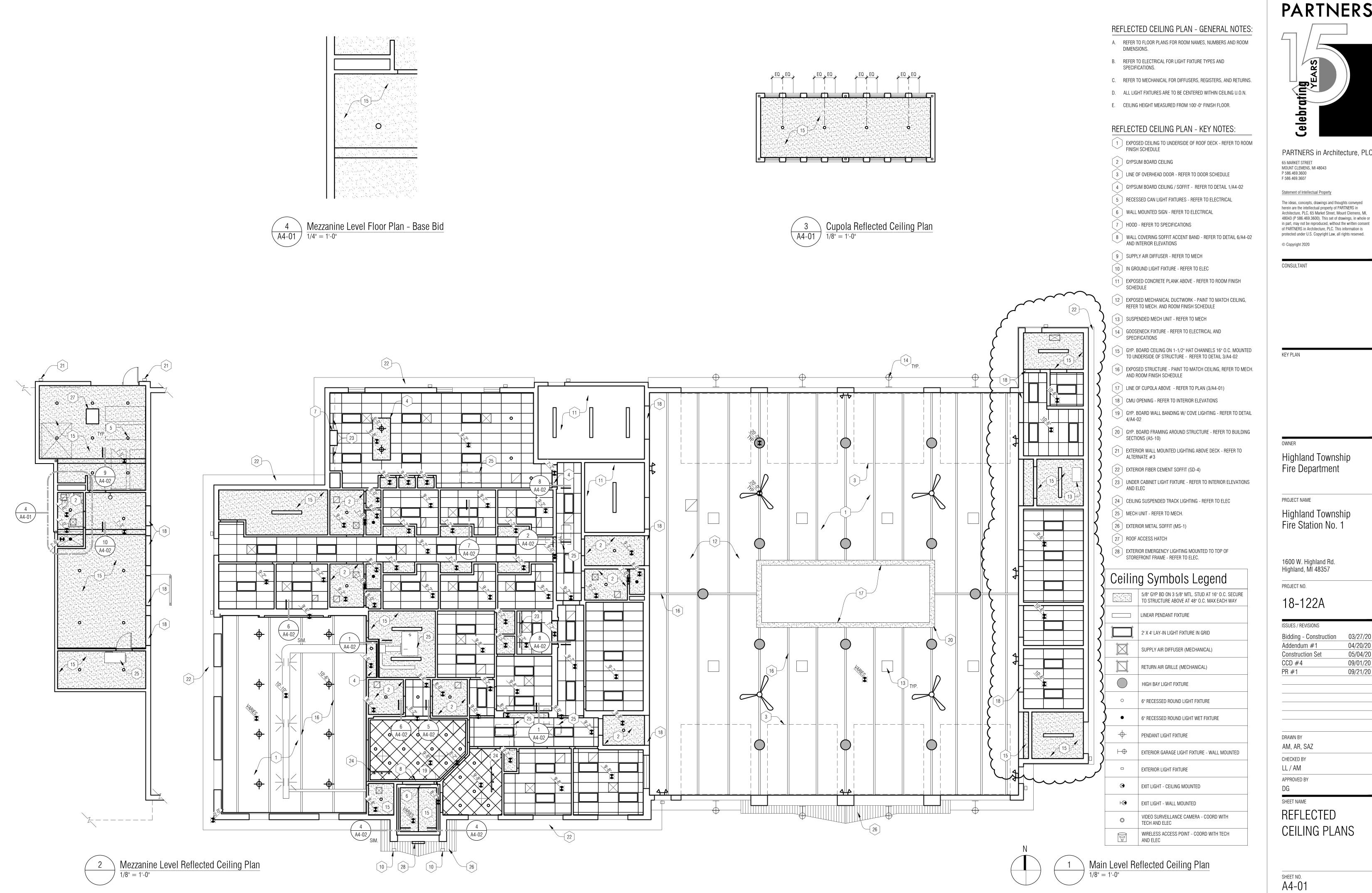
SHEET NO. A4-01





PARTNERS in Architecture, PLC

CEILING PLANS





PARTNERS in Architecture, PLC

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or

| ISSUES / REVISIONS | |
|------------------------|----------|
| Bidding - Construction | 03/27/20 |
| Addendum #1 | 04/20/20 |
| Construction Set | 05/04/20 |
| CCD #4 | 09/01/20 |
| PR #1 | 09/21/20 |
| | |

Project Name:

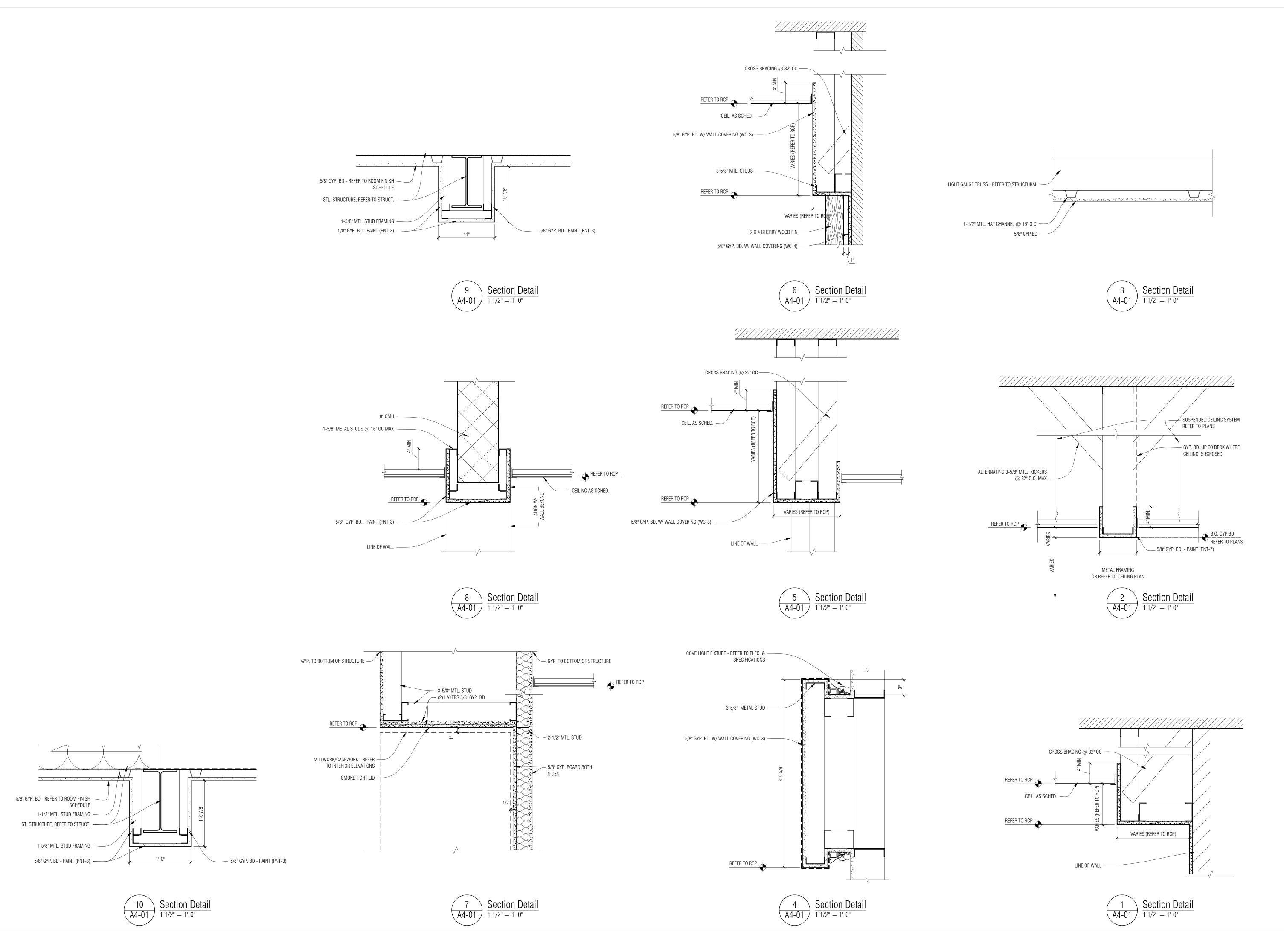
Highland Township – Highland Township Fire Station No. 1 CCD No: Five (5)

Project Number: Project Location:

Issue Date: Sept. 30, 2020 18-122A 1600 W. Highland Rd. Highland, MI 48357

A4-01 REFLECTED CEILING PLANS (NOT ISSUED)

A. Change soffit height at dorm room lockers from 7'-0" to 6'-5" – detail 7/A4-02.





PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

KEΛ Ы ΨИ

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| ISSUES / REVISIONS | |
|------------------------|----------|
| Bidding - Construction | 03/27/20 |
| Addendum #1 | 04/20/20 |
| Construction Set | 05/04/20 |

DRAWN BY

AM

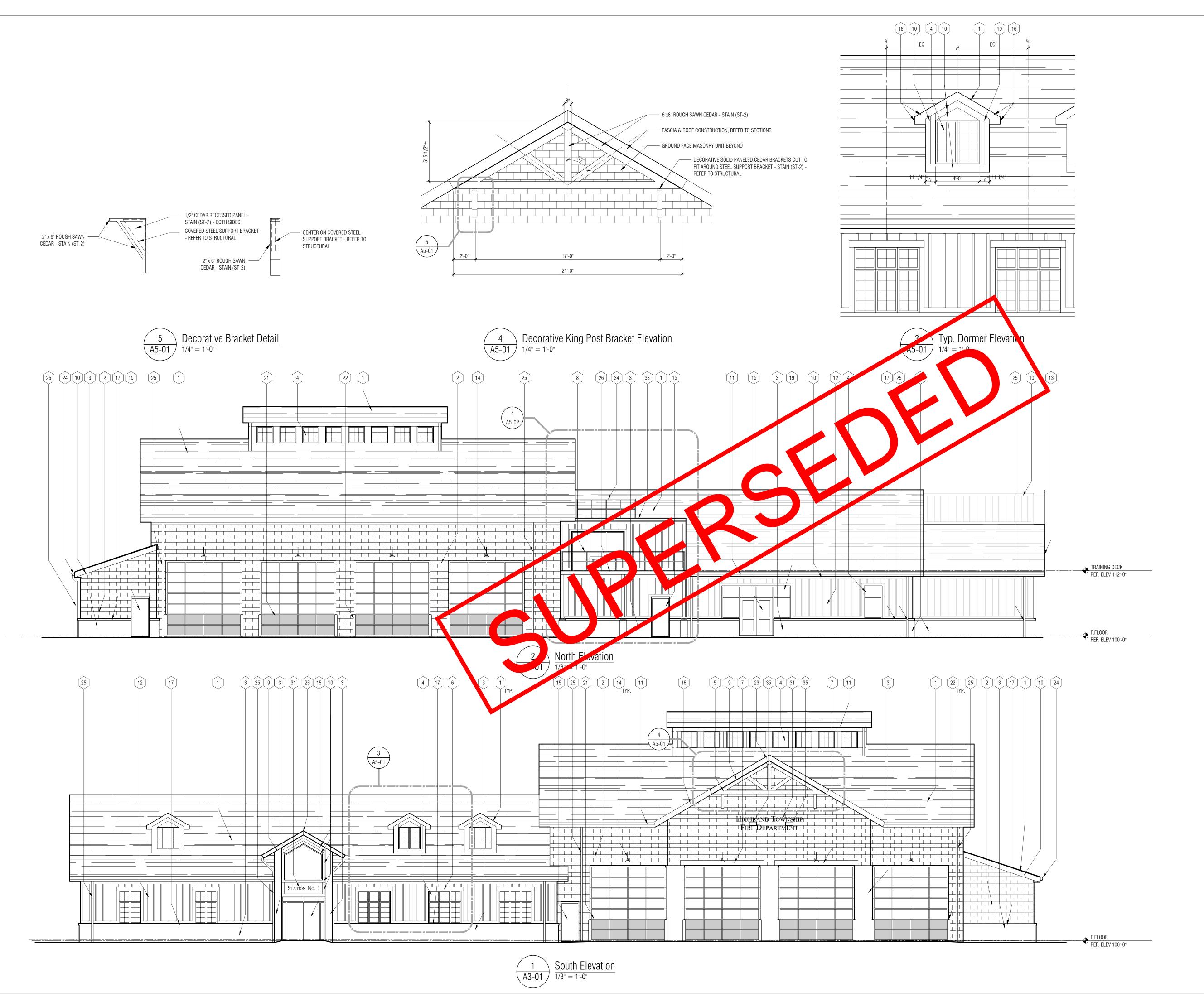
CHECKED BY

LL / AM

APPROVED BY

SHEET NAME

CEILING DETAILS



EXTERIOR ELEVATIONS GENERAL NOTES:

A. REFER TO MATERIAL FINISH / COLOR SCHEDULE (SPEC SECTION 000200) FOR ALL MATERIAL NOTES.

EXTERIOR ELEVATIONS KEY NOTES:

- 1 ASPHALT ROOF SHINGLES (ARS-1)
- 2 GROUND FACE MASONRY UNIT W/ CAVITIES FILLED W/ INSULATION (GFMU-1)
- 3 FULL BED DEPTH NATURAL STONE (STN-1)
- [4] ALUMINUM CLAD FIXED WOOD WINDOW REFER TO SHEET
- 5 CEDAR TIMBER TRUSS REFER TO DETAIL 4/A5-01.
- 6 WOOD-PLASTIC COMPOSITE LUMBER (CL-1)
- 7] WOOD-PLASTIC COMPOSITE LUMBER (CL-2)
- 8 PIPE GUARDRAIL ON BALCONY- ALTERNATE #3 9 METAL SOFFIT (MS-1)
- 10 FIBER-CEMENT TRIM BOARD (SD-3) PAINT
- 11 ALUMINUM GUTTER (MRS-2) ON ALUMINUM FASCIA (MRS-1)
- 12 FIBER-CEMENT BOARD & BATTEN SIDING (SD-1 & SD-2) PAINT
- 13 FIBER-CEMENT SOFFIT (SD-4) PAINT
- 14 GOOSENECK LIGHT FIXTURE SEE ELECTRICAL
- 15 DOOR AND FRAME AS SCHEDULED REFER TO SHEET A0-04 16 ALUMINUM FASCIA (MRS-1)
- 17 CAST STONE SILL (CS-1)
- 18 MECHANICAL UNIT REFER TO MECH.
- [19] ALUMINUM STOREFRONT WINDOW AS SCHEDULED REFER TO SHEET A0-04
- ALUMINUM STOREFRONT WINDOW W/ MULLIONS AS SCHEDULED REFER TO SHEET A0-04
- 21 BASE BID: INSULATED OVERHEAD DOORS REFER TO SHEET ALTERNATE #1: FOUR-FOLD DOORS, REFER TO 012300 -
- 22 6" CONCRETE FILLED BOLLARD
- 23 BIRD'S BEAK ROOF OVERHANG
- 24 6" BOX CHAMFER METAL GUTTER (MRS-2)
- [25] METAL DOWNSPOUT DRAIN TO GROUND LEVEL (MRS-2)
- 26 PRESSURE TREATED WOOD DECKING ALTERNATE #3
- 27 SCUPPER. REF 3/A3-31
- 28 MANUAL MECH. VENT REFER TO MECH.
- 29 THIN VENEER STONE (STN-2)
- 30 LINE OF TRANSITION OF FULL DEPTH TO VENEER STONE REFER TO DETAIL
- BACKLIT METAL CHANNEL LETTERS REFER TO SPECIFICATIONS TO SIZING
- 32 LOUVERED VENT
- 33 REFER TO ROOF PLAN A3-30 FOR SINGLE-PLY ROOFING
- GUARD RAIL SECURED TO FLAT ROOF SYSTEM TO MEET OSHA REQUIREMENTS
- 35 LOUVER VENT ALIGN WITH BLOCK COURSING

PARTNERS



PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

| ISSUES / NEVISIONS | | | | |
|------------------------|----------|--|--|--|
| Bidding - Construction | 03/27/20 | | | |
| Addendum #1 | 04/20/20 | | | |
| Addendum #2 | 04/27/20 | | | |
| Addendum #3 | 04/30/20 | | | |
| Construction Set | 05/04/20 | | | |

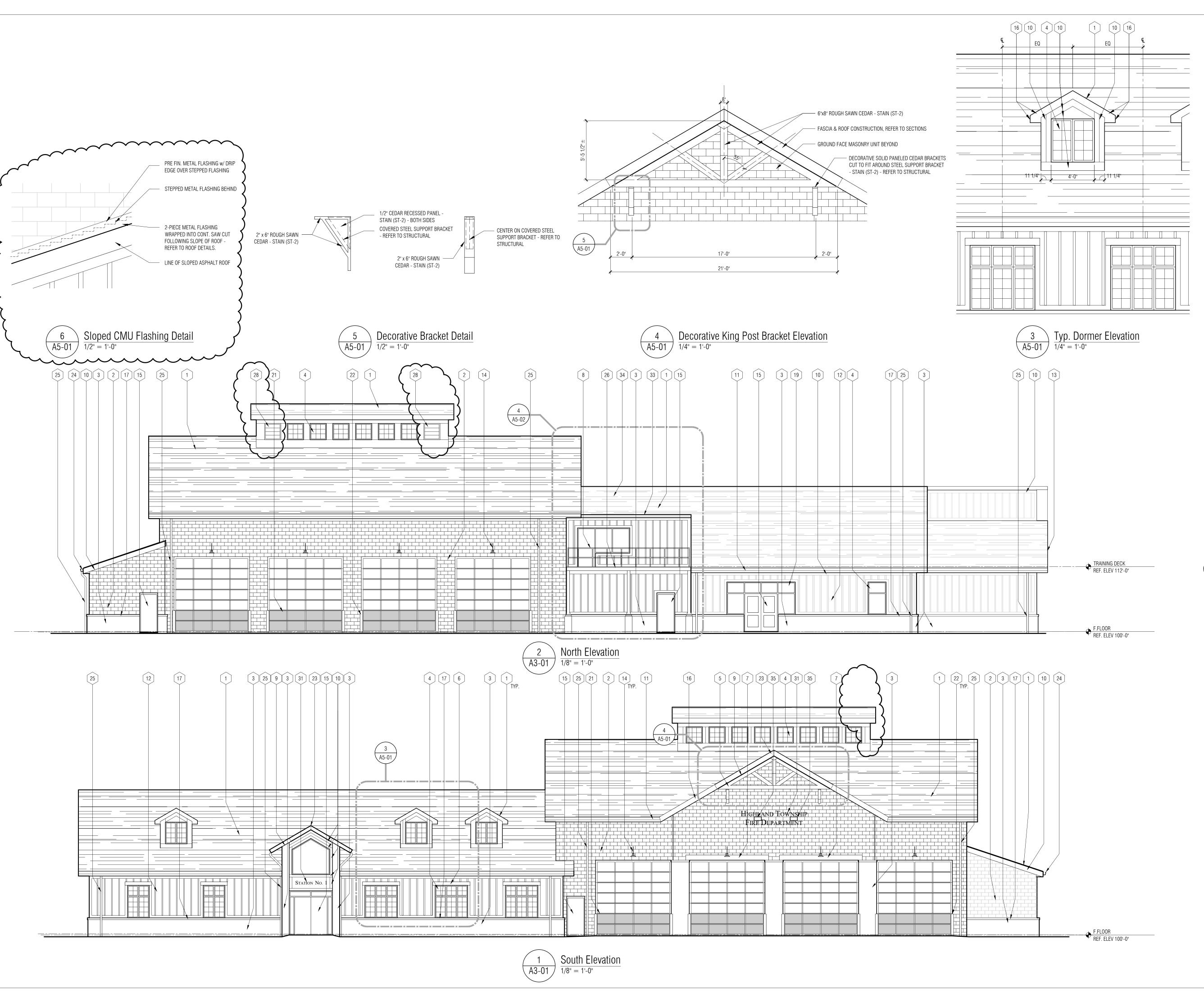
DRAWN BY

CHECKED BY LL / AM

APPROVED BY

SHEET NAME **EXTERIOR**

ELEVATIONS



EXTERIOR ELEVATIONS GENERAL NOTES:

A. REFER TO MATERIAL FINISH / COLOR SCHEDULE (SPEC SECTION 000200) FOR ALL MATERIAL NOTES.

EXTERIOR ELEVATIONS KEY NOTES:

- 1 ASPHALT ROOF SHINGLES (ARS-1)
- GROUND FACE MASONRY UNIT W/ CAVITIES FILLED W/ INSULATION (GFMU-1)
- [3] FULL BED DEPTH NATURAL STONE (STN-1)
- 4 ALUMINUM CLAD FIXED WOOD WINDOW REFER TO SHEET
- 5 CEDAR TIMBER TRUSS REFER TO DETAIL 4/A5-01.
- WOOD-PLASTIC COMPOSITE LUMBER (CL-1)
- WOOD-PLASTIC COMPOSITE LUMBER (CL-2)
- 8 PIPE GUARDRAIL ON BALCONY- ALTERNATE #3
- 9 METAL SOFFIT (MS-1)
- 10 FIBER-CEMENT TRIM BOARD (SD-3) PAINT
- ALUMINUM GUTTER (MRS-2) ON ALUMINUM FASCIA (MRS-1)
- FIBER-CEMENT BOARD & BATTEN SIDING (SD-1 & SD-2) PAINT
- 13 FIBER-CEMENT SOFFIT (SD-4) PAINT
- 14 GOOSENECK LIGHT FIXTURE SEE ELECTRICAL
- 15 DOOR AND FRAME AS SCHEDULED REFER TO SHEET A0-04
- 16 ALUMINUM FASCIA (MRS-1)
- 17 CAST STONE SILL (CS-1)
- MECHANICAL UNIT REFER TO MECH.
- 19 ALUMINUM STOREFRONT WINDOW AS SCHEDULED REFER TO
- SHEET A0-04
- 20 ALUMINUM STOREFRONT WINDOW W/ MULLIONS AS SCHEDULED - REFER TO SHEET A0-04
- 21 BASE BID: INSULATED OVERHEAD DOORS REFER TO SHEET ALTERNATE #1: FOUR-FOLD DOORS, REFER TO 012300 -
- 22 6" CONCRETE FILLED BOLLARD
- 23 BIRD'S BEAK ROOF OVERHANG
- 24 6" BOX CHAMFER METAL GUTTER (MRS-2)
- 25 METAL DOWNSPOUT DRAIN TO GROUND LEVEL (MRS-2)
- 26 PRESSURE TREATED WOOD DECKING ALTERNATE #3
- 27 SCUPPER. REF 3/A3-31
- 28 3' x 3' MECHANICAL LOUVER HOOKED UP TO MECHANICAL -REFER TO MECH.
- 29 THIN VENEER STONE (STN-2)
- 30 LINE OF TRANSITION OF FULL DEPTH TO VENEER STONE REFER TO DETAIL
- 31 BACKLIT METAL CHANNEL LETTERS REFER TO SPECIFICATIONS TO SIZING
- 32 LOUVERED VENT
- REFER TO ROOF PLAN A3-30 FOR SINGLE-PLY ROOFING [34] SLOPED FLASHING AT CMU WALL - REFER TO DETAIL 6/A5-01 35 LOUVER VENT - ALIGN WITH BLOCK COURSING

PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

Statement of Intellectual Property

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| SSUES / REVISIONS | |
|------------------------|---------|
| Bidding - Construction | 03/27/2 |
| Addendum #1 | 04/20/2 |
| Addendum #2 | 04/27/2 |
| Addendum #3 | 04/30/2 |

05/04/20

09/28/20

DRAWN BY

Construction Set

CCD #5

CHECKED BY

LL / AM APPROVED BY

DG

SHEET NAME **EXTERIOR**

ELEVATIONS

000200) FOR ALL MATERIAL NOTES. EXTERIOR ELEVATIONS KEY NOTES: 1 ASPHALT ROOF SHINGLES (ARS-1) 2 GROUND FACE MASONRY UNIT W/ CAVITIES FILLED W/ INSULATION (GFMU-1) 3 FULL BED DEPTH NATURAL STONE (STN-1) 23 1 3 30 29 23 4 ALUMINUM CLAD FIXED WOOD WINDOW - REFER TO SHEET A0-04. 5 CEDAR TIMBER TRUSS - REFER TO DETAIL 4/A5-01. 6 WOOD-PLASTIC COMPOSITE LUMBER (CL-1) 7] WOOD-PLASTIC COMPOSITE LUMBER (CL-2) 8 PIPE GUARDRAIL ON BALCONY- ALTERNATE #3 9 METAL SOFFIT (MS-1) 10 FIBER-CEMENT TRIM BOARD (SD-3) - PAINT 13 FIBER-CEMENT SOFFIT (SD-4) - PAINT 14 GOOSENECK LIGHT FIXTURE - SEE ELECTRICAL 16 ALUMINUM FASCIA (MRS-1) MEZZANINE F.FLOOR REF. ELEV 112'-0" _-_-17 CAST STONE SILL (CS-1) 18 MECHANICAL UNIT - REFER TO MECH. (19) ALUMINUM STOREFRONT WINDOW AS SCHEDULED - REFER TO SHEET A0-04 20 ALUMINUM STOREFRONT WINDOW W/ MULLIONS AS SCHEDULED - REFER TO SHEET A0-04 21 BASE BID: INSULATED OVERHEAD DOORS - REFER TO SHEET $\frac{4}{A5-01} \frac{\text{North Elevation - No Deck - Base Bid}}{1/8" = 1'-0"}$ ALTERNATES 22 6" CONCRETE FILLED BOLLARD 23 BIRD'S BEAK ROOF OVERHANG 24 6" BOX CHAMFER METAL GUTTER (MRS-2) 26 PRESSURE TREATED WOOD DECKING - ALTERNATE #3 27 SCUPPER. REF 3/A3-31 28 MANUAL MECH. VENT - REFER TO MECH. 29 THIN VENEER STONE (STN-2) 30 LINE OF TRANSITION OF FULL DEPTH TO VENEER STONE - REFER TO DETAIL 31 BACKLIT METAL CHANNEL LETTERS - REFER TO SPECIFICATIONS TO SIZING 32 LOUVERED VENT 33 REFER TO ROOF PLAN A3-30 FOR SINGLE-PLY ROOFING GUARD RAIL SECURED TO FLAT ROOF SYSTEM TO MEET OSHA REQUIREMENTS 2 25 11 3 1 17 12 25 1 3 17 33 12 32 10 2 15 24 6 1 6 4 1 23 29 30 3 23 28 15 35 LOUVER VENT - ALIGN WITH BLOCK COURSING A5-02 8 A3-31 A3-31 MEZZANINE F.FLOOR REF. ELEV 112'-0" West Elevation $\sqrt{A3-01}$ 1/8" = 1'-0"

EXTERIOR ELEVATIONS GENERAL NOTES:

A. REFER TO MATERIAL FINISH / COLOR SCHEDULE (SPEC SECTION

- 11 ALUMINUM GUTTER (MRS-2) ON ALUMINUM FASCIA (MRS-1)
- 12 FIBER-CEMENT BOARD & BATTEN SIDING (SD-1 & SD-2) PAINT
- 15 DOOR AND FRAME AS SCHEDULED REFER TO SHEET A0-04
- ALTERNATE #1: FOUR-FOLD DOORS, REFER TO 012300 -
- (25) METAL DOWNSPOUT DRAIN TO GROUND LEVEL (MRS-2)

PARTNERS



PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

Bidding - Construction 03/27/20 Addendum #1 04/20/20 Construction Set 05/04/20

DRAWN BY

CHECKED BY

LL / AM APPROVED BY

SHEET NAME

EXTERIOR ELEVATIONS

23 1 3 30 29 23 MEZZANINE F.FLOOR REF. ELEV 112'-0" $\frac{4}{A5-01} \frac{\text{North Elevation - No Deck - Base Bid}}{1/8" = 1'-0"}$ $\frac{3}{A3-01}$ East Eleva 2 25 11 3 1 17 12 6 4 1 23 29 30 3 23

A5-02

West Elevation - No Deck - Base Bid

 $\sqrt{A5-02}$ 1/8" = 1'-0"

EXTERIOR ELEVATIONS GENERAL NOTES:

A. REFER TO MATERIAL FINISH / COLOR SCHEDULE (SPEC SECTION 000200) FOR ALL MATERIAL NOTES.

EXTERIOR ELEVATIONS KEY NOTES:

- 1 ASPHALT ROOF SHINGLES (ARS-1)
- 2 GROUND FACE MASONRY UNIT W/ CAVITIES FILLED W/ INSULATION (GFMU-1)
- 3 FULL BED DEPTH NATURAL STONE (STN-1)
- 4 ALUMINUM CLAD FIXED WOOD WINDOW REFER TO SHEET A0-04.
- 5 CEDAR TIMBER TRUSS REFER TO DETAIL 4/A5-01.
- 6 WOOD-PLASTIC COMPOSITE LUMBER (CL-1)
- 7] WOOD-PLASTIC COMPOSITE LUMBER (CL-2)
- 8 PIPE GUARDRAIL ON BALCONY- ALTERNATE #3
- 9 METAL SOFFIT (MS-1)
- 10 FIBER-CEMENT TRIM BOARD (SD-3) PAINT
- 11 ALUMINUM GUTTER (MRS-2) ON ALUMINUM FASCIA (MRS-1)
- 12 FIBER-CEMENT BOARD & BATTEN SIDING (SD-1 & SD-2) PAINT
- 13 FIBER-CEMENT SOFFIT (SD-4) PAINT
- 14 GOOSENECK LIGHT FIXTURE SEE ELECTRICAL
- 15 DOOR AND FRAME AS SCHEDULED REFER TO SHEET A0-04
- 16 ALUMINUM FASCIA (MRS-1)
- 17 CAST STONE SILL (CS-1)
- 18 MECHANICAL UNIT REFER TO MECH.
- 19 ALUMINUM STOREFRONT WINDOW AS SCHEDULED REFER TO SHEET A0-04
- 20 ALUMINUM STOREFRONT WINDOW W/ MULLIONS AS SCHEDULED REFER TO SHEET A0-04
- 21 BASE BID: INSULATED OVERHEAD DOORS REFER TO SHEET
- 22 6" CONCRETE FILLED BOLLARD
- 23 BIRD'S BEAK ROOF OVERHANG
- 24 6" BOX CHAMFER METAL GUTTER (MRS-2)
- [25] METAL DOWNSPOUT DRAIN TO GROUND LEVEL (MRS-2)

ALTERNATE #1: FOUR-FOLD DOORS, REFER TO 012300 -

- 26 PRESSURE TREATED WOOD DECKING ALTERNATE #3
- 27 SCUPPER. REF 3/A3-31

 28 3' x 3' MECHANICAL LOUVER HOOKED UP TO MECHANICAL -
- REFER TO MECH.

 29 THIN VENEER STONE (STN-2)
- 30 LINE OF TRANSITION OF FULL DEPTH TO VENEER STONE REFER TO DETAIL
- 31 BACKLIT METAL CHANNEL LETTERS REFER TO SPECIFICATIONS TO SIZING
- 32 LOUVERED VENT

MEZZANINE F.FLOOR
REF. ELEV 112'-0"

A3-31

West Elevation

A3-01 1/8" = 1'-0"

- 33 REFER TO ROOF PLAN A3-30 FOR SINGLE-PLY ROOFING 34 SLOPED FLASHING AT CMU WALL - REFER TO DETAIL 6/A5-01
- 35 LOUVER VENT ALIGN WITH BLOCK COURSING

PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

Statement of Intellectual Property

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

Bidding - Construction 03/27/20 Addendum #1 04/20/20 05/04/20 Construction Set 06/22/20 ASI #1 CCD #5 09/28/20

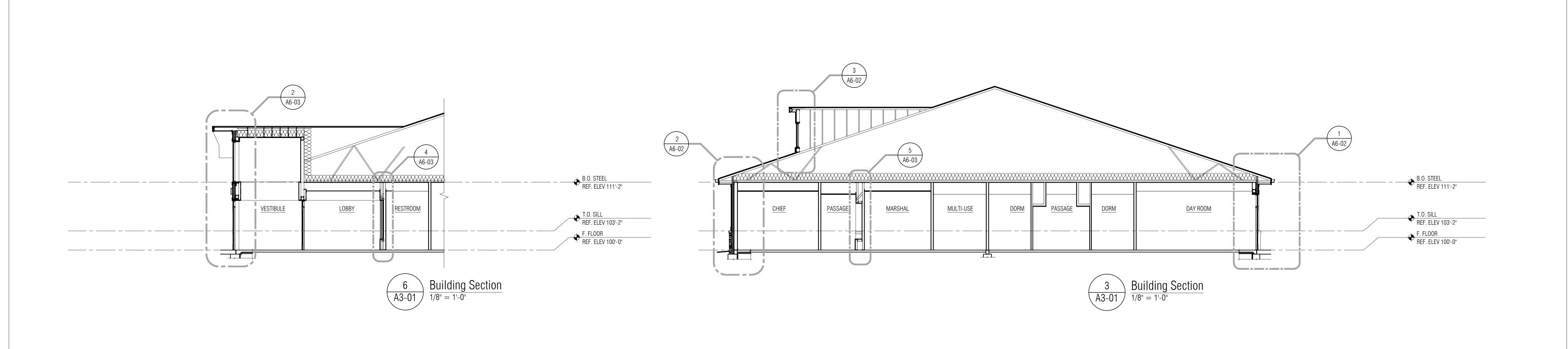
DRAWN BY

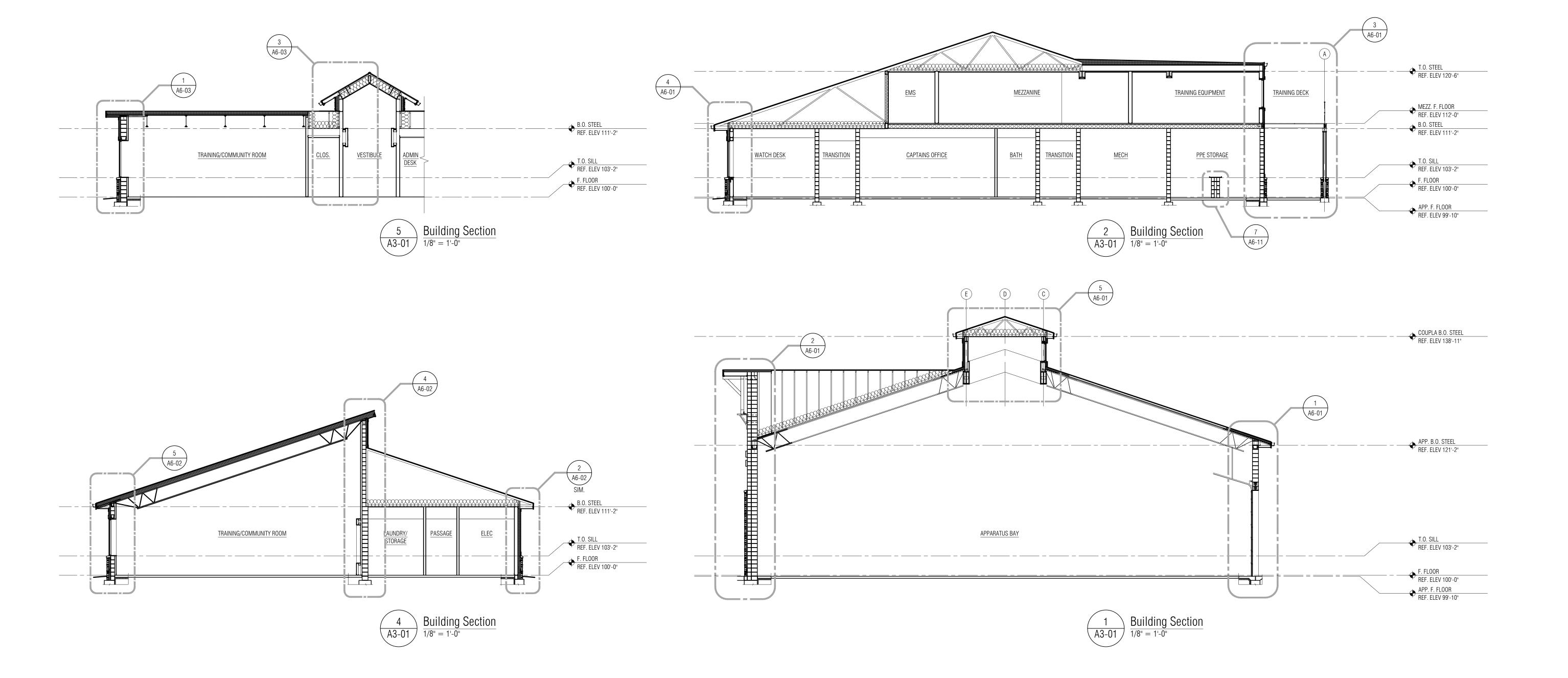
CHECKED BY LL / AM

APPROVED BY

SHEET NAME

EXTERIOR ELEVATIONS







PARTNERS in Architecture, PLC 65 MARKET STREET

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

KEY PLAN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

Bidding - Construction 03/27/20 Construction Set 05/04/20

DRAWN BY

CHECKED BY

LL / AM

APPROVED BY

SHEET NAME

BUILDING SECTIONS

3 A6-04 COUPLA T.O. STEEL REF. ELEV 139'-7" 4 A6-04 8 A6-11 MEZZANINE MEZZ. F. FLOOR REF. ELEV 112'-0" B.O. STEEL REF. ELEV 111'-2" _____ <u>BATH</u> <u>DORM</u> TRANSITION LAUNDRY/STORAGE DORM APPARATUS BAY T.O. SILL REF. ELEV 103'-2" SCBA MAINTENAN CE F. FLOOR REF. ELEV 100'-0"

PARTNERS



PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

KEY PLAN

OWN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

Bidding - Construction 03/27/20 Construction Set 05/04/20

DRAWN BY

CHECKED BY

LL / AM

APPROVED BY

SHEET NAME

BUILDING SECTIONS

3 A6-04 COUPLA T.O. STEEL REF. ELEV 139'-7" 4 A6-04 - - A3-31 -A6-04 8 A6-11 MEZZANINE MEZZ. F. FLOOR REF. ELEV 112'-0" B.O. STEEL REF. ELEV 111'-2" _____ <u>BATH</u> <u>DORM</u> TRANSITION LAUNDRY/STORAGE DORM DORM APPARATUS BAY T.O. SILL REF. ELEV 103'-2" SCBA MAINTENANCE F. FLOOR REF. ELEV 100'-0" $\underbrace{\frac{1}{A3-01}} \quad \underbrace{ \begin{array}{l} \text{Building Section} \\ 1/8" = 1'-0" \end{array} }$

PARTNERS



PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

KEY PI

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

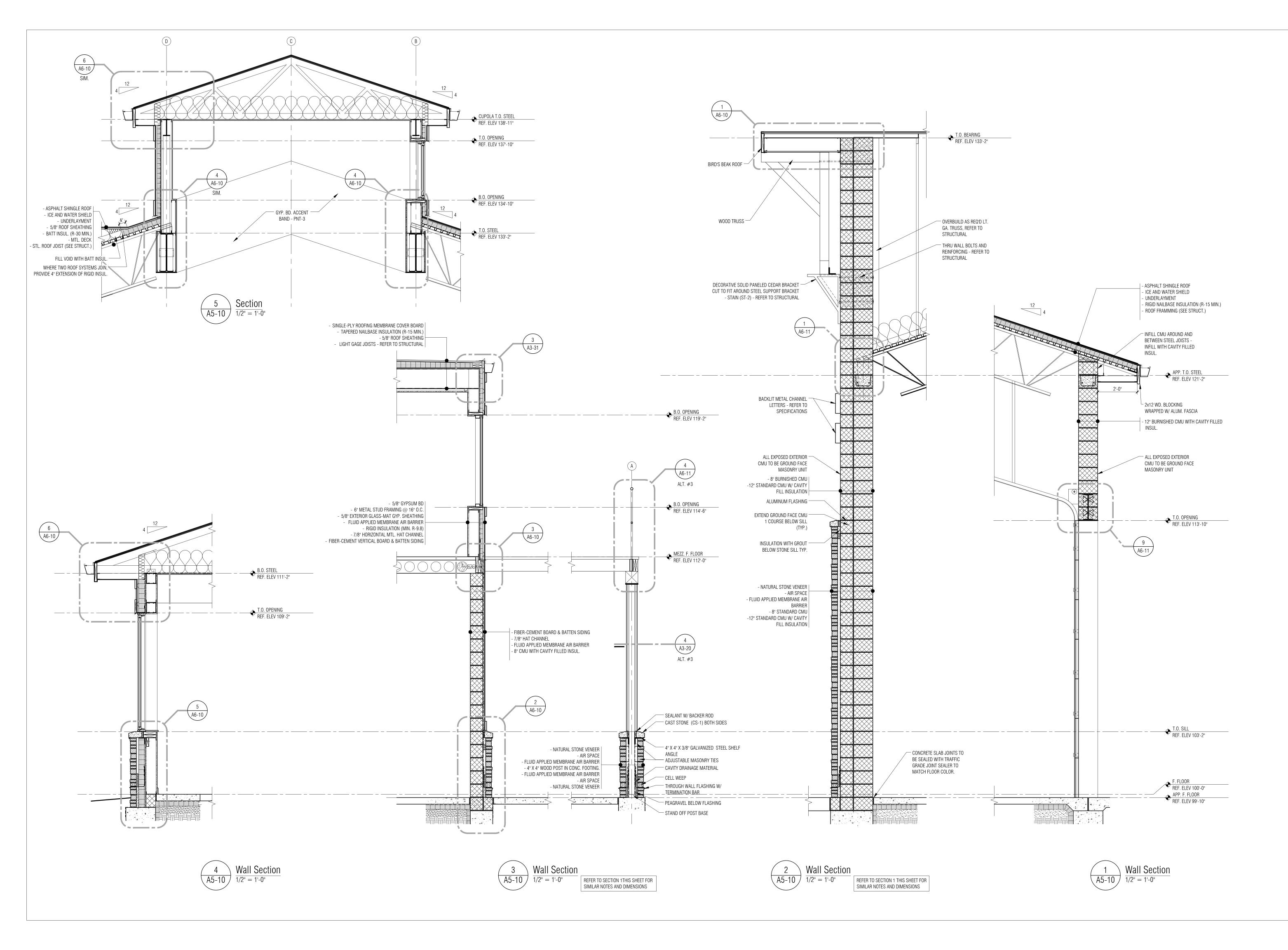
| Bidding - Construction | 03/27/20 |
|------------------------|----------|
| Construction Set | 05/04/20 |
| PR #1 | 09/21/20 |

DRAWN BY

CHECKED BY
LL / AM
APPROVED BY

DG SHEET NAME

BUILDING SECTIONS





PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043

MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

VEV 51 441

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, Ml 48357

PROJECT NO.

18-122A

| ISSUES / REVISIONS | _ |
|------------------------|----------|
| Bidding - Construction | 03/27/20 |
| Addendum #1 | 04/20/20 |
| Addendum #3 | 04/30/20 |
| Construction Set | 05/04/20 |
| | |

DRAWN BY

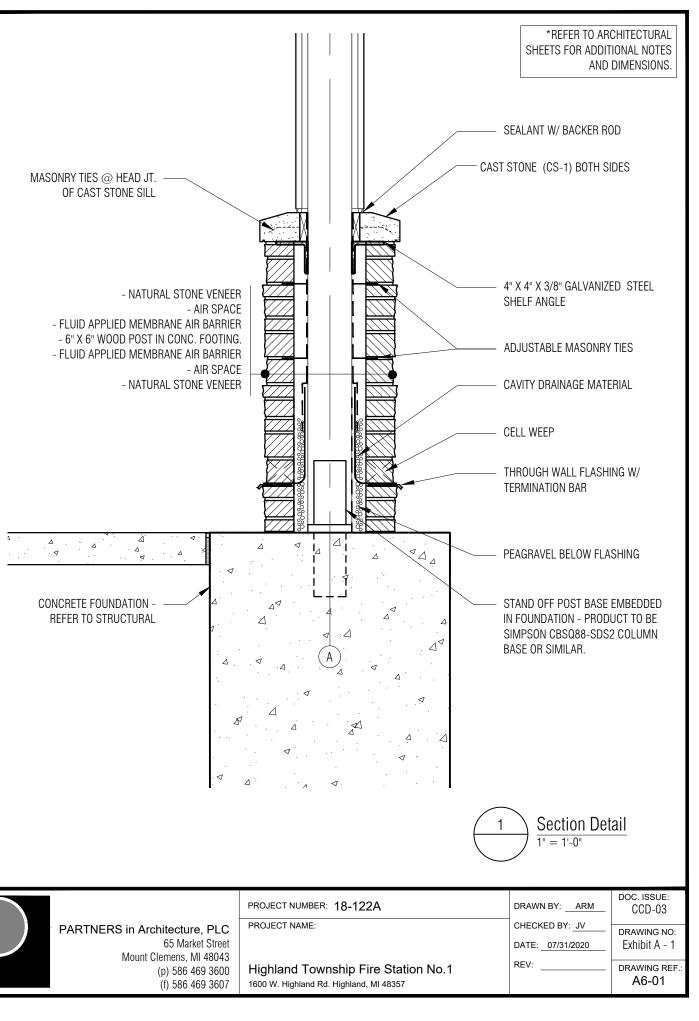
CHECKED BY

APPROVED BY

SHEET NAME

WALL SECTIONS

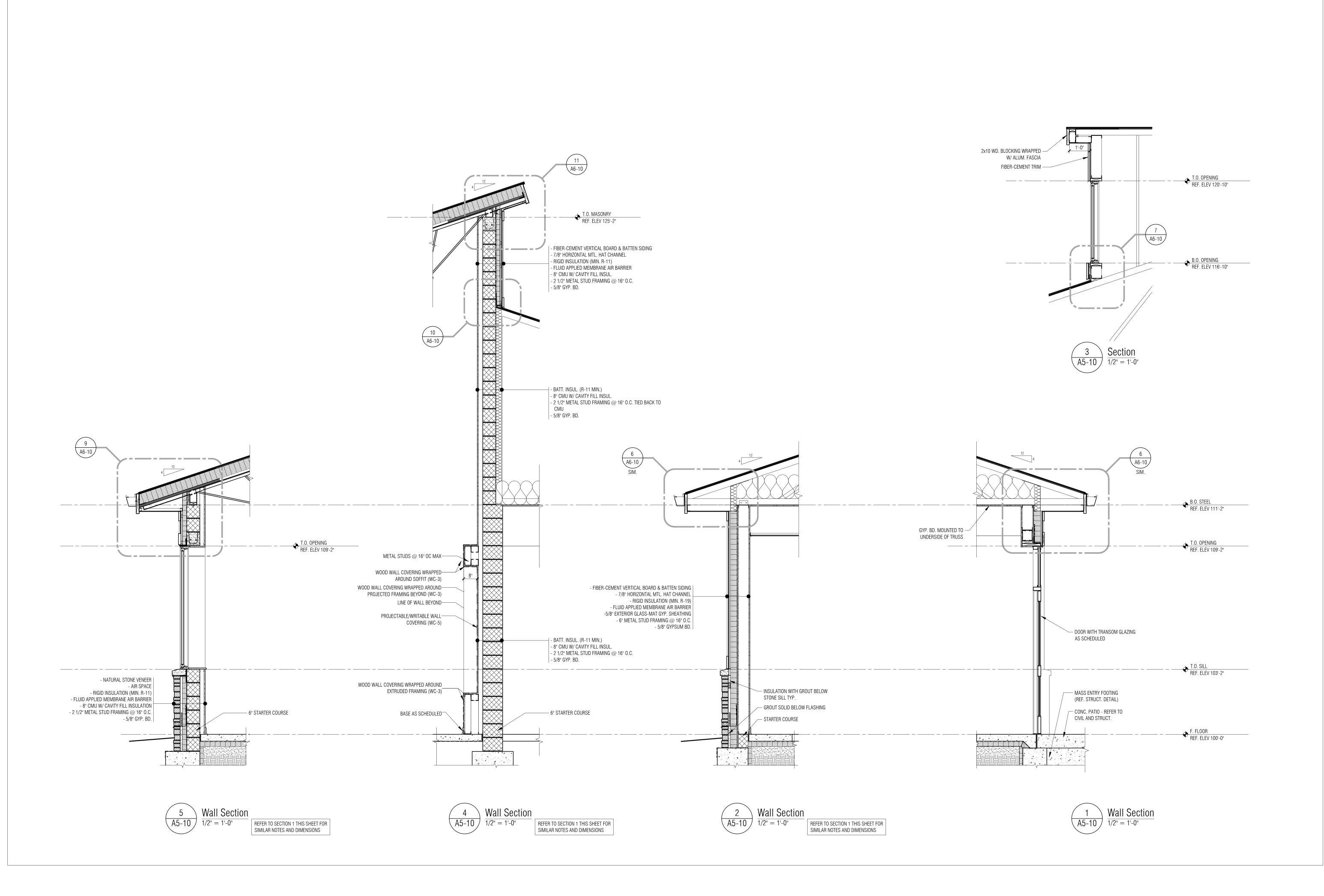
SHEET NO. A6-01



Project Number: 18-122A

ITEM A8 A6-01 WALL SECTIONS (NOT ISSUED)

ARCHITECTURAL & MECHANICAL – CCD 5 Highland Township – Highland Township Fire Station No. 1 Project Name: Issue Date: Sept. 30, 2020 Project Location: 1600 W. Highland Rd. Highland, MI 48357 A. Non-comb rating no longer needed for roof sheathing.B. Roof sheathing to be changed to vented roof sheathing at required areas – refer to roof plan.





PARTNERS in Architecture, PLC
65 MARKET STREET

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

OWNI

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

Bidding - Construction 03/27/20
Construction Set 05/04/20

DRAWN BY

CHECKED BY LL / AM

APPROVED BY

DG

SHEET NAME

WALL SECTIONS

Project Name:

Highland Township – Highland Township Fire Station No. 1 CCD No: Five (5)

Project Number: Project Location:

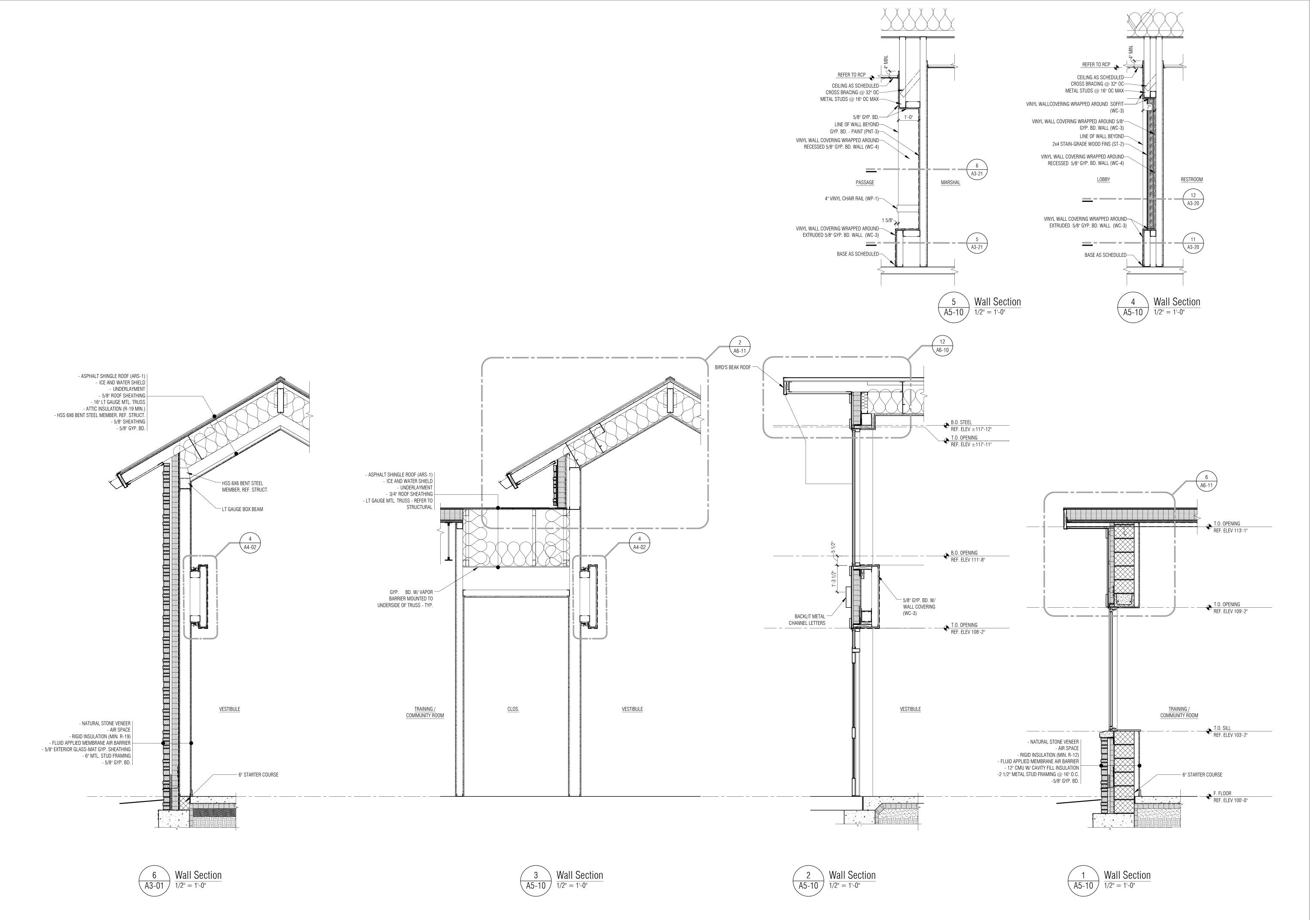
18-122A 1600 W. Highland Rd. Highland, MI 48357

Issue Date: Sept. 30, 2020

A6-02 WALL SECTIONS (NOT ISSUED)

A. Non-comb rating no longer needed for roof sheathing.

B. Roof sheathing to be changed to vented roof sheathing at required areas – refer to roof plan.





PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600

Statement of Intellectual Property

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

VEV 51 AM

OMMED

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

Bidding - Construction 03/27/20
Construction Set 05/04/20

DRAWN BY

CHECKED BY

LL / AM

APPROVED BY

SHEET NAME

WALL SECTIONS

Highland Township – Highland Township Fire Station No. 1 Project Name:

CCD No: Five (5)

Project Number: Project Location:

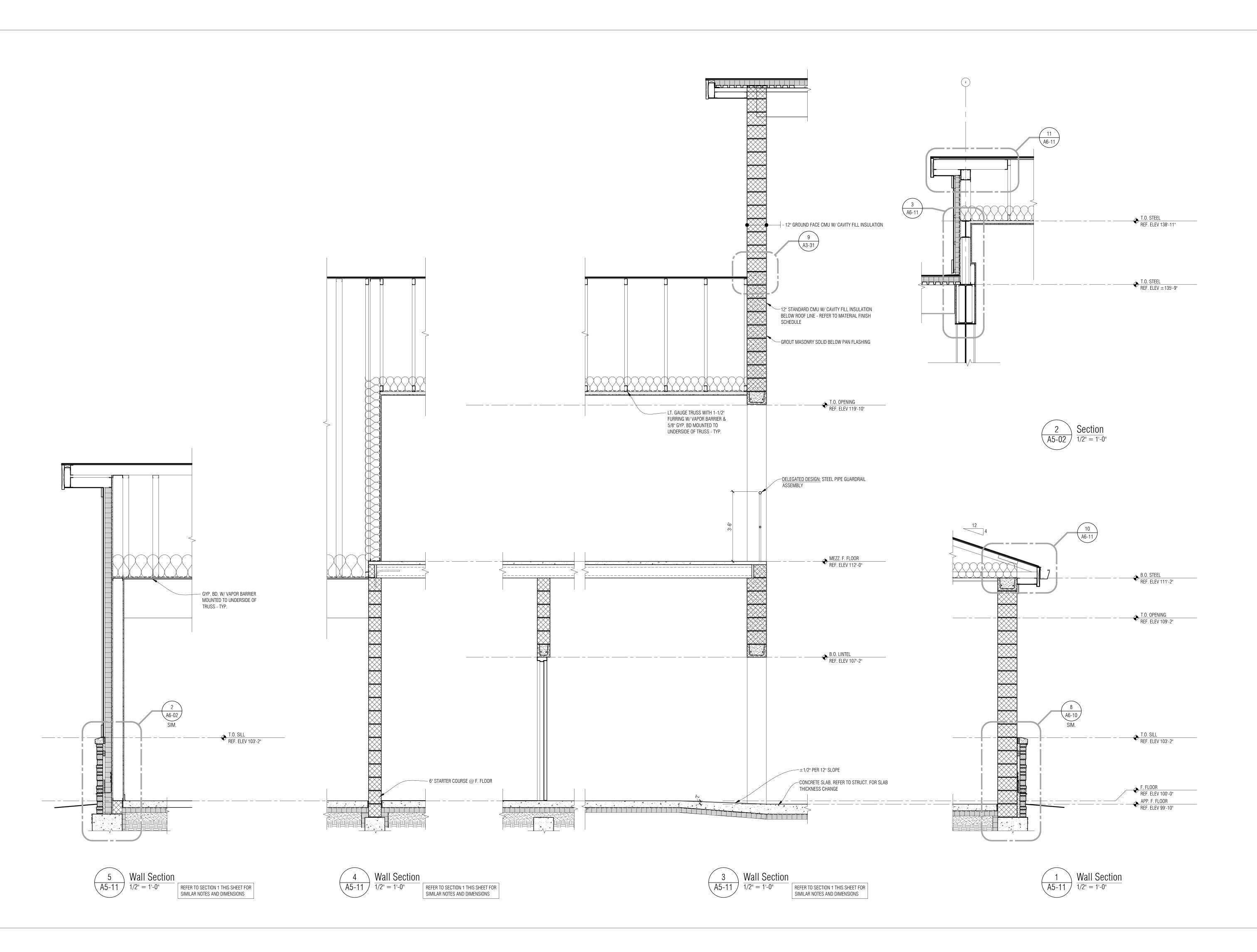
18-122A 1600 W. Highland Rd. Highland, MI 48357 Issue Date: Sept. 30, 2020

ITEM A10

A6-03 WALL SECTIONS (NOT ISSUED)

A. Non-comb rating no longer needed for roof sheathing.

B. Roof sheathing to be changed to vented roof sheathing at required areas – refer to roof plan.





PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

F 586.469.3607

CONSULTANT

KEA DI VVI

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| SSUES / REVISIONS | |
|------------------------|----------|
| Bidding - Construction | 03/27/20 |
| Addendum #1 | 04/20/20 |
| Addendum #2 | 04/27/20 |
| Construction Set | 05/04/20 |

DRAWN BY

CHECKED BY LL / AM

APPROVED BY

DG

SHEET NAME
WALL SECTIONS

SHEET NO. A6-04

Project Name:

Highland Township – Highland Township Fire Station No. 1

CCD No: Five (5)

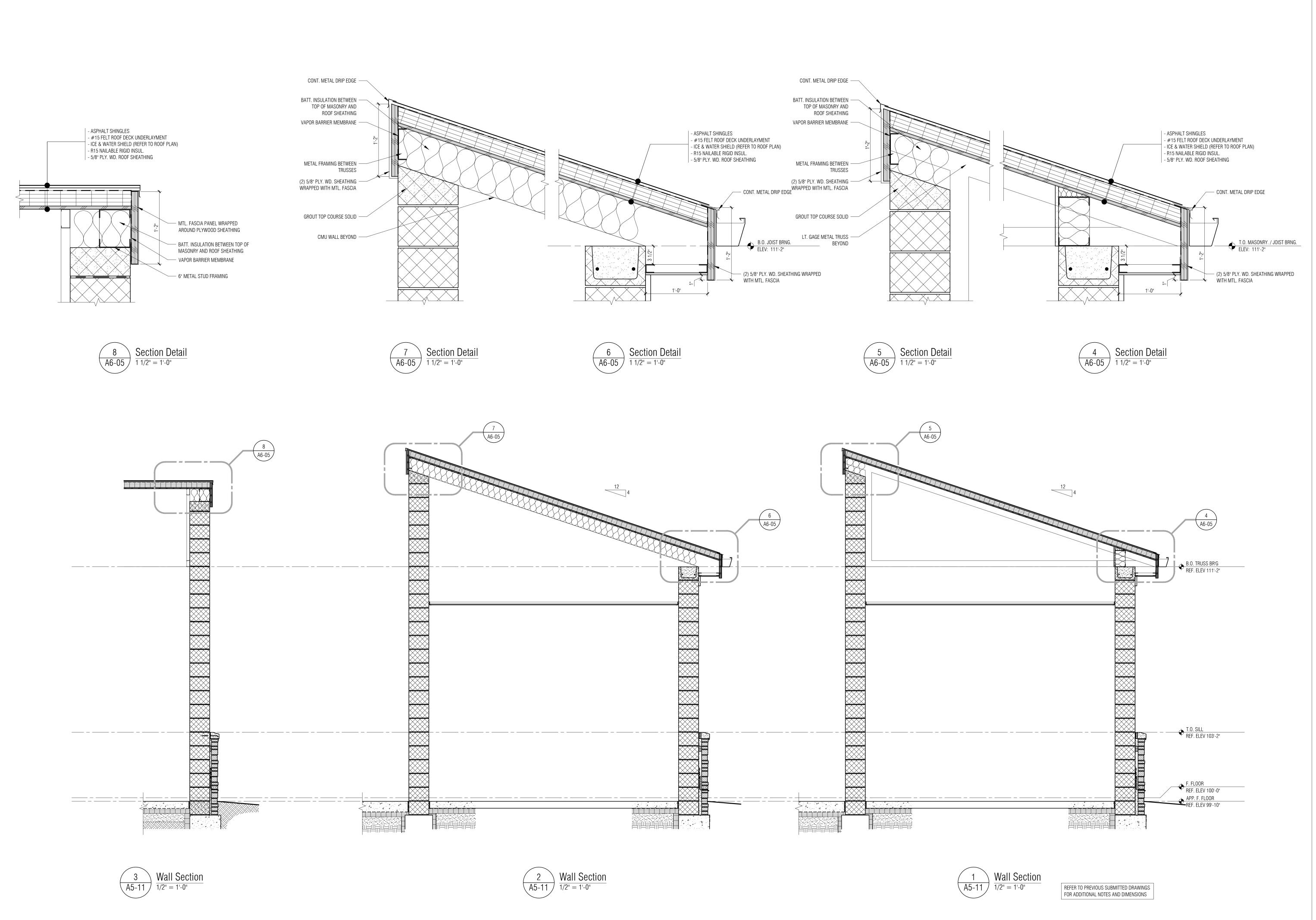
Issue Date: Sept. 30, 2020

Project Number: Project Location:

18-122A 1600 W. Highland Rd. Highland, MI 48357

A6-04 WALL SECTIONS (NOT ISSUED)

A. Non-comb rating no longer needed for roof sheathing.B. Roof sheathing to be changed to vented roof sheathing at required areas – refer to roof plan.





PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600

Statement of Intellectual Property

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

I/EV DL AN

OWNED

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

 Bidding - Construction
 03/27/20

 ASI #3 R1
 10/28/20

DRAWN BY

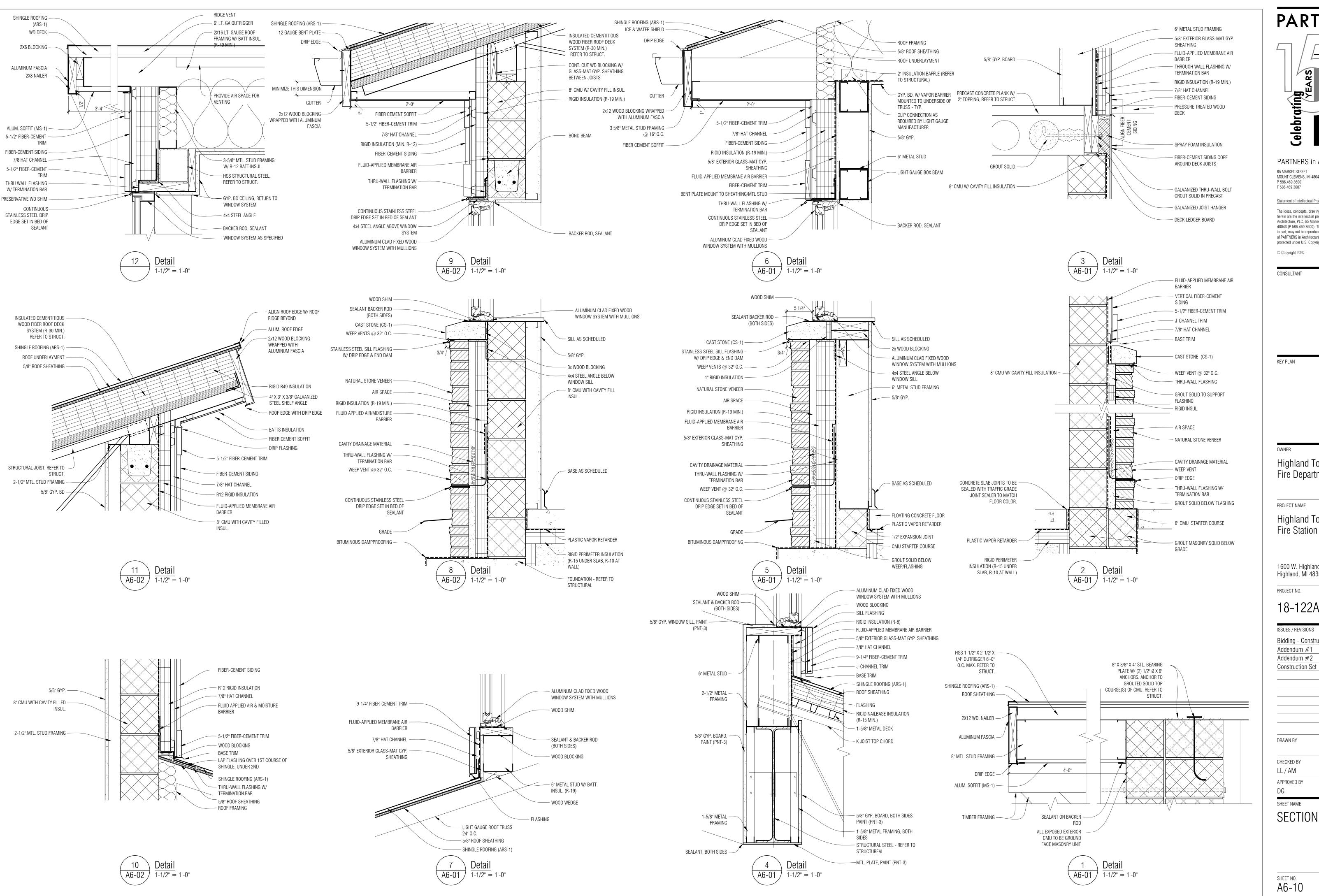
CHECKED BY

LL / AM APPROVED BY

DG APPROVED BY

SHEET NAME

WALL SECTIONS





PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS Bidding - Construction Addendum #1

05/04/20

03/27/20

04/20/20

04/27/20

DRAWN BY

CHECKED BY LL / AM

APPROVED BY

SHEET NAME

SECTION DETAILS

Project Name:

Highland Township – Highland Township Fire Station No. 1

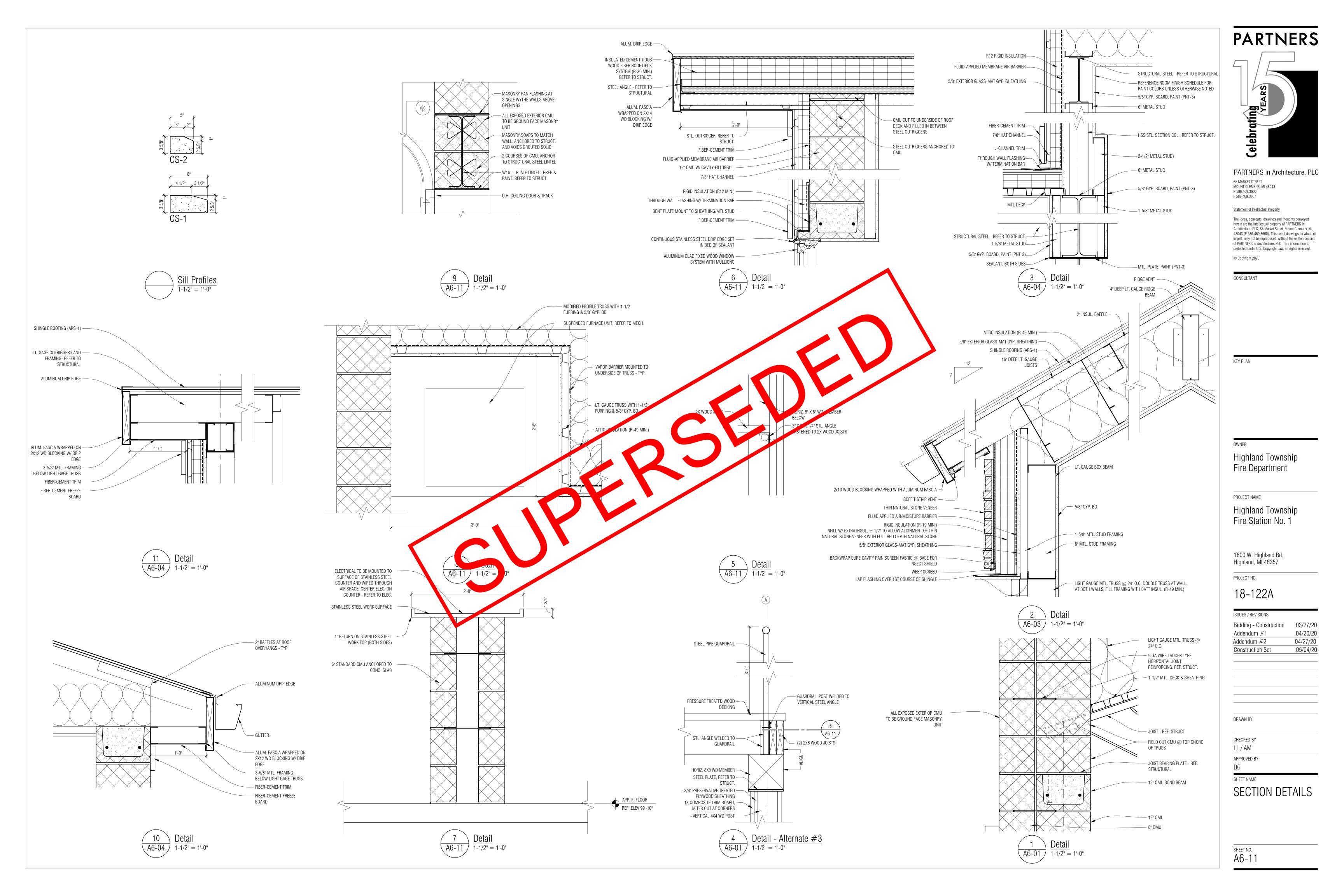
18-122A 1600 W. Highland Rd. Highland, MI 48357 Issue Date: Sept. 30, 2020

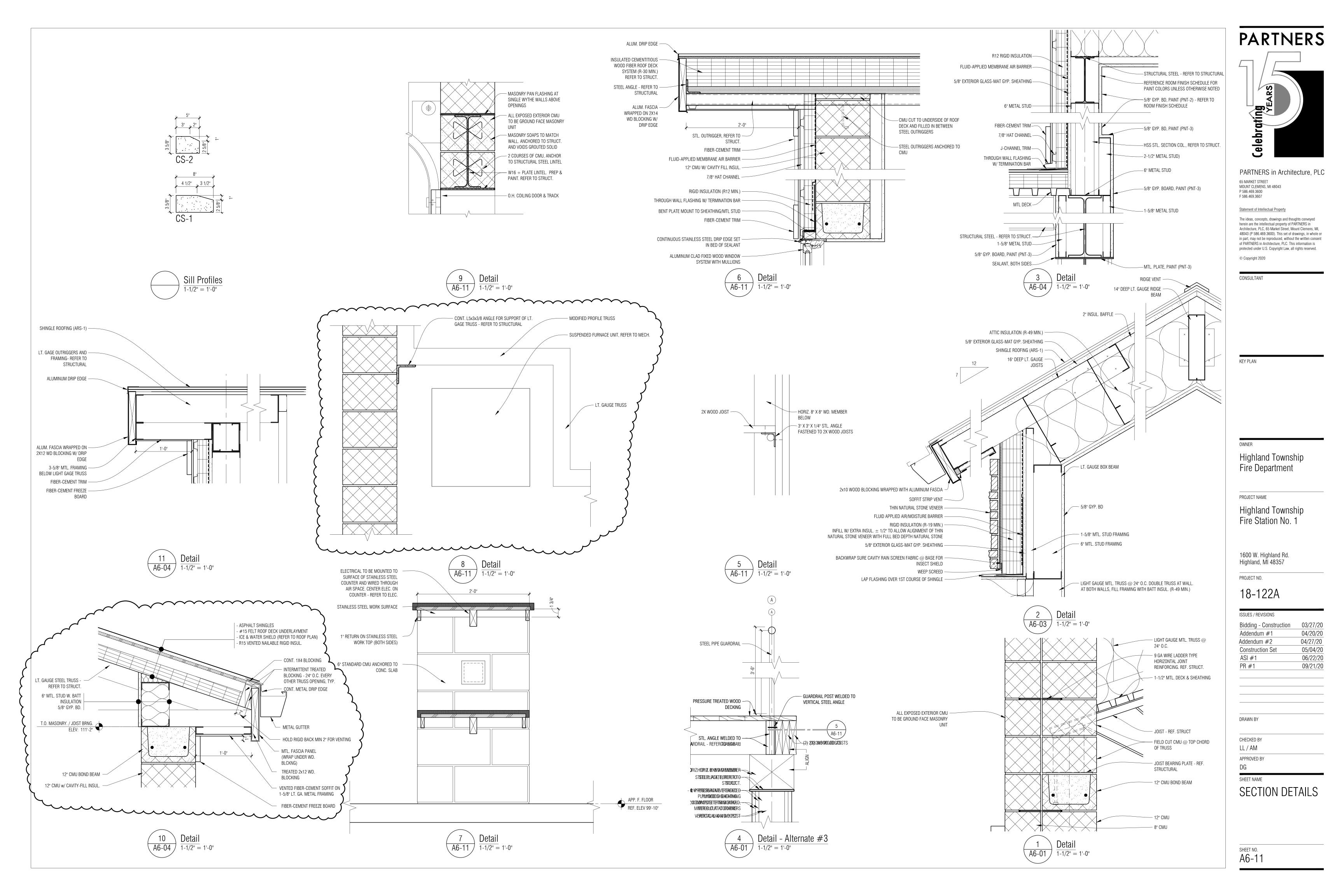
CCD No: Five (5)

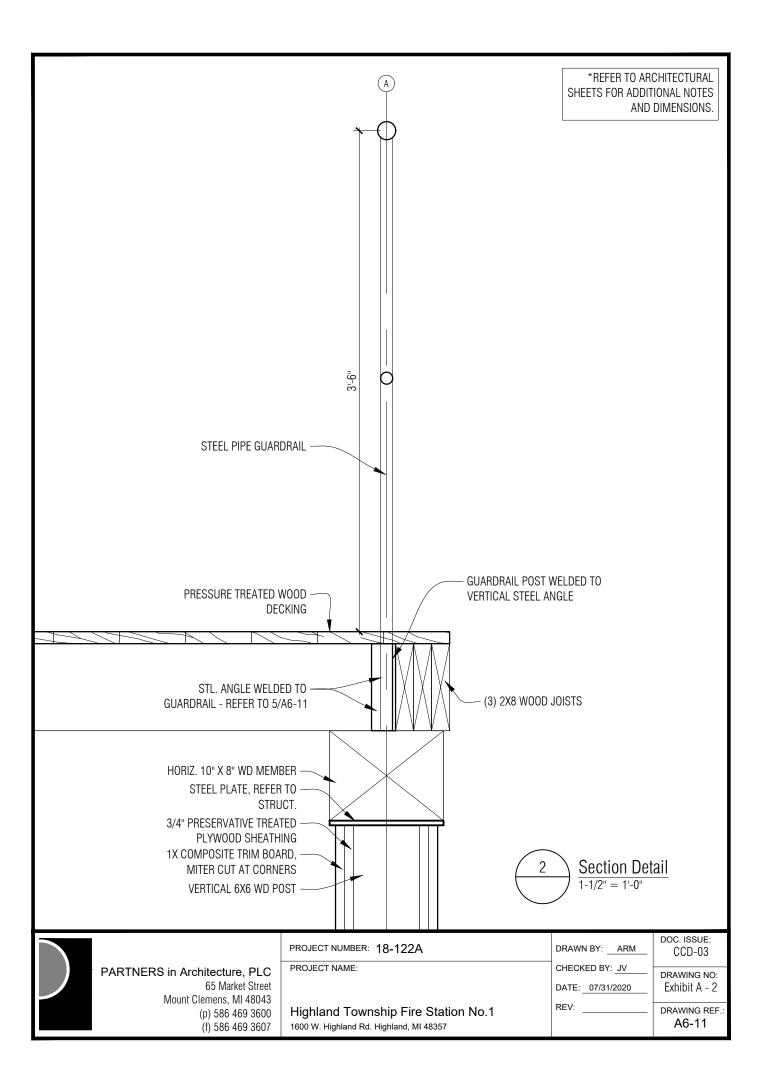
ITEM A12 A6-10 SECTIONS DETAILS (NOT ISSUED)

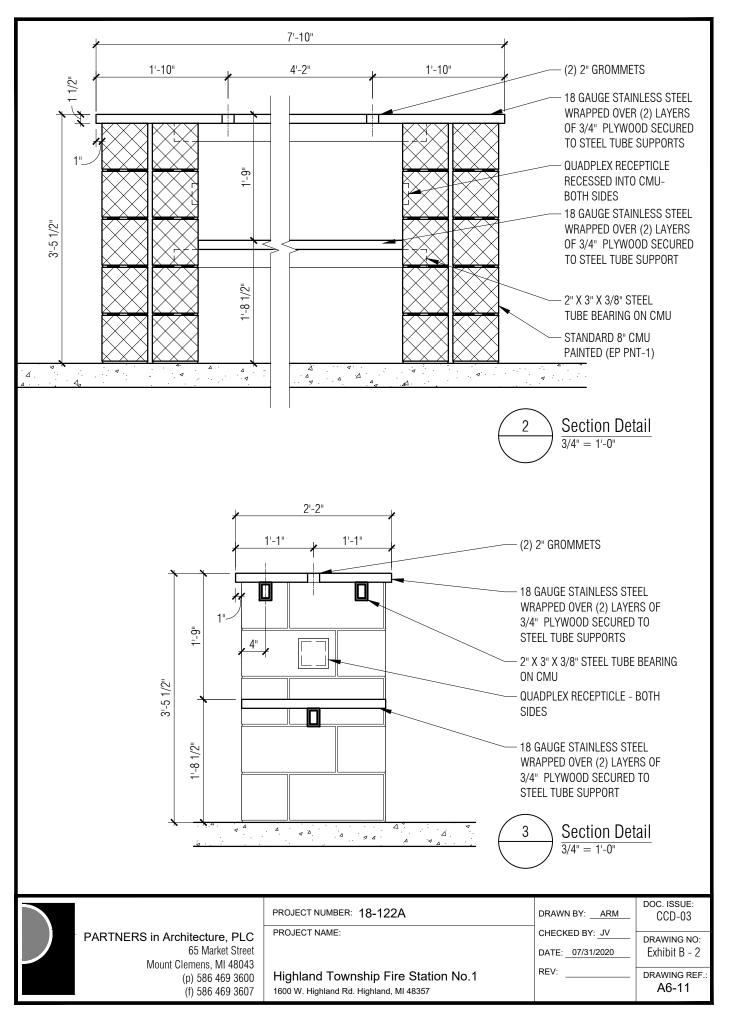
Project Number: Project Location:

A. Non-comb rating no longer needed for roof sheathing.B. Roof sheathing to be changed to vented roof sheathing at required areas – refer to roof plan.









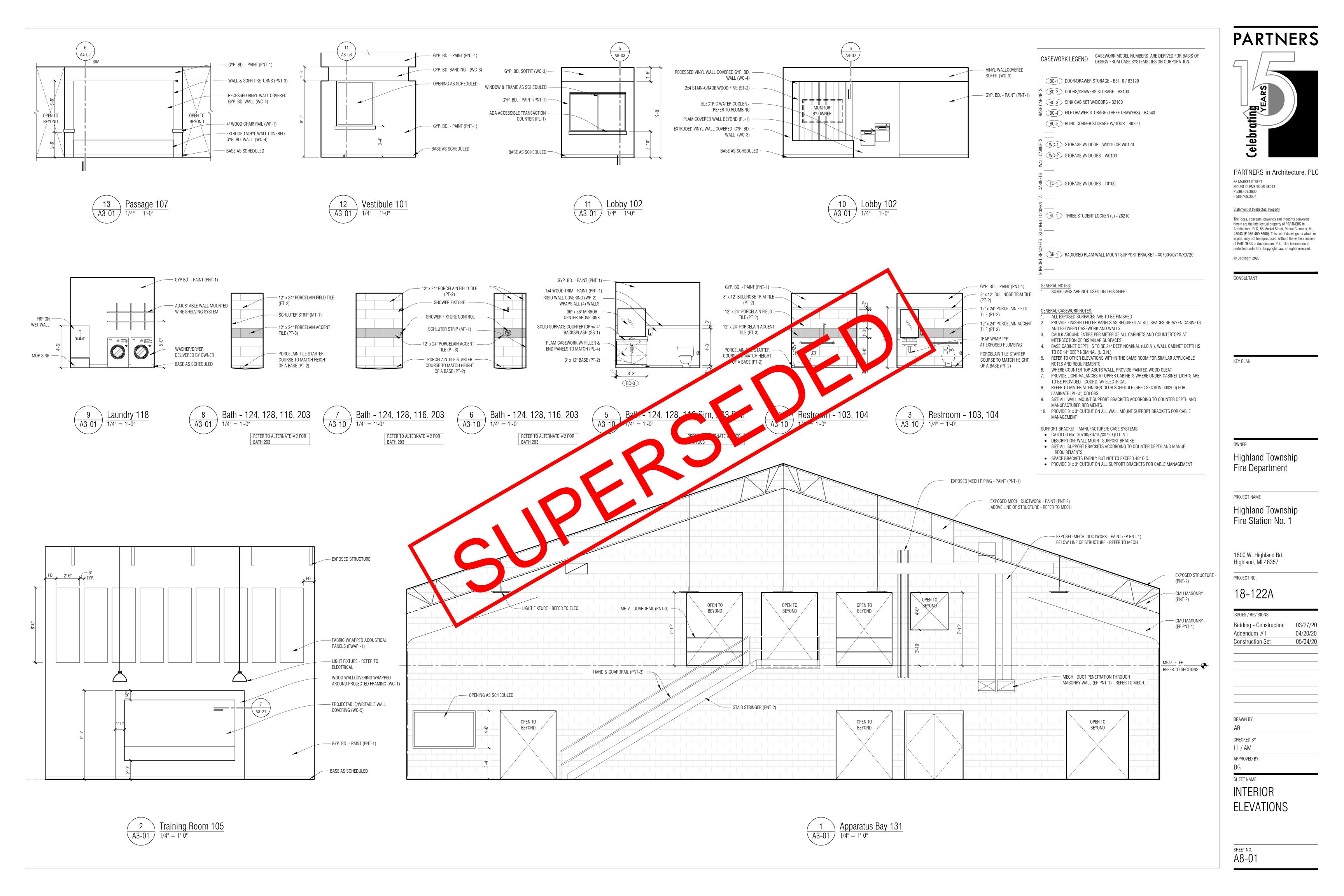
Project Name: Highland Township – Highland Township Fire Station No. 1 CCD No: Five (5)

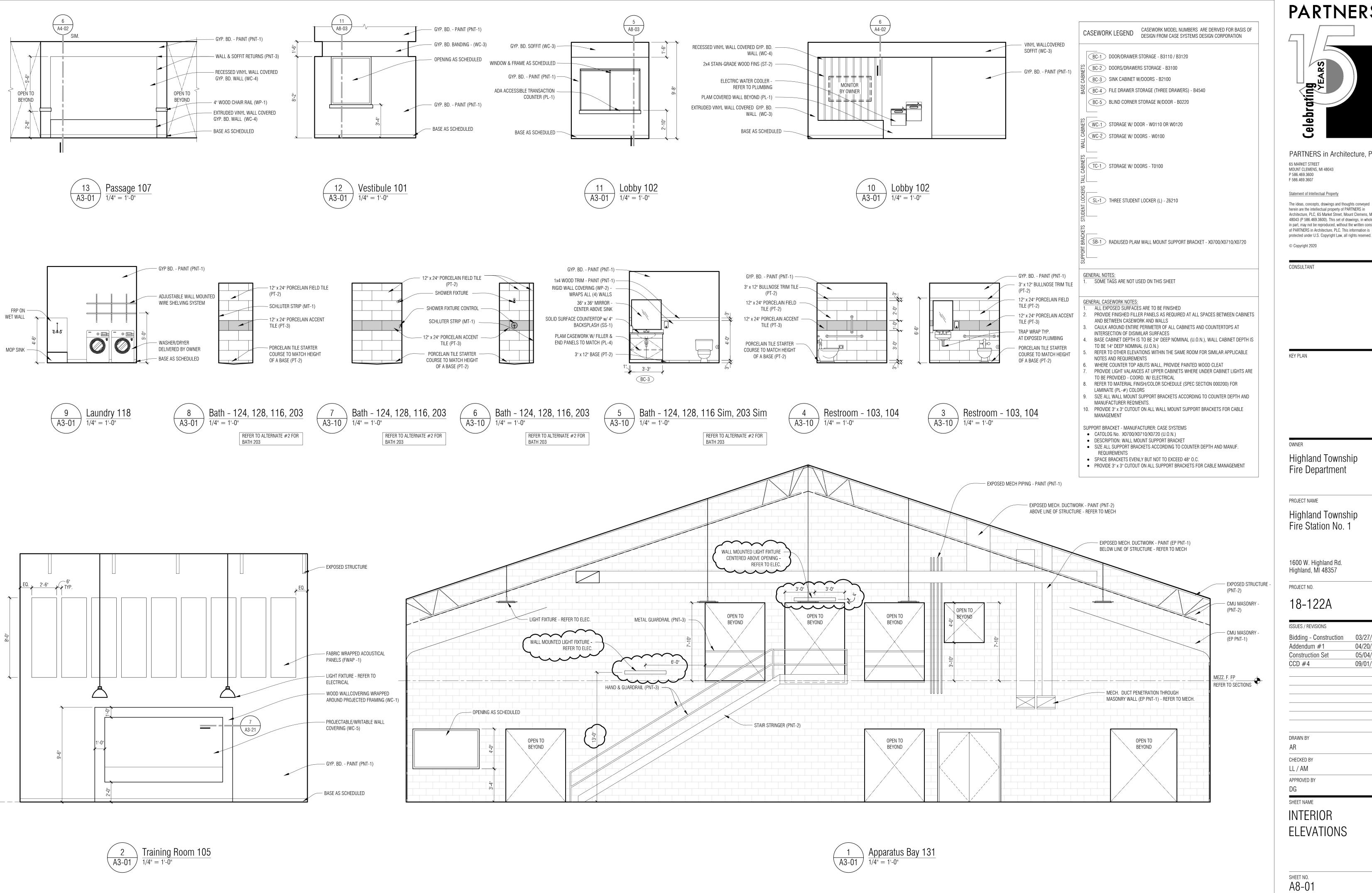
Project Number: 18-122A Issue Date: Sept. 30, 2020
Project Location: 1600 W. Highland Rd. Highland, MI 48357

ITEM A13 A6-11 SECTIONS DETAILS (NOT ISSUED)

A. Non-comb rating no longer needed for roof sheathing.

Roof sheathing to be changed to vented roof sheathing at required areas – refer to roof plan.







PARTNERS in Architecture, PLC

Statement of Intellectual Property

herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

Highland Township

Highland Township Fire Station No. 1

Bidding - Construction 04/20/20 05/04/20 09/01/20

ELEVATIONS

Project Name:

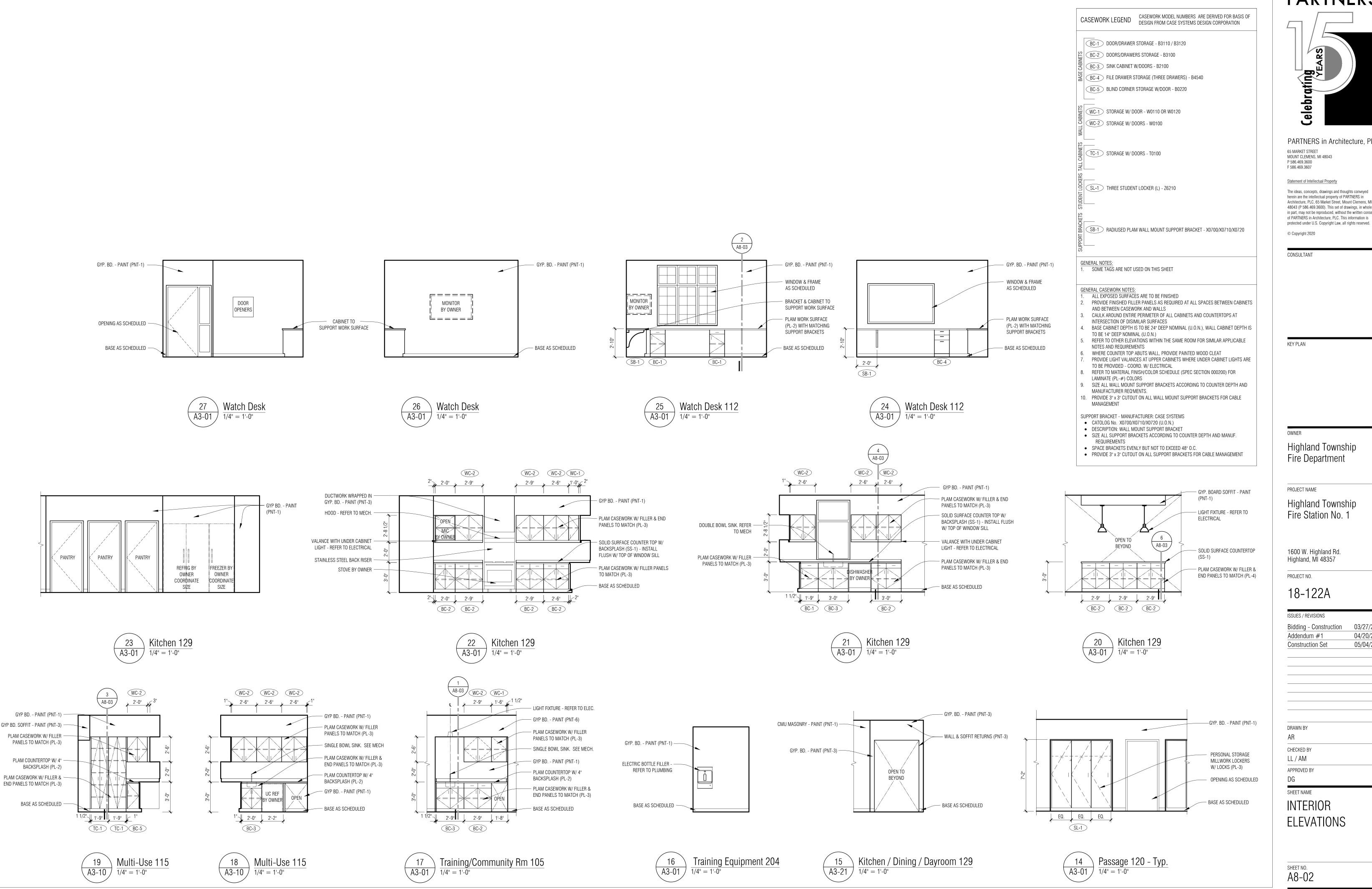
CCD No: Five (5) Highland Township - Highland Township Fire Station No. 1

A. 1x4" wood trim on detail 5 to be switched from PNT-1 to PNT-7.

18-122A 1600 W. Highland Rd. Highland, MI 48357 Project Number: Project Location:

Issue Date: Sept. 30, 2020

ITEM A14 A8-01 INTERIOR ELEVATIONS (NOT ISSUED)



PARTNERS in Architecture, PLC

herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

Highland Township

04/20/20 05/04/20

Project Name:

Highland Township – Highland Township Fire Station No. 1 CCD No: Five (5)

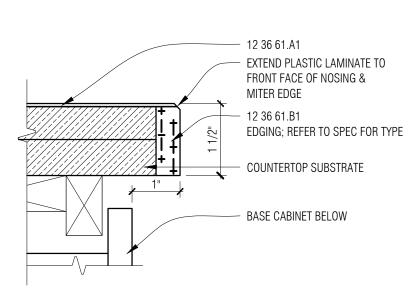
Project Number:

Issue Date: Sept. 30, 2020

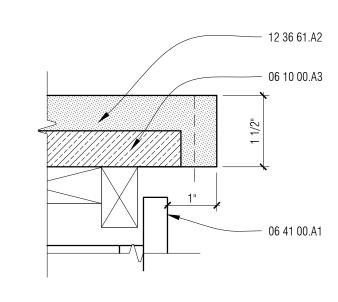
18-122A 1600 W. Highland Rd. Highland, MI 48357 Project Location:

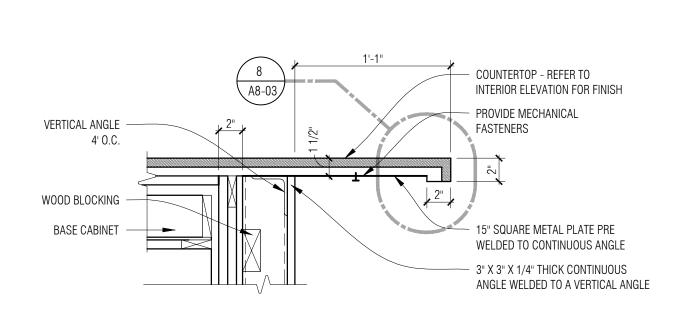
A8-02 INTERIOR ELEVATIONS (NOT ISSUED)

A. Revise detail 14 based on new floor plan dimensions and ceiling heights.B. Remove mechanical louver from detail 28 and connect gyp. bd. accent band.

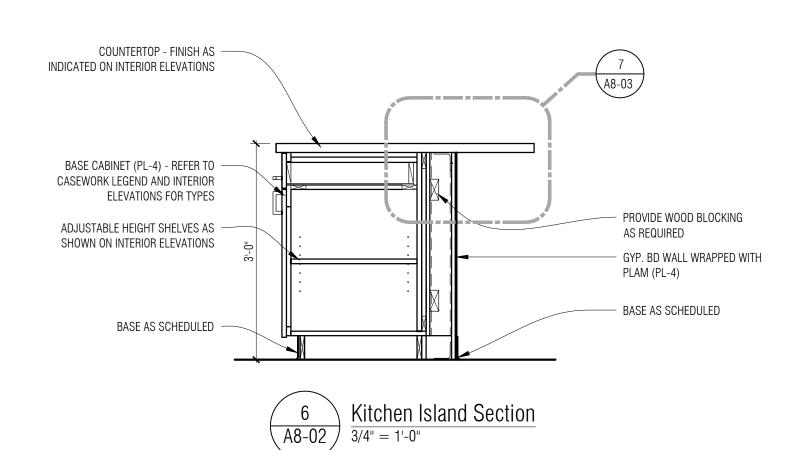


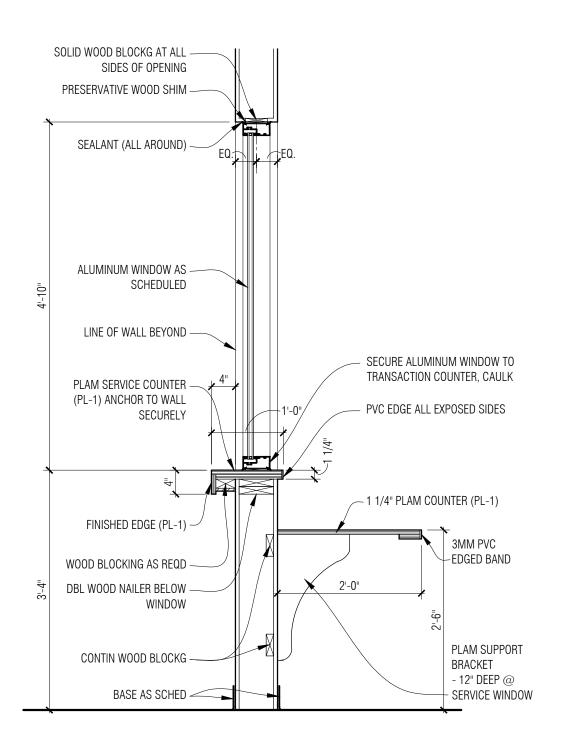


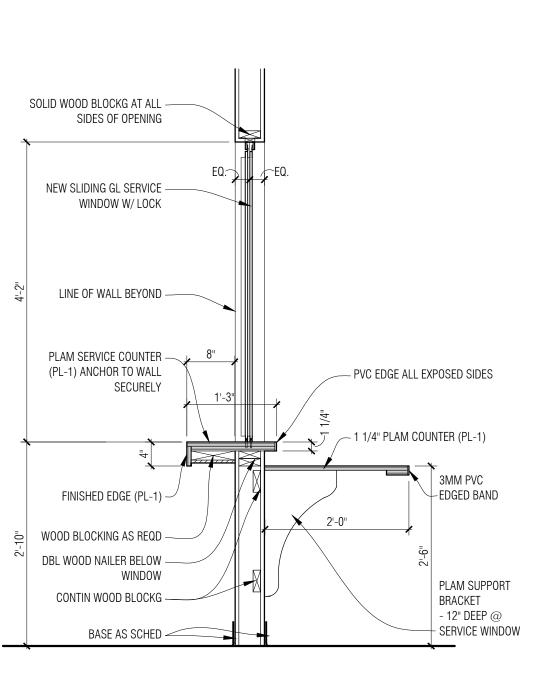




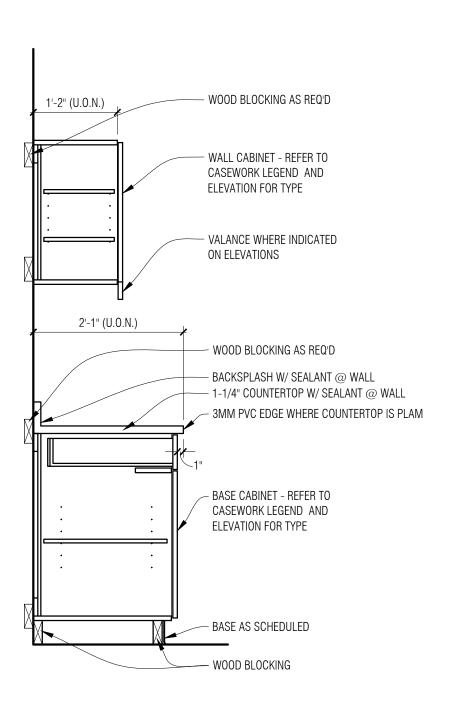




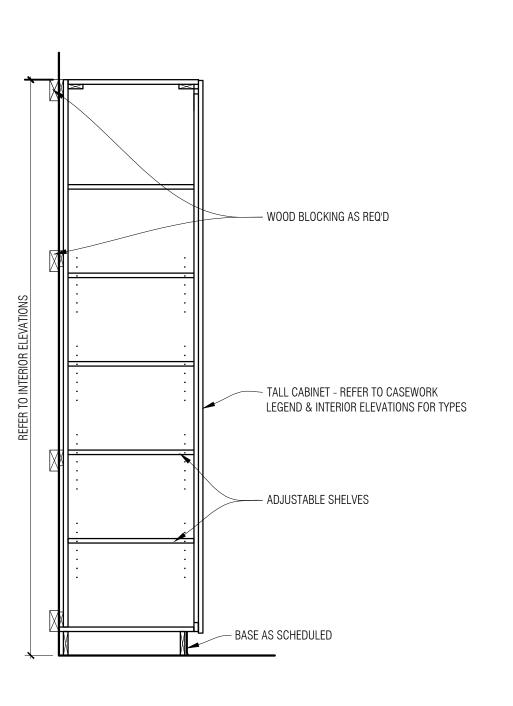




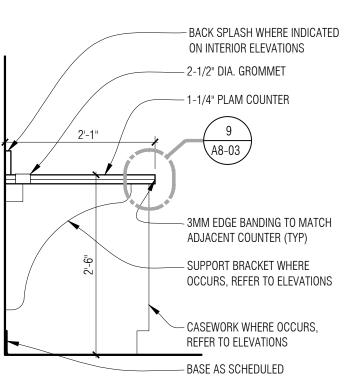
 $\underbrace{\frac{5}{A8-01}} \text{ Admin Desk Section @ Lobby}$



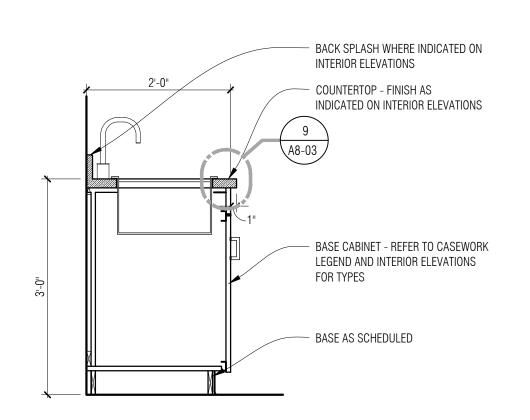
 $\frac{4}{A8-02} \frac{\text{Typical Casework Section}}{3/4" = 1'-0"}$



 $\begin{array}{c}
\hline
3 \\
A8-02
\end{array}
 \begin{array}{c}
\hline
1 & \text{Typical Tall Cabinet Detail} \\
\hline
3/4" = 1'-0"
\end{array}$







 $\frac{1}{A8-02} \frac{\text{Typical Section } @ \text{Sink}}{3/4" = 1'-0"}$

PARTNERS



PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2020

CONSULTANT

I/E// DL ANI

OWN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

Bidding - Construction 03/27/20
Construction Set 05/04/20

DANANI DV

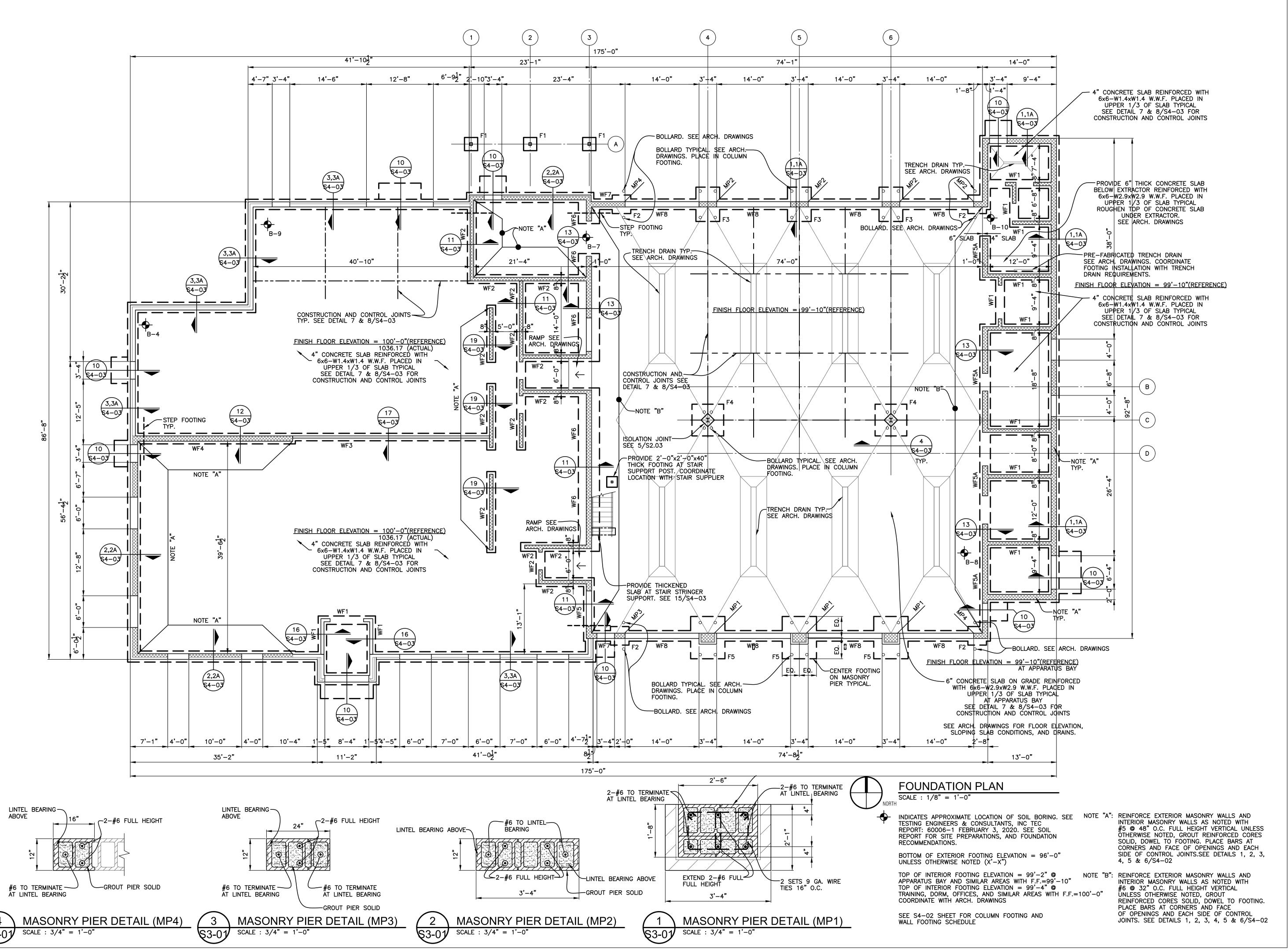
DRAWN BY AR

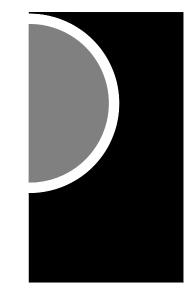
CHECKED BY

APPROVED BY

SHEET NAME

MILLWORK DETAILS





PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

Shymanski & Associates, L.L.C. STRUCTURAL ENGINEERS

33426 Five Mile Rd
Livonia, Michigan 48154
ph. 734.855.4810 fx. 734.855.4809
email@sastructuralengineers.com

KEY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| SSUES / REVISIONS | |
|----------------------|--|
| Bidding/Construction | |

 Addendum #1
 04/20/2020

 Construction Set
 05/04/2020

03/27/2020

DRAWN BY

CHECKED BY

)

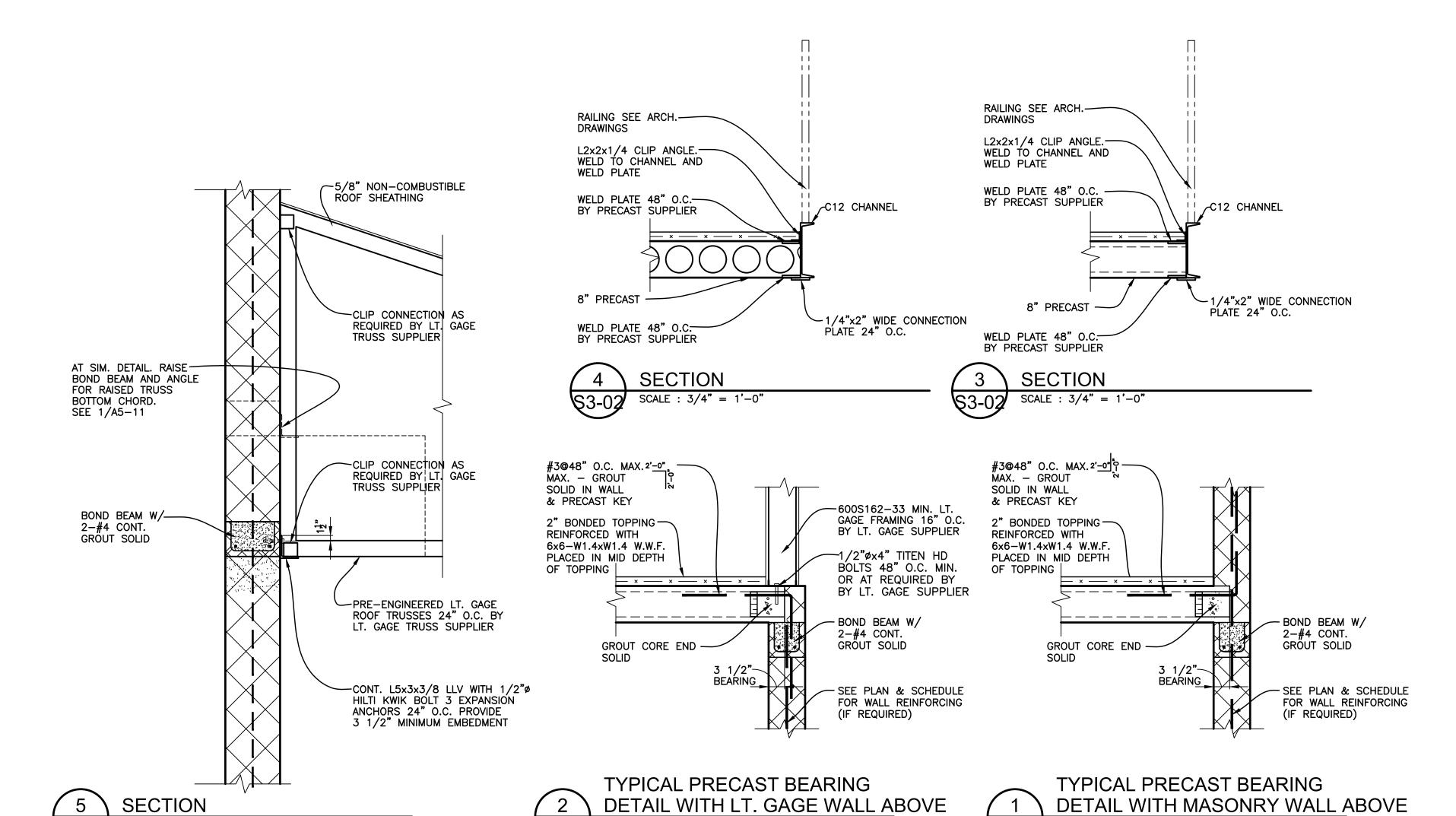
APPROVED BY

SHEET NAME

FOUNDATION PLAN

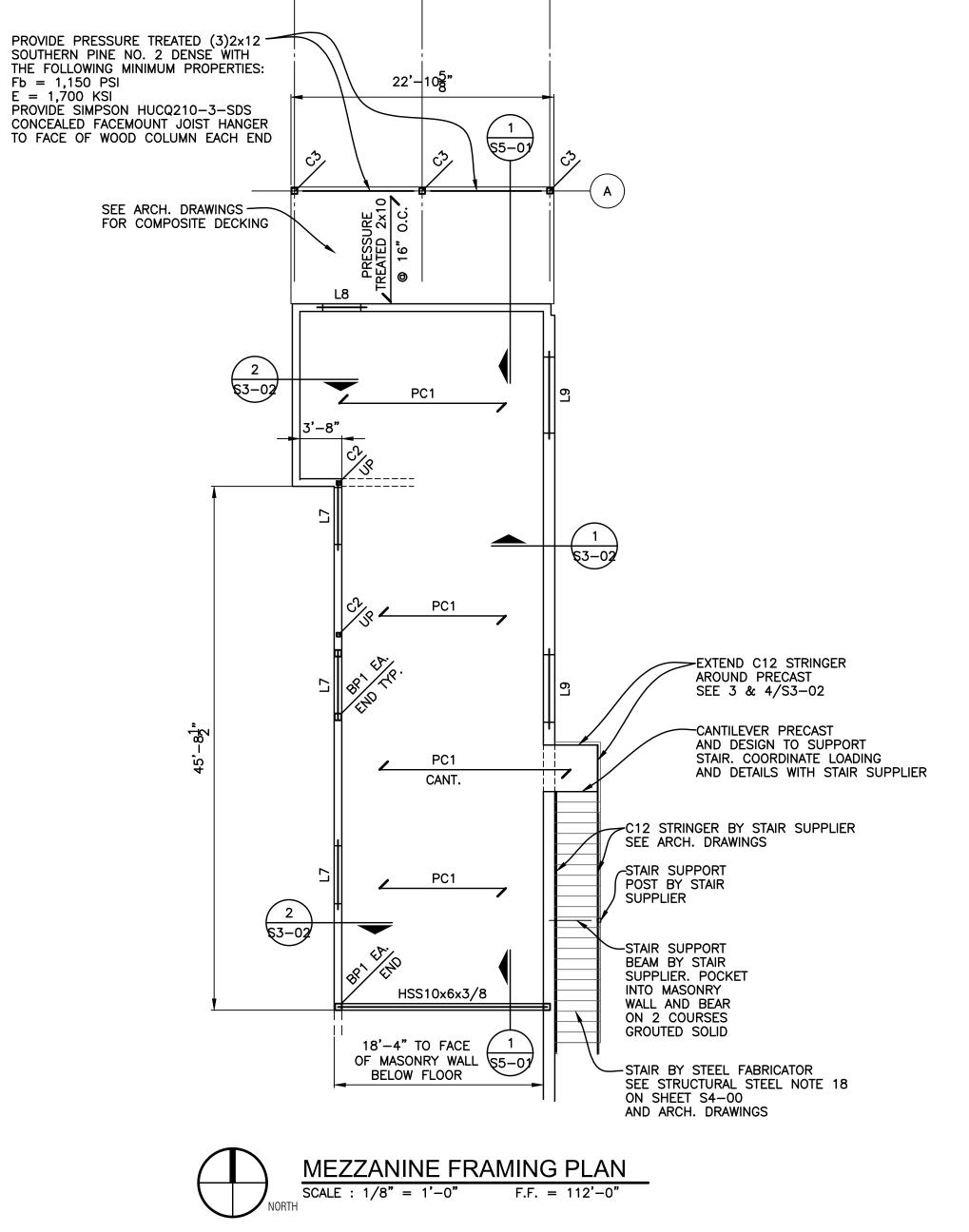
SHEET NO. S3-01

| PRECAST PLANK SCHEDULE NOTE: SEE ARCHITECTUAL DRAWINGS FOR ADDITIONAL SUPERIMPOSED DEAD LOADS | | | | |
|--|--------------------|-----------|-----------------------------------|---------|
| MARK | SIZE | LIVE LOAD | MINIMUM SUPERIMPOSED DEAD LOAD | REMARKS |
| PC1 | 8" HOLLOWCORE UNIT | 125 PSF | | |
| | | | | |



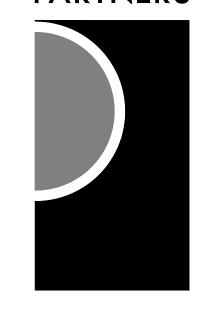
SCALE : 3/4" = 1'-0"

SCALE : 3/4" = 1'-0"



SEE SHEET S3-03 FOR COLUMN SCHEDULE
SEE SHEET S4-02 FOR LINTEL SCHEDULE

PARTNERS



PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

Shymanski & Associates, L.L.C.

STRUCTURAL ENGINEERS
33426 Five Mile Rd
Livonia, Michigan 48154
ph. 734.855.4810 fx. 734.855.4809
email@sastructuralengineers.com

KEY PLAN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

Bidding/Construction 03/27/2020
Addendum #1 04/20/2020
Construction Set 05/04/2020

DRAWN BY

CHECKED BY

APPROVED BY

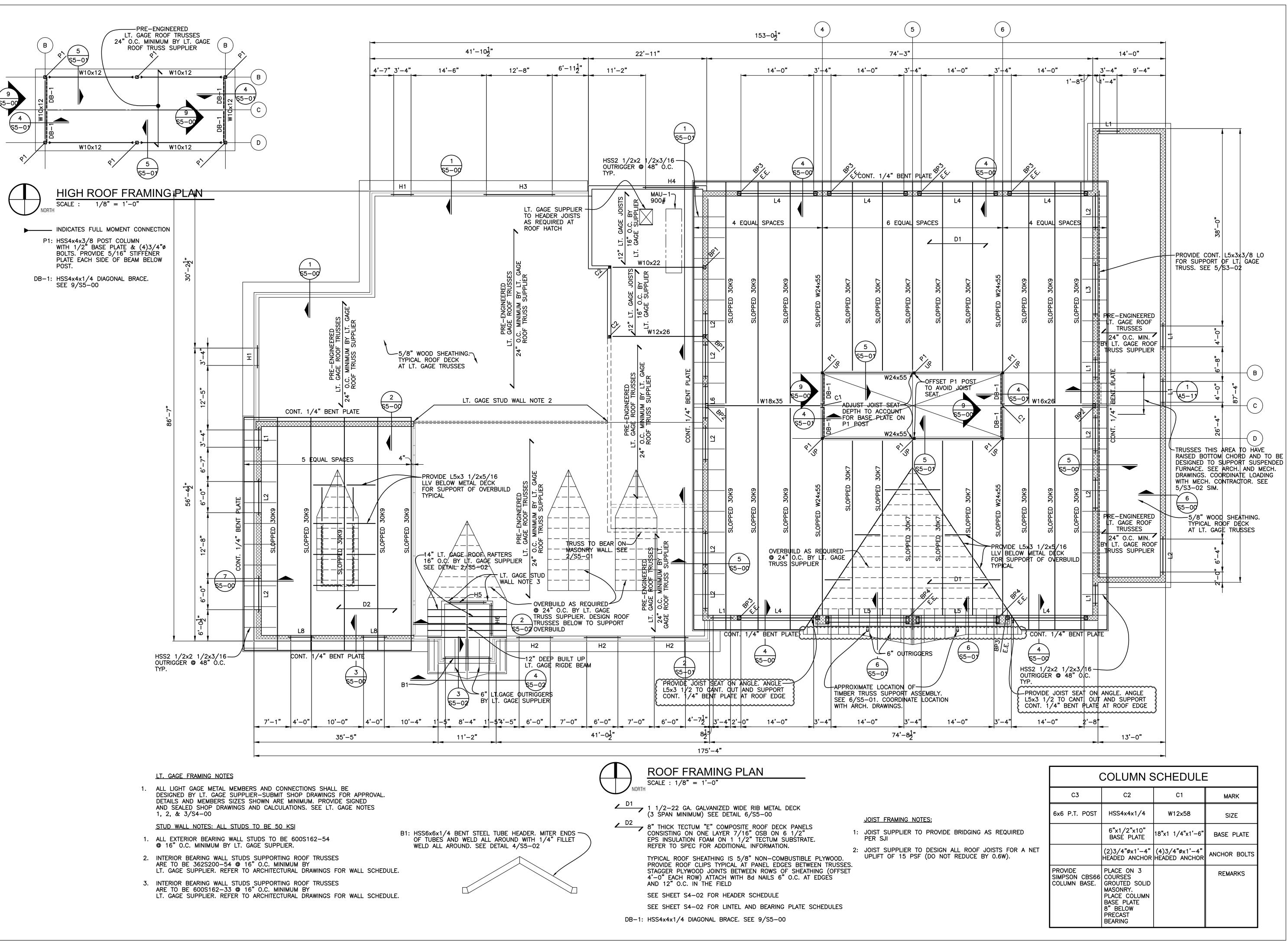
TS

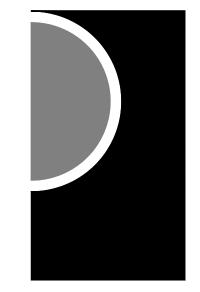
SHEET NAME

MEZZANINE

FRAMING PLAN

SHEET NO. S3-02





PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

P 586.469.3600

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture. PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

Associates, L.L.C. STRUCTURAL ENGINEERS

33426 Five Mile Rd Livonia, Michigan 48154 ph. 734.855.4810 fx. 734.855.4809 email@sastructuralengineers.com

KFY PI AN

Highland Township
Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| 03/27/2020 |
|------------|
| 04/20/2020 |
| 04/30/2020 |
| 05/04/2020 |
| |

DRAWN BY

CS

CHECKED BY

APPROVED BY

SHEET NAME

ROOF FRAMING PLAN

SHEET NO. S3-03

- 1. IF ANY GENERAL NOTE CONFLICTS WITH ANY DETAIL OR NOTE ON THE PLANS OR IN THE SPECIFICATIONS, THE STRICTEST PROVISION SHALL GOVERN.
- 2. THE STRUCTURAL DRAWINGS ARE FOR THE PLACEMENT AND SIZE OF STRUCTURAL COMPONENTS ONLY. O.S.H.A., LOCAL GOVERNMENT CODES AND SAFETY CODE REQUIREMENTS SHALL BE ADHERED TO BY THE CONTRACTOR.
- 3. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER IT IS FULLY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES PROVIDING TEMPORARY BRACING, SHORING, GUYS OR TIE-DOWNS. THESE TEMPORARY SUPPORTS WILL REMAIN IN PLACE UNTIL ALL STRUCTURAL COMPONENTS ARE IN PLACE AND COMPLETED.
- 4. USE OF ENGINEERING DRAWINGS AS ERECTION DRAWINGS BY THE CONTRACTOR IS STRICTLY PROHIBITED. DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY AND SHOULD NOT BE USED FOR BUILDING LAYOUT AND LOCATION. SEE ARCHITECTURAL DRAWINGS AND SITE PLAN FOR THESE PURPOSES.
- 5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AT THE RATE OF NO MORE THAN 80 DRAWINGS PER WEEK. THE CONTRACTOR SHALL SUBMIT A SCHEDULE OF SHOP DRAWINGS PRIOR TO SUBMITTAL. THE CONTRACTOR SHALL CHECK SHOP DRAWINGS PRIOR TO SUBMITTAL AND IS SOLELY RESPONSIBLE FOR ERRORS & OMISSION IN THE PREPARATION OF SHOP DRAWINGS TO CONFORM TO THE DESIGN DRAWINGS. SUBMIT NO MORE THAN ONE REPRODUCIBLE AND TWO PRINTS OF SHOP DRAWINGS FOR ENGINEER REVIEW. TWO COPIES WILL BE RETURNED TO THE ARCHITECT.
- 6. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL RELEVANT DIMENSIONS AND ELEVATIONS FOR EQUIPMENT INSTALLATIONS AGAINST PURCHASED MANUFACTURER'S CERTIFIED EQUIPMENT DRAWINGS. DIMENSIONS THAT DEPEND UPON SPECIFIC EQUIPMENT SUCH AS ELEVATOR OPENINGS, MECHANICAL EQUIPMENT SUPPORTS, ETC. SHALL BE COORDINATED BY THE CONTRACTOR PRIOR TO SUBMITTAL TO THE ARCHITECT/ENGINEER. SUCH DIMENSIONS SHALL BE PROVIDED ON THE SHOP DRAWINGS BY THE CONTRACTOR PRIOR TO SUBMITTAL TO THE ARCHITECT/ENGINEER.
- 7. PRE-MANUFACTURED ITEMS SUCH AS CANOPIES, AWNINGS, SUNSHADES, ETC. SHALL BE DESIGNED BY SUPPLIER. SUPPLIER SHALL SUBMIT SIGNED AND SEALED SHOP DRAWINGS AND CALCULATIONS BY A REGISTERED ENGINEER IN THE STATE OF MICHIGAN FOR RECORD TO ARCHITECT. SHOP DRAWINGS SHALL INDICATE ALL DESIGN LOADS AND INCLUDE ALL CONNECTIONS AND MATERIAL NECESSARY FOR INSTALLATION OF PRE-MANUFACTURED ITEMS.

FOUNDATIO

- 1. FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED SOIL WITH A SAFE BEARING CAPACITY OF 2000 P.S.F. IF SOIL OF THIS CAPACITY IS NOT FOUND AT THE ELEVATIONS INDICATED, FOOTINGS SHALL BE ENLARGED OR LOWERED AT THE DIRECTION OF THE ARCHITECT. VERIFY FOUNDATION SOIL BEARING PRESSURE IN FIELD BY SOILS ENGINEER.
- 2. PROVIDE NECESSARY SHEETING SHORING BRACING, ETC. AS REQUIRED DURING EXCAVATIONS TO PROTECT SIDES OF EXCAVATIONS.
- 3. COMPLY FULLY WITH REQUIREMENTS OF OSHA AND OTHER REGULATORY AGENCIES FOR SAFETY PROVISIONS.

CONCRETE

- 1. MINIMUM CONCRETE STRENGTH TO BE 3000 P.S.I. @ 28 DAYS, U.O.N.; SLABS SHALL BE 3500 P.S.I. MIN. U.O.N. EXPOSED CONCRETE SHALL BE 4000 PSI WITH 6% + 1% ENTRAINED AIR U.O.N.
 - A. PROVIDE 3000 P.S.I. 28-DAY COMPRESSIVE STRENGTH; W/C RATIO, 0.58 MAXIMUM (NON-AIR-ENTRAINED), 5.0 BAG CEMENT MIX FOR ALL FOUNDATION WORK UNLESS NOTED OTHERWISE.
 - B. PROVIDE 3500 P.S.I. 28-DAY COMPRESSIVE STRENGTH; W/C RATIO, 0.53 MAXIMUM (NON-AIR-ENTRAINED), 5.5 BAG CEMENT MIX FOR ALL INTERIOR SLABS UNLESS NOTED OTHERWISE.
 - C. PROVIDE 4000 P.S.I. 28-DAY COMPRESSIVE STRENGTH; W/C RATIO, 0.45 MAXIMUM (AIR-ENTRAINED), 6.0 BAG CEMENT MIX FOR ALL EXTERIOR CONCRETE UNLESS NOTED OTHERWISE.
- 2. FLYASH OR GROUND GRANULATED BLAST FURNACE SLAG MAY BE SUBSTITUTED UP TO 25% MAXIMUM OF MIX DESIGN CEMENT CONTENT IN NON-EXPOSED CONCRETE MIXES. DO NOT USE IN EXPOSED MIX DESIGNS.
- 3. ALL CONCRETE WORK AND PLACEMENT SHALL CONFORM TO THE LATEST RECOMMENDATIONS OF A.C.I.
- 4. ALL REINFORCING BARS, DOWELS AND TIES SHALL CONFORM TO A.S.T.M. A615 GRADE 60. REINFORCING STEEL SHALL BE CONTINUOUS AND SHALL HAVE MINIMUM 36 BAR DIAMETER LAP AND BE FABRICATED AND PLACED IN ACCORDANCE WITH A.C.I. 315 LATEST EDITION.
- 5. REINFORCED CONCRETE WALL FOOTINGS SHALL HAVE CORNER BARS AT ALL INTERSECTIONS OF THE SAME SIZE AND SPACING AS THE MAIN HORIZONTAL REINFORCING.
- 6. ALL SLABS ON GROUND SHALL BE 4" THICK AND HAVE 6" X 6" W1.4 X W1.4 WELDED WIRE FABRIC IN THE TOP 1/3 OF THE SLAB, UNLESS OTHERWISE NOTED.
- 7. CONCRETE CONTRACTOR SHALL INCLUDE IN HIS COST ADDITIONAL CONCRETE QUANTITY AS REQUIRED TO COMPENSATE FOR DEFLECTIONS OF METAL DECK AND UNSHORED COMPOSITE BEAMS AND TO PROVIDE A LEVEL CONCRETE SURFACE.
- 8. BONDED TOPPING SLABS ON PRECAST CONCRETE SHALL MEET ALL THE REQUIREMENTS OF ACI 302.1R, SECTION 8.10.
- 9. FIELD AND SHOP TESTING OF CONCRETE WORK SHALL INCLUDE INSPECTION OF REINFORCING STEEL PLACEMENT, REBARS, NUMBER, LOCATION, AND LAP SPLICE
- 10. PROVIDE DOWELS INTO FOUNDATION TO MATCH SIZE AND SPACING OF VERTICAL REINFORCEMENT AT ALL COLUMNS AND WALLS, UNLESS OTHERWISE NOTED.
- 11. UNLESS OTHERWISE SHOWN, PROVIDE THE FOLLOWING COVER FOR

| Α. | UNFORMED SURFACES IN CONTACT WITH EARTH | -3 | IN. |
|----|---|--------|-----|
| В. | UNFORMED SURFACES OVER MOISTURE BARRIERS | -2 | IN. |
| С. | FORMED SURFACES EXPOSED TO EARTH OR WEATHER | | |
| | OR WATER PROOFING/DAMP PROOFING | | |
| | #6 OR LARGER | -2 | IN. |
| | #5 OR SMALLER | -1 1/2 | IN. |
| D. | FORMED SURFACES NOT EXPOSED TO EARTH | | |
| | OR WEATHER | | |
| | SLABS AND WALLS | -3/4 | IN. |
| | COLUMNS | -1 1/2 | IN. |
| | BEAMS AND GIRDERS | -1 1/2 | IN. |

MASONRY

- 1. THE MASONRY PORTIONS OF THIS STRUCTURE ARE DESIGNED ACCORDING TO THE LATEST ALLOWABLE STRESS DESIGN PROVISIONS OF THE MASONRY STANDARDS JOINT COMMITTEE (MSJC) BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530/ASCE 602) INCLUDING SECTIONS 2106 AND 2107 OF CHAPTER 21 IN THE MICHIGAN BUILDING CODE. MASONRY COMPONENTS HAVE BEEN DESIGNED ACCORDING TO THE PROVISIONS FOR SEISMIC DESIGN CATEGORY B.
- 2. ALL STRUCTURAL MASONRY IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST MASONRY STANDARDS JOINT COMMITTEE (MSJC) BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (TMS 402/ACI 530/ASCE 5) AND SPECIFICATIONS FOR MASONRY STRUCTURES (TMS 602/ACI 530.1/ASCE 6) MASONRY SUBMITTALS ARE REQUIRED BY ACI 530.1/ASCE 6/TMS 602. SECTION 1.5 MASONRY TESTING AND INSPECTIONS ARE REQUIRED BY ACI 530.1/ASCE 6/TMS 602 SECTION 1.6, TABLE 5.
- 3. ALL STRUCTURAL MASONRY HAS BEEN ENGINEERED IN ACCORDANCE WITH CHAPTER 2 ALLOWABLE STRENGTH DESIGN. COMPRESSION STRENGTH SHALL BE DETERMINED ACCORDING TO THE UNIT STRENGTH METHOD FOR CONCRETE MASONRY MSJC SECTION 1.4. B.2.b.
- 4. ALL BLOCK SHALL CONFORM TO ASTM C90, TYPE I, WITH A MINIMUM UNIT NET AREA COMPRESSIVE STRENGTH OF 2800 PSI.
- 5. MASONRY COMPRESSIVE STRENGTH f'm = 2000 PSI MINIMUM.
- 6. MORTAR SHALL BE TYPE "S" (1800 PSI) CONFORMING TO ASTM C-270. USE MORTAR CEMENT WHERE EXTERIOR WALLS ARE UNREINFORCED.
- 7. PROVIDE HORIZONTAL WIRE TYPE REINFORCING WITH 9 GAUGE SIDE AND CROSS MEMBERS IN EVERY SECOND COURSE (16" O.C.), IN ALL MASONRY WALLS. WALLS WITH VERTICAL REINFORCING SHALL ONLY HAVE "LADDER" TYPE REINFORCING.
- 8. ALL REINFORCING BARS, DOWELS AND TIES SHALL CONFORM TO A.S.T.M. A615 GRADE 60. REINFORCING STEEL SHALL BE CONTINUOUS, FABRICATED AND PLACED IN ACCORDANCE WITH A.C.I. 315 LATEST EDITION AND HAVE THE FOLLOWING MINIMUM LAP LENGTHS:

| BAR SIZE | 8" CMU | 12" CI |
|----------|--------|--------|
| #3 | 18" | 18" |
| #4 | 24" | 24" |
| #5 | 30" | 30" |
| #6 | 38" | 36" |
| #7 | | 42" |
| #8 | | 50" |

- 9. ALL MASONRY BEARING STEEL BEAMS AND LINTELS TO BEAR 8" MINIMUM ON 3 COURSES SOLID MASONRY, WITH 2-3/4" DIAMETER BOLTS EACH END, UNLESS OTHERWISE NOTED.
- 10. UNLESS OTHERWISE NOTED WHERE STEEL JOISTS BEAR ON MASONRY, PROVIDE A MINIMUM OF ONE COURSE OF SOLID BLOCK BELOW K-SERIES JOISTS AND A MINIMUM OF TWO COURSES SOLID BELOW LH SERIES JOISTS.
- 11. ALL MASONRY BELOW GRADE SHALL BE GROUTED SOLID.
- 12. MASONRY GROUT SHALL CONFORM TO ASTM C 476, WITH PEA GRAVEL AGGREGATE AND A MINIMUM STRENGTH OF 2000 PSI, BUT NOT LESS THAN SPECIFIED f'm.
- 13. UNLESS OTHERWISE NOTED, AT ALL MASONRY WALLS PROVIDE THE FOLLOWING LINTELS:

8" WALLS

(2) L4x3 1/2 x 5/16 LLV FOR OPENINGS UP TO 4'-0"
(2) L5x3 1/2 x 5/16 LLV FOR OPENINGS UP TO 5'-4"
W8x18 + 3/8" PLATE FOR OPENINGS UP TO 8'-0"
W8x28 + 3/8" PLATE FOR OPENINGS UP TO 12'-4"

12" WALLS:

- (3) L4x3- 1/2 x 5/16 LLV FOR OPENINGS UP TO 4'-0"
 (3) L5x3-1/2 x 5/16 LLV FOR OPENINGS UP TO 5'-4"
 W8x18 + 3/8" PLATE FOR OPENINGS UP TO 8'-0"
 W8x28 + 3/8" PLATE FOR OPENINGS UP TO 12'-4"
- 14. ALL DOUBLE ANGLE LINTELS SHALL BE WELDED BACK TO BACK WITH A MINIMUM 2 INCH STITCH WELD EVERY 8 INCHES.
- 15. UNLESS OTHERWISE NOTED, PROVIDE L5 X 3-1/2 X 5/16 L.L.V. LINTEL FOR EACH 4" OF MASONRY FOR SPANS UP TO 5'-0" MAX.
- 16. PROVIDE DOWELS INTO FOUNDATION TO MATCH SIZE AND SPACING OF VERTICAL REINFORCEMENT AT ALL COLUMNS AND WALLS, UNLESS OTHERWISE NOTED.

STRUCTURAL STEEL

- 1. STEEL DESIGN, FABRICATION AND ERECTION TO BE IN ACCORDANCE WITH THE LATEST A.I.S.C. MANUAL AND SPECIFICATION FOR STRUCTURAL STEEL FOR BUILDINGS. ALL WIDE FLANGE BEAMS AND COLUMNS SHALL CONFORM TO THE LATEST ASTM. SERIAL DESIGNATION A992, GR50; ALL MISCELLANEOUS STEEL PLATES, BARS, ANGLES, ETC., SHALL CONFORM TO ASTM A36; STEEL TUBING TO BE ASTM A500, GRADE B; STEEL PIPE ASTM. A-53, GRADE B. ANCHOR BOLTS TO BE ASTM F1554 GRADE 36 KSI MINIMUM UNLESS OTHERWISE NOTED
- 2. UNLESS OTHERWISE NOTED OR SHOWN, ALL BEAM CONNECTIONS TO HSS 5 X 5 OR SMALLER COLUMN,5"Ø OR SMALLER COLUMN, OR ANY TUBE COLUMN REGARDLESS OF SIZE WITH A WALL THICKNESS LESS THAN 3/8" SHALL BE MADE WITH THRU PLATES WELDED TO BOTH WALLS OF COLUMN.
- 3. ALL WELDED CONNECTIONS SHALL BE IN ACCORDANCE WITH THE LATEST AWS CODE, E70XX ELECTRODES, WITH WELDING PERFORMED BY QUALIFIED WELDERS.
- 4. BOLTED CONNECTIONS SHALL BE MADE WITH A-325 OR A-490 BOLTS. ALL BOLTS ARE TO BE INSTALLED IN ACCORDANCE WITH THE LATEST SPECIFICATIONS FOR "STRUCTURAL JOINTS USING A.S.T.M. A-325 OR A-490 BOLTS." TYPICAL BOLTED CONNECTIONS ARE "BEARING TYPE" UNLESS NOTED OTHERWISE.
- 5. DESIGN CONNECTIONS FOR MINIMUM ONE-HALF THE TOTAL ALLOWABLE UNIFORM LOAD PER A.I.S.C. BEAM LOAD TABLES, UNLESS OTHERWISE NOTED. (MIN. 2 BOLTS EACH CONNECTION).
- 6. THE STRUCTURAL STEEL CONTRACTOR SHALL INCLUDE (2) TONS OF ADDITIONAL STEEL, INCLUDING FABRICATION AND ERECTION, TO BE USED AT THE DISCRETION OF THE STRUCTURAL ENGINEER. TONNAGE COST IS TO BE BASE ON TONNAGE PRICE PER JOB. ADDITIONAL STEEL NOT USED IS TO BE CREDITED BACK TO THE OWNER. GENERAL CONTRACTOR IS TO COORDINATE WITH STEEL FABRICATOR AND OWNER.
- 7. THE DESIGN, CONFIGURATION & ERECTION SAFETY OF ALL STRUCTURAL STEEL CONNECTIONS SHALL BE THE RESPONSIBILITY OF THE STRUCTURAL STEEL FABRICATOR. REVIEW AND ACCEPTANCE OF THE SHOP DRAWINGS BY THE ENGINEER SHALL CONSTITUTE APPROVAL OF THE LOAD CARRYING ADEQUACY
- 8. TYPE OF CONSTRUCTION PER ASCE A2.2 IS TYPE 2 "SIMPLE FRAMING" UNLESS NOTED OTHERWISE.

STRUCTURAL STEEL (CONT.)

- 9. TEMPORARY ERECTION SEATS SHALL BE PROVIDED AS RECOMMENDED ON PAGE 3-59 OF THE A.I.S.C. PUBLICATION "ENGINEERING FOR STEEL CONSTRUCTION".
- 10. STEEL JOISTS AND JOIST GIRDERS ARE TO BE FABRICATED BY A MEMBER OF THE STEEL JOIST INSTITUTE AND BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST SPECIFICATIONS OF THE S.J.I.
- 11. ALL PROVISIONS OF THE RECOMMENDED CODE OF STANDARD PRACTICE FOR STEEL JOISTS AS ADOPTED BY THE STEEL JOIST INSTITUTE SHALL BE ADHERED TO.
- 12. STEEL JOIST BEARING ON STEEL BEAMS OR PLATES, TO BE WELDED TO STEEL WITH 2" LONG BEAD EACH SIDE OF BEARING.
- 13. STAGGER JOISTS AS REQUIRED TO ACHIEVE NECESSARY BEARING ON WALLS OR GIRDERS.
- 14. METAL DECK SHALL CONFORM TO ALL REQUIREMENTS OF "BASIC DESIGN SPECIFICATION" AS ADOPTED BY THE STEEL DECK INSTITUTE (S.D.I.).

 METAL ROOF DECK SHALL BE WIDE RIB WITH NESTING SIDE SEAMS OF DEPTH AND GAGE INDICATED ON THE DRAWINGS. DECK SHALL BE WELDED TO ALL SUPPORTING STEEL WITH PUDDLE WELDS (5/8" DIAMETER MINIMUM), AT 12" ON CENTER MAXIMUM SPACING AND 6" O/C (ALL FLUTES) AT END LAP SUPPORT POINTS AND BUILDING PERIMETER ATTACHMENTS. SIDE LAP CONNECTIONS SHALL BE MADE AT MAXIMUM 3'-O" ON CENTER.(AT MIDPOINT OF SPAN FOR SPAN LESS THAN 6'-O" AT THIRD POINTS OF SPAN FOR SPANS GREATER THAN 6'-O") WITH #10 TEK SCREW MIN. REFER TO SPECIFICATIONS FOR ADDITIONAL ERECTION PROCEDURES.
- 15. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL ANGLES, PLATES, BARS, CLIPS, ETC., ATTACHED TO STRUCTURAL STEEL.
- 16. UNLESS OTHERWISE NOTED, ALL FLOOR AND ROOF OPENINGS SHALL BE FRAMED WITH L 5 X 3-1/2 X 5/16 L.L.V. VERIFY EXACT SIZE AND LOCATION OF ALL FLOOR AND ROOF OPENINGS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND WITH CONTRACTOR INVOLVED.
- 17. THE ERECTION OF THE STEEL FRAME SHALL COMPLY WITH THE REQUIREMENTS CONTAINED IN AISC 303-10 AND IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE STEEL FRAME IS NOT SELF-SUPPORTING AND STABILITY OF THE COMPLETED STRUCTURE IS PROVIDED BY A COMBINATION OF MASONRY SHEAR WALLS. METAL DECK AT THE ROOF LEVEL SERVES AS HORIZONTAL DIAPHRAGM THAT DISTRIBUTE THE LATERAL WIND AND SEISMIC FORCES HORIZONTALLY TO THE VERTICAL LATERAL LOAD RESISTING ELEMENTS. THE MASONRY SHEAR WALLS CARRY THE APPLIED LATERAL LOADS TO THE BUILDING FOUNDATION.
- 18. THE DESIGN OF THE STEEL FRAMED STAIRS AND RAILINGS SHALL BE THE RESPONSIBILITY OF THE STEEL FABRICATOR. PROVIDE COMPLETE ENGINEERED STAIR ASSEMBLIES, CONFORMING TO THE ARCHITECTURAL INTENT (SHOP DRAWINGS), UNDER THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF MICHIGAN INCLUDING METAL FRAMING, HANGERS, MASONRY BEARING PLATES, COLUMNS, RAILING ASSEMBLIES, AND OTHER COMPONENTS NECESSARY TO SUPPORT THE STAIRS AND LANDINGS INCLUDING ANCHORAGE TO THE SUPPORTING STRUCTURE.
- 19. THE CONTRACTOR SHALL FURNISH ALL ACCESSORIES INCLUDING CLOSURES, "Z" CLOSURES, COLUMN CLOSURES, SCREED ANGLES AND GIRDER FILLERS AS REQUIRED.
- 20. NO LOADS SHALL BE PERMITTED TO BE HUNG FROM ANY ROOF DECK. ALL HANGERS FOR CEILINGS, DUCTWORK, ELECTRICAL CONDUIT, PIPING, ETC., SHALL BE HUNG DIRECTLY FROM STRUCTURAL STEEL WORK OR SUPPLEMENTARY
- 21. MASONRY AND BRICK LINTELS SHALL BE GALVANIZED G90 PER ASTM A123.
- 22. PROVIDE L4X4X1/4 SEATS AT COLUMN WEBS WHERE REQUIRED FOR SUPPORT OF ROOF AND FLOOR DECKS. PROVIDE ANGLE OUTRIGGER FROM EXTERIOR COLUMNS FOR SLAB AND ROOF EDGE PLATE SUPPORT.
- 23. ALL BOLTED MOMENT CONNECTIONS REQUIRE SLIP CRITICAL BOLTS.
- 24. ALL WIDE FLANGE LINTELS TO HAVE MINIMUM 7"x3/8"x0'-7" BEARING PLATE, ALL WIDE FLANGE FLOOR OR ROOF BEAMS TO HAVE MINIMUM 7"x3/8"x0'-7" BEARING PLATE UNLESS OTHERWISE NOTED

LIGHT GAGE FRAMING

- 1. LIGHT GAGE FRAMING SUPPLIER SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MICHIGAN INDICATING ALL DESIGN LOADS AND MATERIALS INCLUDING VERIFYING ANY MEMBER SIZES SHOWN. DESIGN BY SUPPLIERS ENGINEER SHALL INCLUDE ALL CONNECTIONS AND MISCELLANEOUS MATERIALS NECESSARY FOR A COMPLETE STRUCTURE. THE FINAL MEMBER SIZES AND GAGES SHALL BE CALCULATED BY THE LIGHT GAGE ENGINEER. LIGHT GAGE SHOP DRAWINGS NOT SIGNED AND SEALED WILL BE REJECTED.
- 2. LIGHT GAGE MEMBERS SHALL BE DESIGNED, MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE AMERICAN IRON AND STEEL INSTITUTE (AISI) INCLUDING ANY REQUIRED CLIPS, STIFFENERS, AND BRACING.
- 3. MEMBER SIZES INDICATED ON DRAWINGS ARE MINIMUM DEPTH AND GAGE REQUIRED TO MEET THE DESIGN INTENT AND ARE BASED ON THE PROPERTIES AND MATERIALS LISTED IN THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) PRODUCT CATALOG. ALTERNATE MANUFACTURERS ARE ACCEPTABLE IF THE PHYSICAL PROPERTIES ARE EQUAL OR BETTER THAN THOSE LISTED ACCEPTABLE TO THE PROJECT ARCHITECT AND ENGINEER, AND MEET OR EXCEED PERFORMANCE CRITERIA.
- 4. LIGHT GAGE DOCUMENTS SUBMITTED BY THE LIGHT GAGE FRAMING SUPPLIER IS A "DEFERRED SUBMITTAL" PER SECTION 107.3.4.1 OF THE MBC 2015
- 5. ALL LIGHT GAGE BACK UP STUDS FOR BRICK VENEER TO BE 16 GA. MINIMUM (54) AND BE DESIGNED FOR L/600 MINIMUM LATERAL DEFLECTION REQUIREMENT.

LIGHT GAGE TRUSSES

1. LIGHT GAGE TRUSSES: SHALL BE MANUFACTURED BY AN ACCEPTABLE TRUSS
MANUFACTURER, RECOGNIZED BY THE GOVERNING BUILDING CODE. TRUSS
MANUFACTURER SHALL SUPPLY ALL HANGERS, PLATES, BLOCKS, CLIPS, BRIDGING
AND OTHER ITEMS RELATIVE TO THEIR UNITS. DESIGN CRITERIA ARE AS FOLLOWS:

ROOF TRUSS

TC LL = 25 PSF DL = 10 PSF BC DL = 10 PSF LL = 10 PSF TL = 55 PSF

- 2. LIGHT GAGE TRUSS TOP CHORD MUST BE BRACED WITH ROOF SHEATHING OR CONTINUOUS LATERAL BRACING AT 3 -0" O.C. BOTTOM CHORD MUST BE BRACED WITH A RIGID CEILING OR CONTINUOUS BRACING AT 10'-0" O.C. PLYWOOD SHEATHING SHALL BE SCREWED TO TRUSS MEMBERS AT 6" O.C. MAXIMUM SPACING.
- 3. LIGHT GAGE GIRDER TRUSSES SHALL BE DESIGNED TO SUPPORT ALL LOADS FROM THEIR TRIBUTARY AREA.

LIGHT GAGE TRUSSES (CONT.)

- 4. LIGHT GAGE TRUSS MANUFACTURER SHALL PROVIDE SHOP DRAWINGS, WITH DESIGN LOADS, SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MICHIGAN. TRUSS MANUFACTURER SHALL VERIFY WITH ARCHITECT AND MECHANICAL CONTRACTOR SIZE, LOCATION & SUPPORT OF MECHANICAL UNITS. TRUSS FRAMING AND TRUSS TO TRUSS CONNECTIONS ARE TO BE DESIGNED BY TRUSS MANUFACTURER FOR ALL REQUIRED LOADS. SHOP DRAWINGS NOT SIGNED AND SEALED BY A REGISTERED ENGINEER IN THE STATE OF MICHIGAN WILL BE REJECTED. SEE MECHANICAL AND ARCHITECTURAL DRAWINGS FOR MECHANICAL LOADS AT ROOF AND FLOOR TRUSSES. TRUSS SUPPLIER TO DESIGN TRUSSES FOR SUPPORT OF ALL MECH. UNITS, PIPING, FIRE SUPPRESSION LINES, AND ALL UTILITIES. COORDINATE ADDITIONAL LOADING AND PIPE SUPPORT/UTILITY LOCATIONS WITH MECH. CONTRACTOR.
- 5. SEE MECHANICAL DRAWINGS FOR MECHANICAL LOADS AT ROOF AND FLOOR TRUSSES.
 TRUSS SUPPLIER TO DESIGN TRUSSES FOR SUPPORT OF ALL MECH. UNITS, PIPING,
 FIRE SUPPRESSION LINES, AND ALL UTILITIES. COORDINATE ADDITIONAL LOADING
 AND PIPE SUPPORT/UTILITY LOCATIONS WITH MECH. CONTRACTOR
- 6. ALL FABRICATION SHOPS SHALL BE APPROVED BY THE BUILDING DEPARTMENT AND ENGINEER PRIOR TO ANY WORK BEING PERFORMED. SUBMIT ALL CERTIFICATIONS AND DOCUMENTATION FOR THEIR REVIEW.
- 7. LIGHT GAGE TRUSS DOCUMENTS SUBMITTED BY THE LIGHT GAGE TRUSS TRUSS SUPPLIER IS A "DEFERRED SUBMITTAL" PER SECTION 107.3.4.1 OF THE MBC 2015

PRECAST CONCRETE

- 1. SHOP DRAWINGS AND CALCULATIONS FOR ALL PRECAST STRUCTURAL COMPONENTS SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MICHIGAN AND SHALL INDICATE ALL DESIGN LOADS. SHOP DRAWINGS NOT SIGNED AND SEALED WILL BE REJECTED.
- 2. THE PRECAST CONCRETE PRODUCT SUPPLIER SHALL BE A MEMBER OF THE PRESTRESSED CONCRETE INSTITUTE (PCI). THE DESIGN AND MANUFACTURE OF ALL PRECAST CONCRETE PRODUCTS SHALL CONFORM TO ALL PROVISIONS OF THE "PCI DESIGN HANDBOOK" AND TO THE LATEST ACI STANDARDS AND GUIDELINES.
- 3. ALL HOLES IN PRECAST PLANK ARE TO BE CORE DRILLED THROUGH THE VOID. DO NOT CUT STRANDS. THE PRECAST PLANK SUPPLIER SHALL BE NOTIFIED OF ALL HOLES TO BE CUT AND SHALL VERIFY THE ADEQUACY OF THE PRECAST COMPONENT FOR THE DESIGN LOADS. PROVIDE THE LOCATION OF ALL REQUIRED HOLES TO THE PRECAST CONCRETE SUPPLIER TO CONFIRM STRUCTURAL ADEQUACY.
- 4. PREPARE STRUCTURAL PRECAST CONCRETE FOR BONDED TOPPINGS PER ACI 302.1R, SECTION 8.10, WHERE BONDED TOPPINGS OCCUR PER THE CONTRACT DRAWINGS
- 5. PRECAST CONCRETE HOLLOW CORE SLABS (PLANK) SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318, THE DESIGN RECOMMENDATIONS OF PCI MNL 120 "PCI DESIGN HANDBOOK" 5TH EDITION, THE DESIGN RECOMMENDATIONS OF PCI "MANUAL FOR THE DESIGN OF HOLLOW CORE SLABS" AND IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.
- 6. PROVIDE CONNECTIONS COMPLYING WITH ACI 318, CHAPTER 16 AND PCI RECOMMENDATIONS.
- 7. PRECAST DOCUMENTS SUBMITTED BY THE PRECAST SUPPLIER
 IS A "DEFERRED SUBMITTAL" PER SECTION 107.3.4.1 OF THE MBC 2015

SPECIAL INSPECTION

- 1. WORK CONSTRUCTED SHALL BE INSPECTED BY AN INDEPENDENT TESTING AGENCY TO ENSURE COMPLIANCE WITH THE REQUIREMENTS SHOWN ON THE DRAWINGS. INSPECTIONS REQUIRED BY CHAPTER 17 OF THE MICHIGAN BUILDING CODE; LOCAL BUILDING DEPARTMENTS AND THE CONTRACT DOCUMENTS SHALL BE PERFORMED BY AN INDEPENDENT TESTING AGENCY. SITE VISITS BY THE DESIGN ENGINEER DO NOT CONSTITUTE OR REPLACE INSPECTION
- 2. THE FOLLOWING ITEMS SHALL BE INSPECTED IN ACCORDANCE WITH MBC 2015 SEC. 1704 & 1705 BY A CERTIFIED SPECIAL INSPECTOR UNLESS NOTED OTHERWISE IN REMARKS COLUMN. ALL INSPECTION SHALL BE CONTINUOUS UNLESS OTHERWISE NOTED. ALL PRODUCTS WITH ICC APPROVALS SHALL BE INSTALLED PER THE APPROVAL AND PER MANUFACTURER'S RECOMMENDATIONS. FOR MATERIAL TESTING REQUIREMENTS, SEE SPECIFICATIONS AND/OR GENERAL NOTES. TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE ARCHITECT.
 - INSPECTION OF FABRICATOR'S (SEC. 1704.2.5) *

4) OTHER REINFORCING STEEL

- FABRICATION AND IMPLEMENTATION PROCEDURES 1704.2.5.1
- *SPECIAL INSPECTION IS NOT REQUIRED FOR FABRICATOR SHOP IF CERTIFICATE OF APPROVAL SUBMITTED BY FABRICATOR'S INSPECTION AGENCY PER EXCEPTION 1704.2.5.1

TABLE 1705.2.2 REQUIRED VERIFICATION AND

| INSPECTION OF STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL | | | | |
|--|------------|----------|-------------------|---------------------------------------|
| VERIFICATION AND INSPECTION | CONTINUOUS | PERIODIC | NOT APPLICABLE | REFERENCED STANDARD |
| 1. MATERIAL VERIFICATION OF COLD-FORMED STEEL DECK: | | | | |
| a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS. | - | Х | - | APPLICABLE ASTM MATERIAL STANDARDS |
| b. MANUFACTURER'S CERTIFIED TEST REPORTS. | - | Х | - | - |
| 2. INSPECTION OF WELDING: | | | | |
| a. COLD-FORMED STEEL DECK: | | | | |
| 1) FLOOR AND ROOF DECK WELDS. | - | Х | - | AWS D1.3 |
| b. REINFORCING STEEL: | | | | |
| 1) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706. | - | х | - | |
| 2) REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT. | х | - | - | AWS D1.4 ACI 318: SECTION 3.5.2 |
| 3) SHEAR REINFORCEMENT. | Х | - | - | |
| | + | | | |

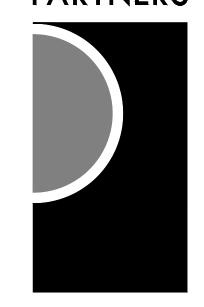
TABLE 1705.2.3 REQUIRED SPECIAL INSPECTIONS OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS

| REQUIRED SPECIAL INSPECTIONS (| OF OPEN-W | EB STEEL | JOISTS AND JOIST GIRDERS |
|--|-------------------------------------|------------------------------------|--|
| ТҮРЕ | CONTINUOUS SPECIAL INSPECTION | PERIOIDIC SPECIAL INSPECTION | REFERENCED STANDARD ^a |
| 1. INSTALLATION OF OPEN-WEB STEEL JOISTS AND |) JOIST GIRDEF | RS. | |
| a. END CONNECTIONS - WELDING OR BOLTED. | - | Х | SJI SPECIFICATIONS LISTED IN SECTION 2207.1. |
| b. BRIDGING - HORIZONTAL OR DIAGONAL. | - | | |
| 1. STANDARD BRIDGING. | - | Х | SJI SPECIFICATIONS LISTED IN SECTION 2207.1. |
| 2. BRIDGING THAT DIFFERS FROM THE SJI SPECIFICATIONS LISTED IN SECTION 2207.1. | | Х | |

FOR SI: 1 INCH = 25.4 MM. a. WHERE APPLICABLE, SEE ALSO SECTION 1705.12, SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE.

- O OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.
- P PERFORM THESE TASKS FOR EACH WELDED JOINT OR MEMBER.

PARTNERS



PARTNERS in Architecture, PLC

MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

Shymanski & Associates, L.L.C.

ph. 734.855.4810 fx. 734.855.4809

email@sastructuralengineers.com

33426 Five Mile Rd Livonia, Michigan 48154

OWNED

PROJECT NAME
Highland Township

Fire Station No.

Highland Townshi

Fire Department

1600 W. Highland Rd.

PROJECT NO.

Highland, MI 48357

18-122A

ISSUES / REVISIONS

Bidding/Construction 03/27/2020

Construction Set 05/04/2020

DRAWN BY CS

CHECKED BY
TS
APPROVED BY

TS SHEET NAME

SHEET NO. S4-00

CODE REFERENCE

MBC-Table 1604.5 ASCE Table 1.5-1

| INSPECTION TASKS PRIOR TO WELDING | QC | QA | NOT APPLICABLE |
|---|----|----|-------------------|
| WELDING PROCEDURE SPECIFICATIONS (WPSs) AVAILABLE | Р | Р | - |
| MANUFACTURER CERTIFICATION FOR WELDING CONSUMABLES AVAILABLE | Р | Р | - |
| MATERIAL IDENTIFICATION (TYPE/GRADE) | 0 | 0 | - |
| WELDER IDENTIFICATION SYSTEM ¹ | 0 | 0 | - |
| FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY) • JOINT PREPARATION • DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY AND LOCATION) • BACKING TYPE AND FIT (IF APPLICABLE) | 0 | 0 | - |
| CONFIGURATION AND FINISH OF ACCESS HOLES | 0 | 0 | - |
| FIT-UP OF FILLET WELDS • DIMENSIONS (ALIGNMENT, GAPS AT ROOF) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY AND LOCATION) | 0 | 0 | - |
| CHECK WELDING EQUIPMENT | 0 | - | - |

TABLE N5.4-2 INSPECTION TASKS DURING WELDING

| INSPECTION TASKS DURING WEL | DING | | |
|--|------|----|-------------------|
| INSPECTION TASKS DURING TO WELDING | QC | QA | NOT APPLICABLE |
| SE OF QUALIFIED WELDERS | 0 | 0 | - |
| ONTROL AND HANDLING OF WELDING CONSUMABLES • PACKAGING • EXPOSURE CONTROL | 0 | 0 | - |
| O WELDING OVER CRACKED TACK WELDS | 0 | 0 | - |
| NVIRONMENTAL CONDITIONS • WIND SPEED WITHIN LIMITS • PRECIPITATION AND TEMPERATURE | 0 | 0 | - |
| PS FOLLOWED • SETTINGS ON WELDING EQUIPMENT • TRAVEL SPEED • SELECTED WELDING MATERIALS • SHIELDING GAS TYPE/FLOW RATE • PREHEAT APPLIED • INTERPASS TEMPERATURE MAINTAINED (MIN./MAX.) • PROPER POSITION (F, V, H, OH) | 0 | 0 | - |
| ELDING TECHNIQUES • INTERPASS AND FINAL CLEANING • EACH PASS WITHIN PROFILE LIMITATIONS • EACH PASS MEETS QUALITY REQUIREMENTS | 0 | 0 | - |

TABLE N5.4-3 INSPECTION TASKS AFTER WELDING

| INSPECTION TASKS AFTER WELDING | QC | QA | NOT APPLICABLE |
|---|----|------------|-------------------|
| WELDS CLEANED | 0 | 0 | - |
| SIZE, LENGTH AND LOCATION OF WELDS | Р | Р | - |
| WELDS MEET VISUAL ACCEPTANCE CRITERIA CRACK PROHIBITION WELD/BASE-METAL FUSION CRATER CROSS SECTION WELD PROFILES WELD SIZE UNDERCUT POROSITY | P | Р | - |
| ARC STRIKES | Р | Р | - |
| K-AREA ¹ | Р | Р | - |
| BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED) | Р | Р | - |
| REPAIR ACTIVITIES | Р | Р | - |
| DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER | Р | Р | - |
| ¹ WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OF STIFFENERS HAS BEEN P VISUALLY INSPECT THE WEB K-AREA FOR CRACKS WITHIN 3 IN. (75MM) OF THE WELD | | HE K-AREA, | |

TABLE N5.6-1 INSPECTION TASKS PRIOR TO BOLTING

| INSPECTION TASKS PRIOR TO BOLTING | QC | QA | NOT APPLICABLE |
|--|----|----|-------------------|
| MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS | 0 | Р | - |
| FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS | 0 | 0 | - |
| PROPER FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE) | 0 | 0 | - |
| PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL | 0 | 0 | - |
| CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS | 0 | 0 | - |
| PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED | Р | 0 | - |
| PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTNER COMPONENTS | 0 | 0 | - |

TABLE N5.6-2 INSPECTION TASKS DURING BOLTING

| INSPECTION TASKS DURING BOLTING | QC | QA | NOT APPLICABLE |
|--|----|----|-------------------|
| FASTENERS ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED | 0 | 0 | - |
| JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION | 0 | 0 | - |
| FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING | 0 | 0 | - |
| FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES | 0 | 0 | - |

TABLE N5.6-3

| INSPECTION TASKS AFTER BOLT | ΓING | | |
|---|------|----|-------------------|
| INSPECTION TASKS AFTER BOLTING | QC | QA | NOT APPLICABLE |
| FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING | 0 | 0 | - |

O - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.

P - PERFORM THESE TASKS FOR EACH WELDED JOINT OR MEMBER.

REQUIRED VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION (LEVEL B QUALITY ASSURANCE)

| VERIFICATION OF SLUMP FLOW AND | MINIMUM TESTS | IITY INDEY | (VSI) AS DI | FLIVERED | | |
|---|---------------|------------|-------------------|-------------|---|---|
| TO THE PROJECT SITE IN ACCORDAN | | CIFICATION | | | | |
| VERIFICATION OF f'm AND f'ACC IN PRIOR TO CONSTRUCTION, EXCEPT | | | | | | |
| MIN | IMUM INSPECTI | ON | | | | |
| | | FREQUENCY | (a) | | REFERENCE FOR | CRITERIA |
| INSPECTION TASK | CONTINUOUS | PERIODIC | NOT APPLICABLE | IBC SECTION | TMS 402/ACI 530/ASCE 5 | TMS 602/ACI 530.1/ASCE 6 |
| 1. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS | | Х | | | | ART. 1.5 |
| 2. AS MASONRY CONCSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE: | | | | | | |
| a. PROPORTIONS OF SITE-PREPARED MORTAR. | | Х | | | | ART. 2.1, 2.6A |
| b. CONSTRUCTION OF MORTAR JOINTS. | | Х | | | | ART. 3.3B |
| c. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES. | | Х | | | | ART. 2.4B, 2.4H |
| d. LOCATION OF REINFORCEMENT, CONNECTORS, PRESTRESSING TENDONS AND ANCHORAGES. | | х | | | | ART. 3.4, 3.6A |
| e. PRESTRESSING TECHNIQUE. | (6) | X (2) | | | | ART. 3.6B |
| f. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY | X(p) | X(c) | | | | ART. 2.1C |
| 3. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE: | | | | | | |
| a. GROUT SPACE | | х | | | | ART. 3.2D, 3.2F |
| b. GRADE, TYPE AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES | | х | | SEC. 1.16 | | ART. 2.4, 3.4 |
| c. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES | | х | | SEC. 1.16 | | ART. 3.2E, 3.4, 3.6A |
| d. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS. | | | | | | |
| e. CONSTRUCTION OF MORTAR JOINTS. | | Х | | | | ART. 3.3B |
| . VERIFY DURING CONSTRUCTION: | | | | | | |
| a. SIZE AND LOCATION OF STRUCTURAL ELEMENTS | | Х | | | | ART. 3.3F |
| b. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION | | х | | | SEC. 1.16.4.3, 1.17.1 | |
| c. WELDING OF REINFORCEMENT | Х | | | | SEC. 2.1.7.7.2, 3.3.3.4(c), 8.3.3.4(b), | |
| d. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F (4.4°C) OR HOT WEATHER (TEMPERATURE ABOVE 90°F (32.2°C) | | х | | | 1.73 | ART. 1.8C, 1.8D |
| e. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE | Х | | | | | ART. 3.6B |
| f. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE | Х | | | | | ART. 3.5, 3.6C |
| g. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS | X(p) | X(c) | | | | ART. 3.3 B.8 |
| 5. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS | | х | | | | ART. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4 |

- (a). FREQUENCY REFERS TO THE FREQUENCY OF INSPECTION, WHICH MAY BE CONTINUOUS DURING THE TASK LISTED OR PERIODICALLY DURING THE LISTED TASK, AS DEFINED IN THE TABLE.
- (b). REQUIRED FOR THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF ACC MASONRY.
- (c). REQUIRED AFTER THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF ACC MASONRY.

TABLE 1705.3 REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

| ТҮРЕ | CONTINUOUS SPECIAL INSPECTION | PERIODIC SPECIAL INSPECTION | NOT APPLICABLE | REFERENCED STANDARD ^a | IBC REFERENCE |
|---|-------------------------------------|-----------------------------------|-------------------|--|---------------------------------|
| 1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT. | - | Х | - | ACI 318 CH. 20, 25.2, 25.3, 26.6.1-26.6.3 | 1908.4 |
| 2. REINFORCING BAR WELDING: a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706; | - | Х | - | | |
| b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16" AND | - | х | - | AWS D1.4 ACI 318: 26.6.4 | - |
| c. INSPECT ALL OTHER WELDS. | х | - | - | | |
| 3. INSPECT ANCHORS CAST IN CONCRETE | - | Х | - | ACI 318: 17.8.2 | - |
| 4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS. b | | | | | |
| a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENTION LOADS. | Х | - | - | ACI 318: 17.8.2.4 | - |
| b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a. | - | Х | - | ACI 318: 17.8.2 | |
| 5. VERIFY USE OF REQUIRED DESIGN MIX. | - | Х | - | ACI 318: CH.19. 26.4.3, 26.4.4 | 1904.1, 1904.2 1908.2, 1908. |
| 6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE | х | - | - | ASTM C172 ASTM C31 ACI 318: 26.4,26.12 | 1908.10 |
| 7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES. | Х | - | - | ACI 318: 26.5 | 1908.6, 1908.7 2908.8 |
| 8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES. | - | х | - | ACI 318: 26.5.3-26.5.5 | 1908.9 |
| 9. INSPECT PRESTRESSED CONCRETE FOR: a. APPLICATION OF PRESTRESSING FORCES; AND | х | - | - | ACI 318: 26.10 | - |
| b. GROUTING OF BONDED PRESTRESSING TENDONS. | Х | - | - | | |
| 10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS. | - | Х | - | ACI 318: CH. 26.8 | - |
| 11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESS- ING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS. | - | Х | - | ACI 318: 26.11.2 | - |
| 12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED. | - | Х | - | ACI 318: 26.11.1.2(b) | - |

- a. WHERE APPLICABLE, SEE ALSO SECTION 1705.12, SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE.
- b. SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI 318, OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF THE WORK.

TABLE 1705.6 REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS

| VERIFICATION AND INSPECTION TASK | CONTINUOUS SPECIAL INSPECTION | PERIODIC SPECIAL INSPECTION | NOT APPLICABLE |
|--|-------------------------------|-----------------------------|-------------------|
| 1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY. | - | х | |
| 2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL. | - | х | |
| 3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS. | - | х | |
| 4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL. | Х | - | |
| 5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE | - | х | |

SPECIAL INSPECTION (CONT.)

BUILDING OCCUPANCY CATEGORY

DESIGN CRITERIA

- CODE: MBC 2015 THE STRUCTURE IS DESIGNED FOR THE FOLLOWING LIVE LOADS, IN ADDITION TO THE LATERAL LOADS, SUPER-IMPOSED DEAD LOADS, & SELF WEIGHT OF THE STRUCTURE. WHERE APPLICABLE LIVE LOADS ARE REDUCED IN ACCORDANCE WITH THE PROVISIONS OF THE BUILDING CODE.
- A. AMERICAN CONCRETE INSTITUTE BUILDING CODE (ACI-318).
- B. MANUAL OF STEEL CONSTRUCTION BY AMERICAN INSTITUTE OF STEEL CONSTRUCTION (LATEST EDITION).
- C. LATEST MASONRY STANDARDS JOINT COMMITTEE (MSJC) BUILDING CODE REQUIREMENTS FOR
- MASONRY STRUCTURES (TMS 402/ACI 530/ASCE 5) AND SPECIFICATIONS FOR MASONRY STRUCTURES (TMS 602/ACI 530.1/ASCE 6)
- D. AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC) STANDARDS AND SPECIFICATIONS. E. NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS) AS PUBLISHED BY

| AMERICAN | FOREST | AND | ASSOCIATION. | |
|----------|--------|-----|--------------|--|
| | | | | |
| | | | | |

| FLOOR LIVE LOADS | | |
|------------------|---------|----------------|
| | | CODE REFERENCE |
| STAIRS | 100 PSF | ASCE Table 4-1 |
| | | |

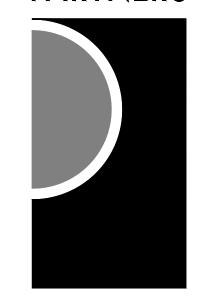
- NOTE: HANDRAILS AND GUARDS TO BE DESIGNED TO RESIST A LINEAR LOAD OF 50 POUNDS PER LINEAR FOOT. PER SECTION 1607.8.1 OF THE MBC BUILDING CODE AND A CONCENTRATED LOAD OF 200 POUNDS CONCENTRATED LOAD PER SECTION 1607.8.1.1 OF
- NOTE: GRAB BARS SHALL BE DESIGNED TO RESIST A SINGLE CONCENTRATED LOAD OF 250 POUNDS PER SECTION 1607.8.2 PER

| NOW LOADS/ROOF LIVE LOADS | | | | | |
|---|-----------------------|----------------------------------|--|--|--|
| SNOW CRITERIA | | CODE REFERENCE | | | |
| GROUND SNOW LOAD | Pg = 25 PSF | MBC FIG. 1608.2 ASCE Fig. 7-1 | | | |
| FLAT ROOF SNOW LOAD | Pf = 21 PSF (MINIMUM) | ASCE Sec. 7.3 | | | |
| EXPOSURE FACTOR | Ce = 1.0 | ASCE Table 7-2 | | | |
| IMPORTANCE FACTOR | I = 1.2 | ASCE Table 1.5-2 | | | |
| THERMAL FACTOR | Ct = 1.0 | ASCE Table 7-3 | | | |
| ROOF LIVE LOADS | Lr = 20 PSF | ASCE Table 4-1 | | | |
| NOTE: SNOW LOADS ADJACENT VERTICAL PROJECTIONS, ON LOWER ROOFS, ADJACENT TO HIGH ROOFS, OR SLOPED ROOFS ARE INCREASED FOR THE EFFECT OR DRIFTING | | | | | |

| WIND LOADS | | |
|--------------------------------|---|---------------------------------------|
| WIND CRITERIA | | CODE REFERENCE |
| BASIC WIND SPEED (3 SEC. GUST) | V = 120 MPH | ASCE FIG. 26.5-1A 26.5-1B, 26.5-1C |
| RISK FACTOR | IV | ASCE Table 1.5-1 |
| EXPOSURE CATEGORY | В | ASCE Sec. 26.7.3 |
| INTERNAL PRESSURE COEFFICIENT | ± 0.18 (ENCLOSED) | ASCE TABLE 26.11- |
| MWFRS ANALYSIS PROCEDURE | DIRECTIONAL PROCEDURE | ASCE CHAP. 27 |
| COMPONENTS AND CLADDING | ± 33 PSF MINIMUM ULTIMATE AND PER CODE REQUIREMENTS BASED ON ABOVE INFORMATION | ASCE Sec. 30.2.2 |

| SEISMIC LOADS | | |
|--|---|---------------|
| SEISMIC CRITERIA | | CODE REFERE |
| SEISMIC RISK CATEGORY | IV | ASCE Table 1 |
| SEISMIC IMPORTANCE FACTOR | I = 1.5 | ASCE Table 1 |
| -0.2 SEC MAPPED SPECTRAL RESPONSE ACCELERATION (5% OF CRITICAL DAMPING) Ss | Ss = .089 | ASCE Sec. 1 |
| -1.0 SEC MAPPED SPECTRAL RESPONSE ACCELERATION (5% OF CRITICAL DAMPING) S1 | S ₁ = .045 | ASCE Sec. 1 |
| SOIL SITE CLASS | D | ASCE Sec. 11 |
| SEISMIC DESIGN CATEGORY | В | ASCE Sec. 1 |
| SEISMIC FORCE RESISTING SYSTEM | STEEL NOT SPECIFICALLY DETAILED FOR SEISMIC | ASCE Table 12 |
| RESPONSE MODIFICATION FACTOR | R = 3.0 | ASCE Table 12 |
| DEFLECTION AMPLIFICATION FACTOR | Cd = 3.0 | ASCE Table 12 |
| ANALYSIS PROCEDURE | EQUIVALENT LATERAL FORCE | ASCE Sec. 1 |

PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

P 586.469.3600 F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

STRUCTURAL ENGINEERS

33426 Five Mile Rd Livonia, Michigan 48154 ph. 734.855.4810 fx. 734.855.4809 email@sastructuralengineers.com

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

Bidding/Construction 03/27/2020 Construction Set 05/04/2020

CHECKED BY

DRAWN BY

APPROVED BY

SHEET NAME

GENERAL NOTES

SHEET NO. S4-01

| FOUNDATION SCHEDULE | | | | | | | | |
|--------------------------------------|-------------|---------------------------------|-------------|-------------|--|--|--|--|
| F5 F4 F3 F2 F1 MARK | | | | | | | | |
| 6'-6"x8'-0" | 6'-0"x6'-0" | 4'-6"x6'-6" | 3'-6"x3'-6" | 2'-6"x2'-6" | SIZE | | | |
| 40" | 40" | 40" | 40" | 40" | THICKNESS | | | |
| 8-#5 LONG WAY 9-#5 SHORT WAY 8-#4 | | 6-#4 LONG WAY 9-#4 SHORT WAY | 5-#4 | NONE | REINFORCING EACH WAY—BOTTOM UNLESS OTHERWISE NOTED | | | |
| | | | | | REMARKS | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| HEADER SCHEDULE | | | | | | |
|--|-------------------|---------------|--|--|--|--|
| MARK | DESCRIPTION TRACK | | | | | |
| H1 | (2)600S162-43 | (2)600T125-43 | | | | |
| H2 | (2)800S162-54 | (2)600T125-43 | | | | |
| Н3 | (3)1200S200-97 | (2)600T125-43 | | | | |
| H4 | (2)1000S200-68 | (2)600T125-43 | | | | |
| Н5 | (2)1000S162-68 | (2)600T125-43 | | | | |
| H6 (2)800S162-43 (2)600T125-43 | | | | | | |
| IEADERS NOTES: 1. HEADERS WILL HAVE Fy = 50 KSI UNLESS OTHERWISE NOTED | | | | | | |

2. HEADERS REQUIRE WEB STIFFENERS AT END SUPPORTS

4. HEADERS INDICATED IN HEADER SCHEDULE ARE MINIMUM

REFER TO LIGHT GAGE NOTES 1, 2, & 3/S4-00.

SIZES. FINAL SIZES TO BE DETERMINED BY LT. GAGE SUPPLIER.

3. PROVIDE TWO CRIPPLE STUDS AT EACH END OF HEADER UNLESS OTHERWISE NOTED

(SEE PLAN)

| BEARING PLATE SCHEDULE | | | | | |
|------------------------|---------------|---------|--|--|--|
| MARK | DESCRIPTION | REMARKS | | | |
| BP1 | 7"x3/8"x0'-7" | | | | |
| BP2 | 7"x3/8"x1'-0" | | | | |
| BP3 | 8"x3/8"x0'-8" | | | | |
| BP4 | 8"x3/8"x1'-6" | | | | |

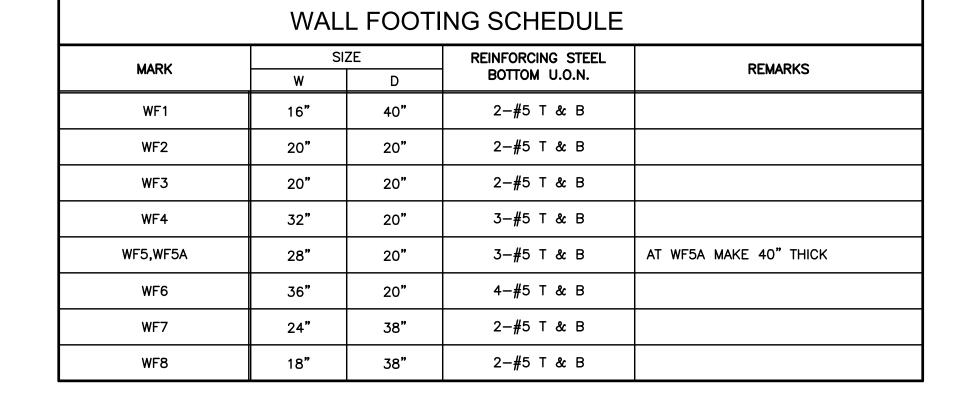
| | |
|--|---|
| TRIM MASONRY AS- REQUIRED TO FIT AROUND LINTEL | — PROVIDE ADJUSTABLE BRICK TIES 16" O.C. HORIZONTAL AND 8" O.C. VERTICAL |
| W16 LINTEL | O O.O. VEINTONE |

| LINTEL SCHEDULE 8" BEARING EACH END-U.N. | | | | | | |
|--|-----------|--|--|--|--|--|
| | MARK | DESCRIPTION | | | | |
| | L1 | 12"WIDEx8" DEEP MASONRY LINTEL WITH 2-#5 BOTTOM | | | | |
| | L2 | W8x18 + 5/16" PLATE | PROVIDE BP1 EACH END | | | |
| | L3 | W16x36 + 5/16" PLATE | PROVIDE BP3 EACH END | | | |
| | L4 | W16x45 + 3/8" PLATE | PROVIDE BP3 EACH END | | | |
| | L5 | (2)W16x40 + 3/8" PLATE | SEE DETAIL 6/S5-01 PROVIDE BP4 EACH END | | | |
| | L6 | W8x28 + 3/8" PLATE | PROVIDE BP3 EACH END | | | |
| Ľ | L7 | W8x18 + 5/16" PLATE | PROVIDE BP1 EACH END | | | |
| | L8 | 8" WIDEx8" DEEP MASONRY LINTEL WITH 2-#5 BOTTOM | | | | |
| | L9 | W8x24 + 5/16" PLATE | PROVIDE BP3 EACH END | | | |
| | LINTEL NO | TES: 1 PLATES ON LINTELS F | EXTEND WIDTH OF MASONRY OPENINGS | | | |

LINIEL NOTES: 1. PLATES ON LINIELS EXTEND WIDTH OF MASONRY OPENINGS ONLY. (SEE ARCH. DRAWINGS)

OF MASONRY 1/4"

- 2. HOLD EDGE OF PLATE ON LINTEL BACK FROM EACH FACE
- 3. WELD 1/2"øx8" HEADED STUDS 32" O.C. TO TOP FLANGE OF ALL WIDE FLANGE LINTELS
- 4. ALL EXTERIOR LINTELS TO BE GALVANIZED G90 PER ASTM 123
- 5. SEE MASONRY NOTE 15 ON SHEET S4-00 FOR MISC. LINTELS.



-WELD EACH

-BEARING PLATE

-EXTEND PLATE ON LINTEL

4" INTO BRICK EACH END

TYPICAL. COPE PLATE ON

LINTEL AROUND BEARING

TRIM MASONRY AS-

REQUIRED TO FIT

AROUND LINTEL

SIDE

PLATE

TYPICAL PLAN DETAIL AT LINTEL

BEARING WITH BRICK VENEER

64-02

:===========

SCALE: 3/4" = 1'-0"

LINTEL - SEE-

-PROVIDE 1/2"øx8" LONG

HEADED STUDS 32" O.C. PLACE EACH END OF LINTEL

PROVIDE ADJUSTABLE

BRICK TIES 16" O.C.

AT HEAD JOINTS

FILL SOLID

TRIM MASONRY AS-

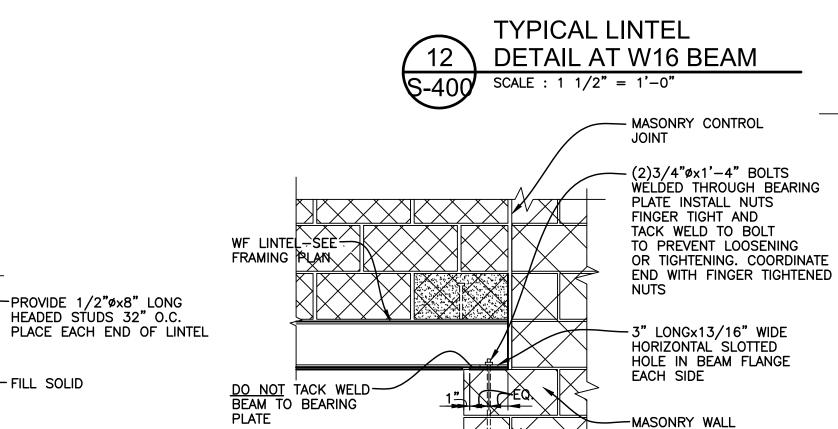
TYPICAL

SCALE : $1 \frac{1}{2}$ = 1'-0"

LINTEL DETAIL AT W8 BEAM

REQUIRED TO FIT

AROUND LINTEL

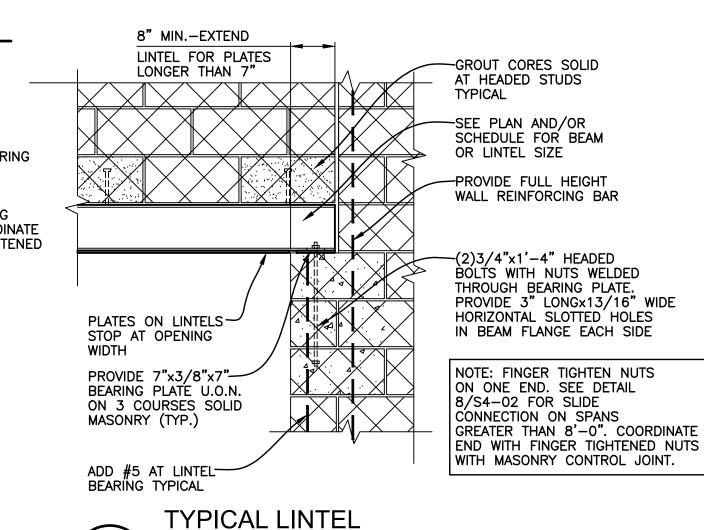


TYPICAL SLIDE

SCALE: 3/4" = 1'-0"

CONNECTION LINTEL DETAIL

PROVIDE ON ONE END OF LINTEL FOR LINTEL SPANS GREATER THAN 8'-0"



BEARING ON MASONRY DETAIL

SCALE: 3/4" = 1'-0" (LINTEL PARALLEL TO WALL)

NOTE: PLACE LINTEL BEAMS CENTERED IN CMU WALLS

MASONRY REINF. LAP LENGTH

8"WALL

WALL REINFORCING DETAIL

BAR SIZE

TYPICAL

SCALE : 3/4" = 1'-0"

12" WALL

24"

42"

UNLESS NOTED OTHERWISE

Highland Township Fire Department

PARTNERS

PARTNERS in Architecture, PLC

The ideas, concepts, drawings and thoughts conveyed

Architecture, PLC, 65 Market Street, Mount Clemens, MI,

48043 (P 586.469.3600). This set of drawings, in whole or

in part, may not be reproduced, without the written consent

Associates, L.L.C

STRUCTURAL ENGINEERS

ph. 734.855.4810 fx. 734.855.4809

email@sastructuralengineers.com

of PARTNERS in Architecture, PLC, This information is

protected under U.S. Copyright Law, all rights reserved.

herein are the intellectual property of PARTNERS in

65 MARKET STREET MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

P 586.469.3600 F 586.469.3607

© Copyright 2019

CONSULTANT

33426 Five Mile Rd

Livonia, Michigan 48154

PROJECT NAME

Highland Township Fire Station No.

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

Bidding/Construction 03/27/2020 Construction Set 05/04/2020

DRAWN BY

CHECKED BY

APPROVED BY

SHEET NAME

GENERAL NOTES

SHEET NO. S4-02

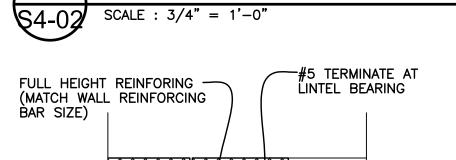
TYPICAL LINTEL DETAIL AT W8 BEAM SCALE : 1 1/2" = 1'-0"

> -VERTICAL REINFORCING FULL HEIGHT AT CORNER (MATCH WALL REINFORCING BAR SIZE)

PROVIDE ADJUSTABLE

BRICK TIES 16" O.C.

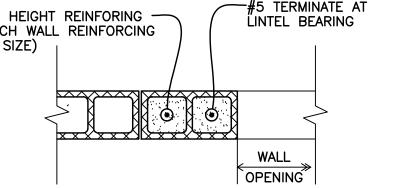
AT HEAD JOINTS



TYPICAL REINFORCING

ALONG SIDE OPENING

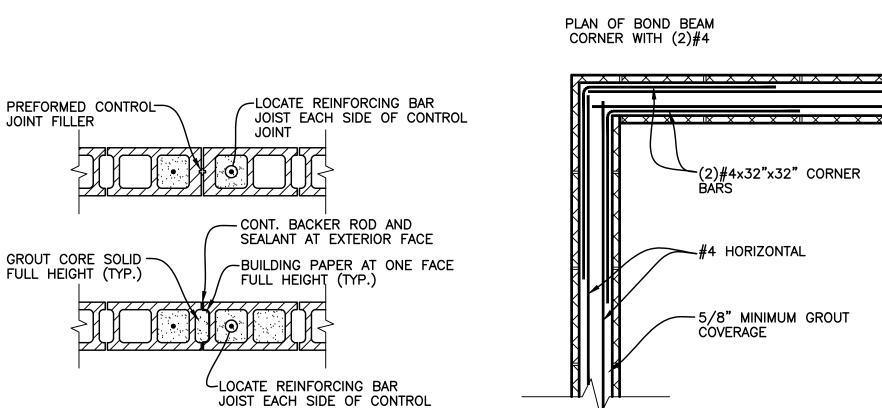
SCALE: 3/4" = 1'-0"



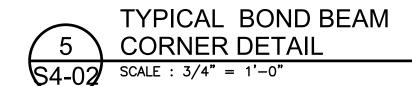


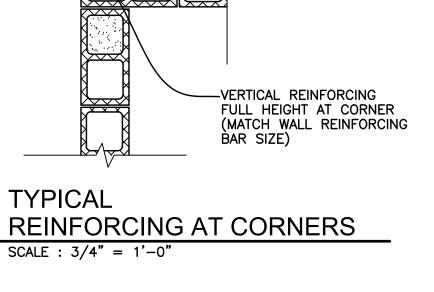
GROUT INSTRUCTIONS

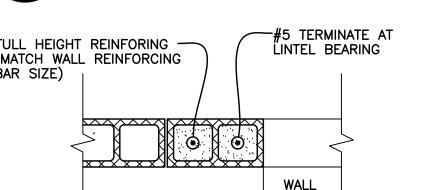
- CONSTRUCT WALL TO HEIGHT OF 4'-0" ALLOW MORTAR TO
- FILL CELLS TO 8" BELOW TOP COURSE WITH 2,000 PSI

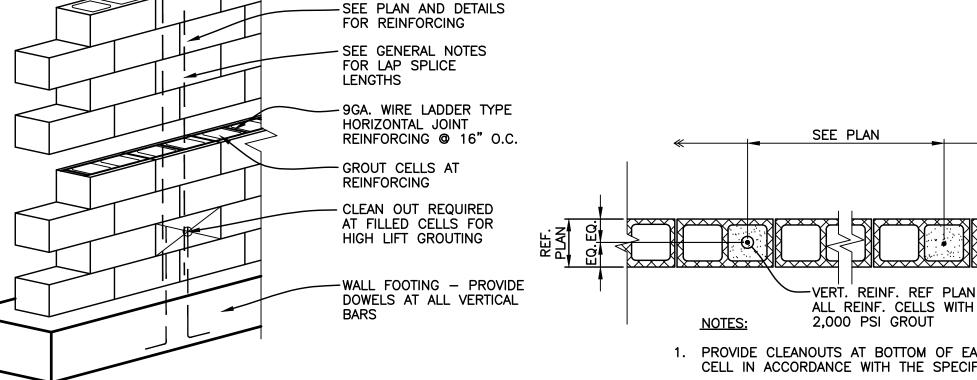


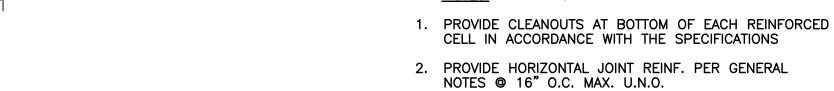








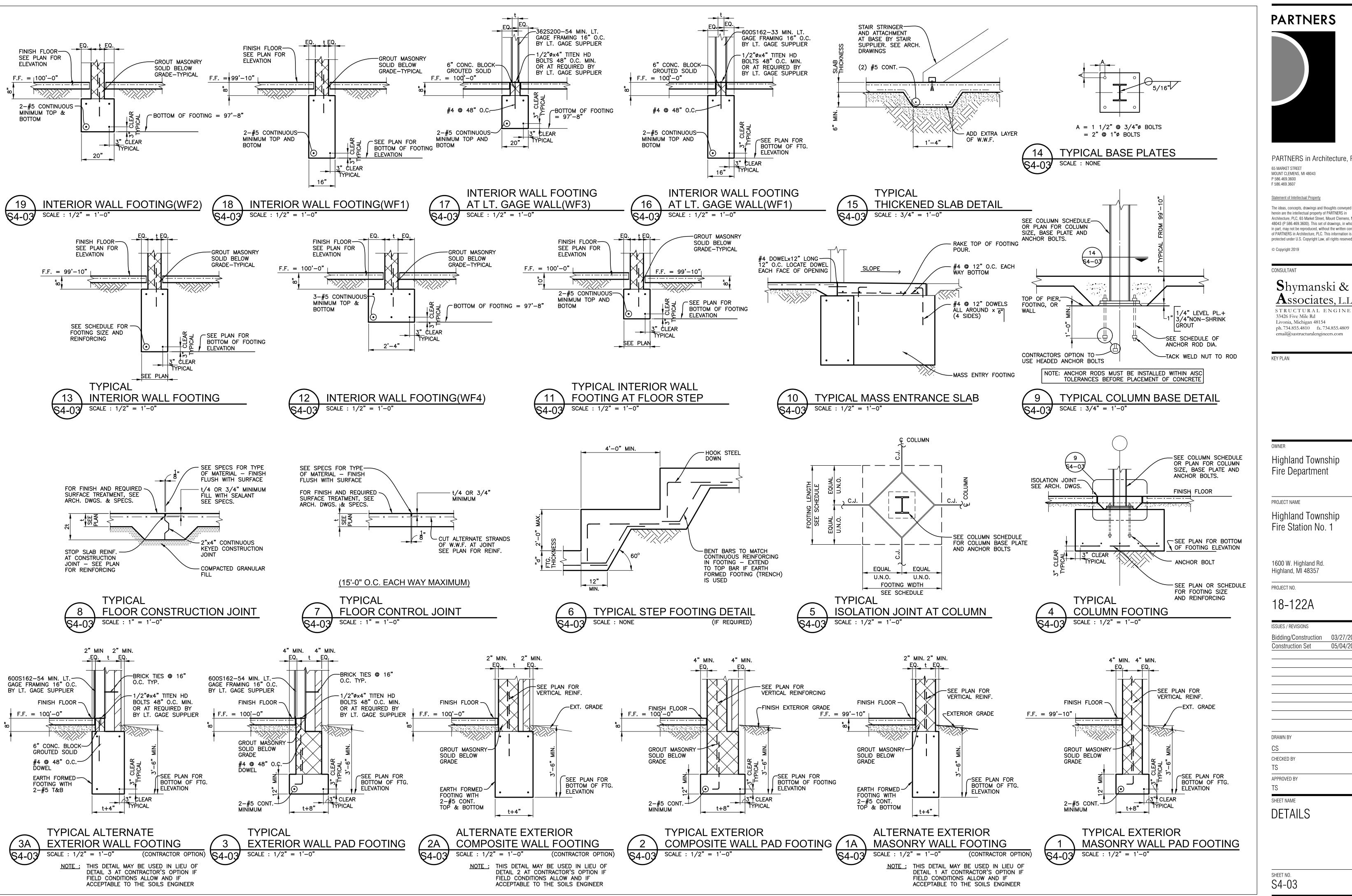


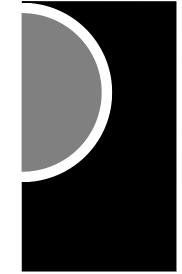


| Γ | SUF | FICIENTL' | Y TO | WITHSTAND | GROUT | PRESSURE. | | |
|---|-----|-----------|------|-----------|-------|-----------|------|--|
| _ | | | | | | | | |

- 2. INSPECT UNITS FOR ALIGNMENT, CLEAN OUT CELLS TO BE FILLED.
- CONCRETE GROUT.
- 4. DELAY 3 5 MINUTES PRIOR TO CONSOLIDATING TO ALLOW WATER TO BE ABSORBED BY MASONRY.

| RCED | |
|-----------------------|--|
| Y CONSTRUCTION DETAIL | |
| | |





PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI 48043 (P 586,469,3600). This set of drawings, in whole of in part, may not be reproduced, without the written conse of PARTNERS in Architecture, PLC. This information is

© Copyright 2019

Shymanski & **A**ssociates, L.L.C

STRUCTURAL ENGINEERS 33426 Five Mile Rd Livonia, Michigan 48154 ph. 734.855.4810 fx. 734.855.4809 email@sastructuralengineers.com

Highland Township Fire Department

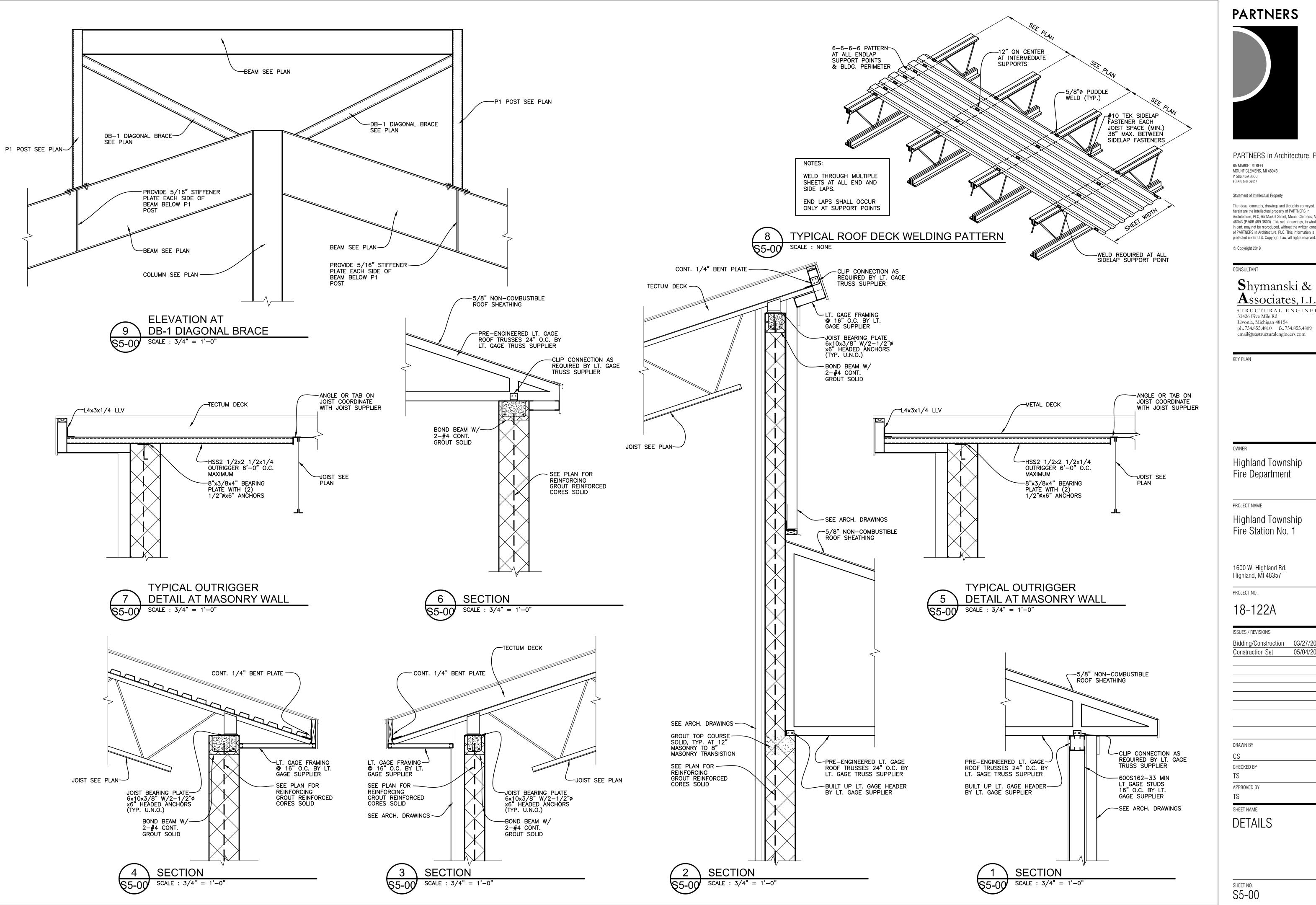
Highland Township Fire Station No.

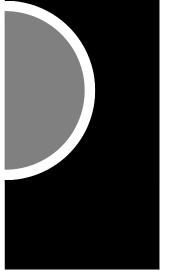
1600 W. Highland Rd.

18-122A

Bidding/Construction 03/27/2020 Construction Set 05/04/2020

DETAILS





PARTNERS in Architecture, PLC

MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

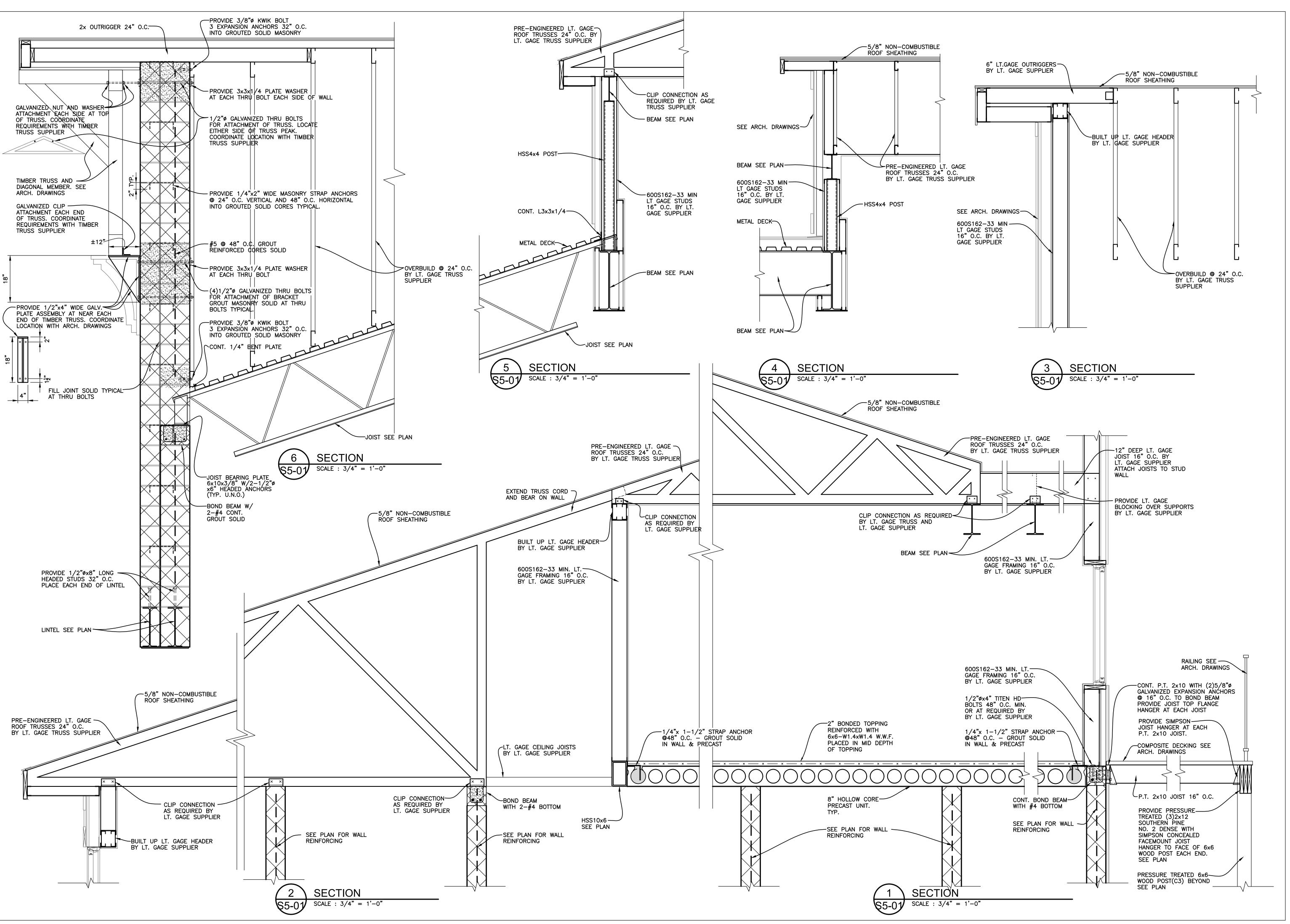
Associates, L.L.C

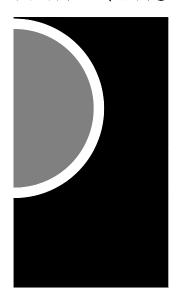
STRUCTURAL ENGINEERS 33426 Five Mile Rd Livonia, Michigan 48154 ph. 734.855.4810 fx. 734.855.4809

Highland Township Fire Department

Highland Township Fire Station No.

Bidding/Construction 03/27/2020 Construction Set





PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

Shymanski & Associates, L.L.C

STRUCTURAL ENGINEERS 33426 Five Mile Rd Livonia, Michigan 48154 ph. 734.855.4810 fx. 734.855.4809 email@sastructuralengineers.com

(FY PI AN

OWNED

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd.

Highland, MI 48357

18-122A

ISSUES / REVISIONS

PROJECT NO.

 Bidding/Construction
 03/27/2020

 Addendum #3
 04/30/2020

 Construction Set
 05/04/2020

WNI DV

DRAWN BY

CHECKED BY

ADDOUGD BY

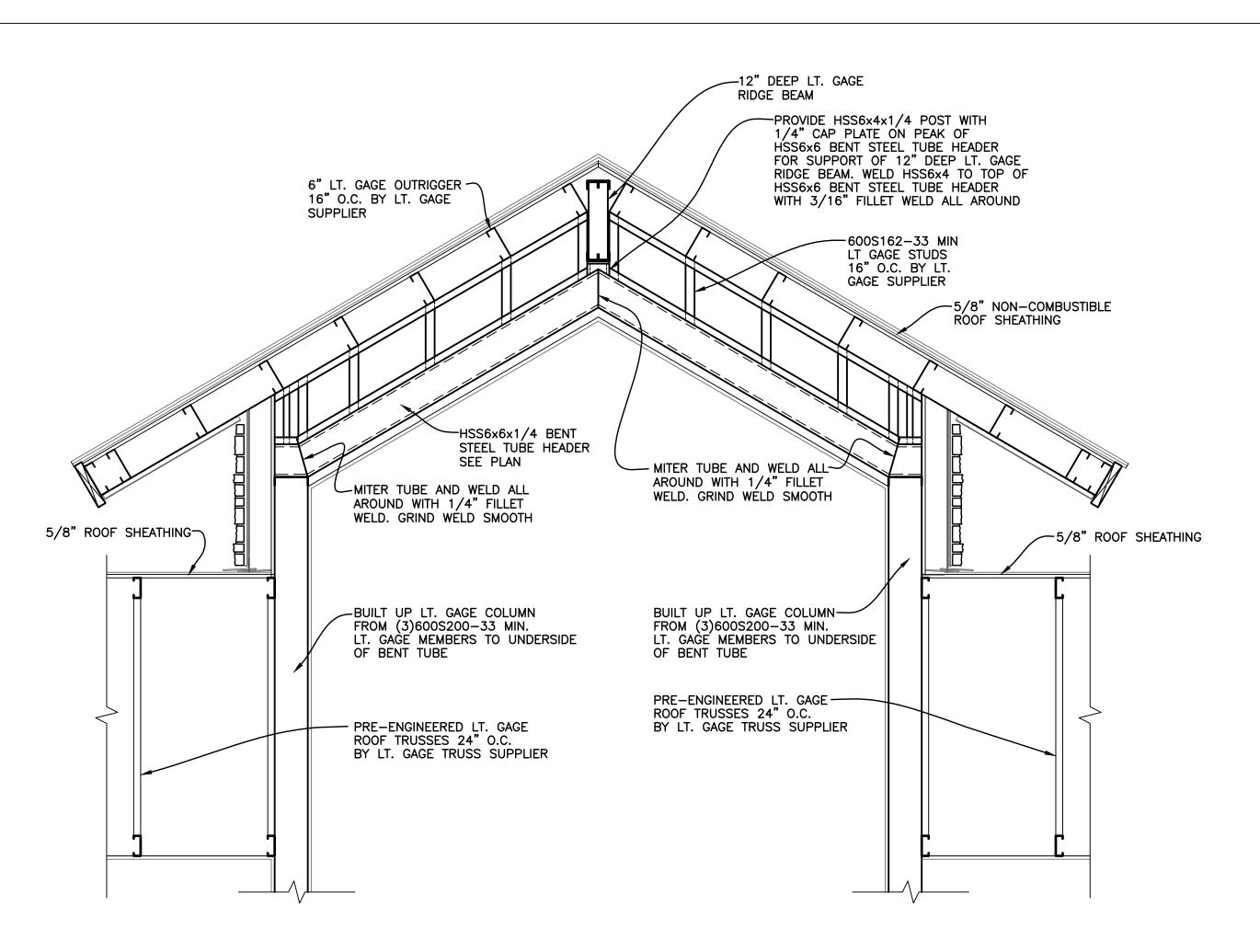
APPROVED BY

SHEET NAME

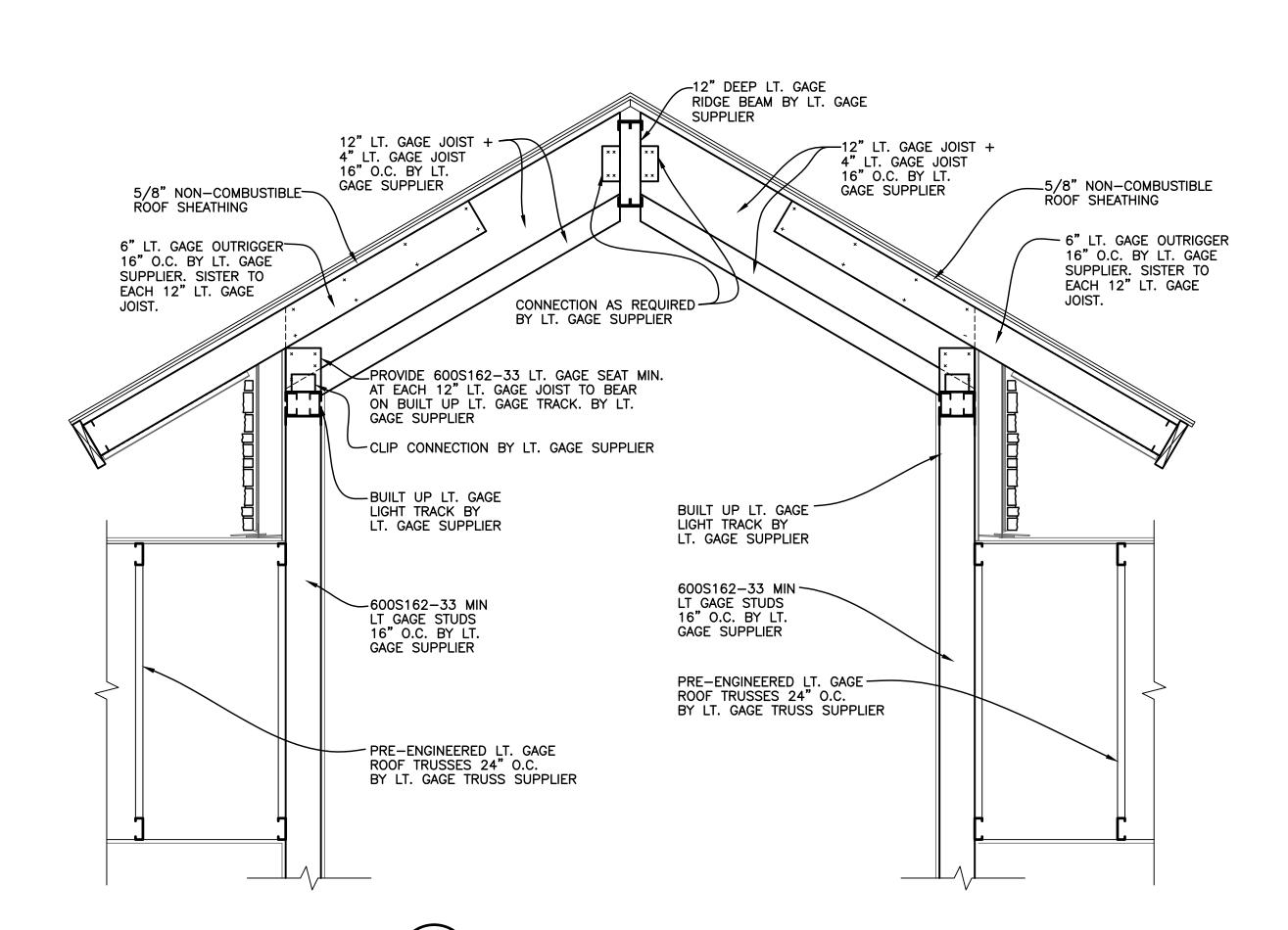
DETAILS

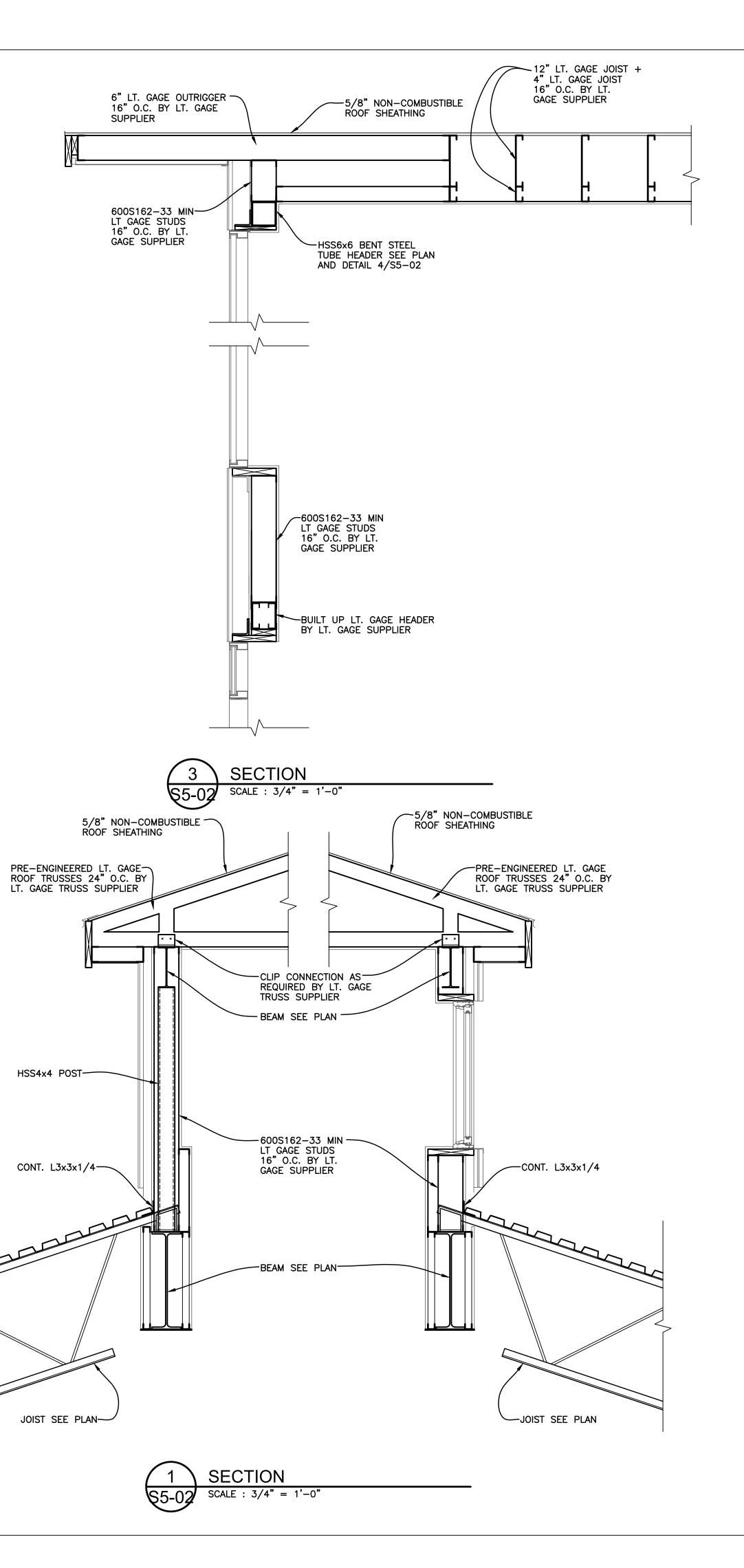
DETAILS

SHEET NO. S5-01

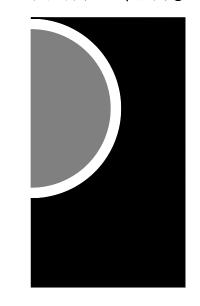


4 SECTION S5-02 SCALE : 3/4" = 1'-0"





PARTNERS



PARTNERS in Architecture, PLC

65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

Shymanski & Associates, L.L.C.

STRUCTURAL ENGINEERS
33426 Five Mile Rd
Livonia, Michigan 48154
ph. 734.855.4810 fx. 734.855.4809
email@sastructuralengineers.com

I/EV/ DL ANI

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd.

Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

Bidding/Construction03/27/2020Construction Set05/04/2020

DRAWN BY

CHECKED BY

APPROVED BY

TS

SHEET NAME

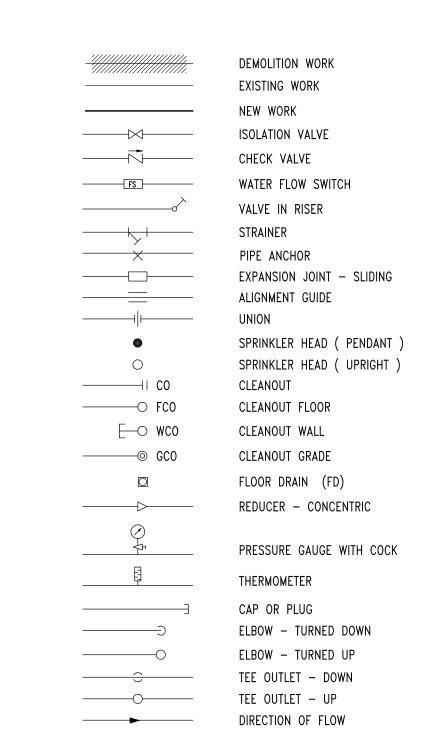
DETAILS

SHEET NO. S5-02

ABBREVIATIONS

| CCU | AIR CONDITIONING CONDENSING UNIT | F | FAHRENHEIT |
|------------|---|--------|----------------------------|
| D | ACCESS DOOR | FEC | FIRE EXTINGUISHER CABINET |
| FF | ABOVE FINISHED FLOOR | FD | FLOOR DRAIN |
| HU | AIR HANDLING UNIT | FLR. | FLOOR |
| Р | ACCESS PANEL | FPM | FEET PER MINUTE |
| SR | AUTOMATIC SPRINKLER RISER | FR | FIRE RISER |
| | | FS | FLOW SWITCH |
| TU | BRITISH THERMAL UNIT | FT. | FEET |
| | | FGCO | FINISHED GROUND CLEAN OUT |
| C F | COOLING COIL CENTRIFUGAL FAN | GPM | GALLONS PER MINUTE |
| FM HWS | CUBIC FEET PER MINUTE CHILLED WATER SUPPLY | НВ | HOSE BIBB |
| HWR | CHILLED WATER SOFFEI | НО | HUB OUTLET |
| l 1441X | CAST IRON | HP | HORSEPOWER |
| 0 | CLEAN OUT | HW | HOT WATER (POTABLE) |
| OND | CONDENSATE | | |
| ONT. | CONTINUATION | IN | INCHES |
| UH | CABINET UNIT HEATER | INL | INLET |
| W | COLD WATER | INV | INVERT |
| | | LAT | LEAVING AIR TEMPERATURE |
| b | DRY BULB TEMPERATURE, °F | LAV | LAVATORY |
| В | DECIBELS | LBS/HR | POUNDS PER HOUR |
| DC | DIRECT DIGITAL CONTROL | LWT | LEAVING WATER TEMPERATURE |
| ET | DETAIL | - | |
| IA | DIAMETER | MAX. | MAXIMUM |
| N. | DOWN | MBH | 1000 BTU/HR |
| S | DOWNSPOUT | MECH | MECHANICAL |
| WG. | DRAWING | MIN. | MINIMUM |
| | | MISC | MISCELLANEOUS |
| Α | EXHAUST AIR | NC | NORMALLY CLOSED |
| CUH - | ELECTRIC CABINET UNIT HEATER | NIC | NOT IN CONTRACT |
| F | EXHAUST FAN | NO | NORMALLY OPEN |
| LEV. SP | ELEVATION EXTERNAL STATIC PRESSURE | NOM. | NOMINAL |
| UH | ELECTRIC UNIT HEATER | | |
| WC | ELECTRIC WATER COOLER | OA | OUTSIDE AIR |
| Χ. | EXISTING | | |
| XH | EXHAUST | Р | PUMP |
| XIST | EXISTING | PD | PRESSURE DROP (FEET OF WAT |
| | | PSI | POUNDS PER SQUARE INCH |
| | | · | |

PLUMBING, PIPING & FIRE



| —⊗—— | BALANCING VALVE |
|--------------------|---|
| — \$ —— | TWO-WAY MODULATING CONTROL VALVE |
| — \$ —— | THREE-WAY MODULATING CONTROL VALVE |
| \uparrow | MANUAL AIR VENT |
| ₩ T | TEST PLUG (PRESSURE/TEMPERATURE) |
| | NEW CONNECTION |
| | SANITARY LINE ABOVE GRADE SANITARY LINE UNDERGROUND VENT PIPE COLD WATER PIPING |
| | HOT WATER PIPING |
| — F —— | HOT WATER RETURN PIPING FIRE SPRINKLER PIPE (FS) |
| G | GAS PIPING |
| — ST ——— | STORM LINE |
| — HHWS ——— | HEATING HOT WATER SUPPLY |
| — HHWR ——— | HEATING HOT WATER RETURN |

Sheet Number Sheet Title MECHANICAL LEGEND AND ABBREVIATIONS FLOOR PLANS - SANITARY & VENT M1 - 02FLOOR PLANS - DOMESTIC WATER & GAS M2 - 01FLOOR PLANS — HVAC M2 - 02ROOF PLAN - HVAC M3-01 FLOOR PLANS — PIPING MECHANICAL SCHEDULES M4-01 MECHANICAL SCHEDULES M4-02M5-01 MECHANICAL DETAILS M5-02 MECHANICAL DETAILS M6-01 TEMPERATURE CONTROLS M6-02 TEMPERATURE CONTROLS | FLOOR PLANS - FIRE PROTECTION

HVAC LEGEND & SYMBOLS

GENERAL HVAC NOTES:

THE FOLLOWING NOTES APPLY TO ALL HVAC DRAWINGS, EXCEPT WHERE OTHERWISE INDICATED.

- 1. WHEREVER VOLUME DAMPERS OCCUR ABOVE CEILINGS WITHOUT REMOVABLE TILE AND AN ACCESS PANEL IS NOT FURNISHED, PROVIDE AN EXPOSED DAMPER REGULATOR TO ALLOW DAMPER ADJUSTMENT FROM BELOW CEILING. UNIT TO BE EQUAL TO VENTLOCK No. 666 IN 1/2"x3/8" SIZE.
- 2. ALL DIMMENSION SHOWN FOR DUCTWORK ARE NET INSIDE DIMENSIONS.
- 3. DIFFUSER AND REGISTER LOCATIONS SHALL BE COORDINATED WITH ARCHITECTURAL REFLECTED CEILING PLAN.
- 4. THOUGH SOME OFFSETS & TRANSITIONS ARE SHOWN IN PIPING AND SHEET METAL TO HELP INDICATE THE PHYSICAL RELATIONSHIP BETWEEN THEM. IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW ALL PIPING AND SHEET METAL OFFSET & TRANSITIONS REQUIRED. THE CONTRACTOR SHALL FULLY COORDINATE THE MECHANICAL WORK WITHIN ITSELF AND WITH THE WORK OF ALL TRADES TO PROVIDE COMPLETE AND OPERABLE SYSTEMS WITHOUT INTERFERENCES.
- 5. DUCT PRESSURE CONSTRUCTION CLASSIFICATION SHALL BE AS SPECIFIED.
- 6. ALL ROUND RUNOUTS AND DROPS TO DIFFUSERS SHALL BE SAME NOMINAL SIZE AS INDICATED ON THE DRAWINGS.
- 7. ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN FURRED CHASE OR SUSPENDED CEILING.
- 8. ACCESS PANELS AND DOORS ARE REQUIRED THROUGH BUILDING CONSTRUCTION ASSEMBLIES SUCH AS WALLS, CEILING, PARTITONS AND FLOORS TO SERVICE AND MAINTAIN DAMPERS, CONTROL MOTORS, REGULATORS, VALVES, FLEXIBLE DUCT CONNECTIONS AND OTHER ITEMS OR DEVICES INCORPORATED IN MECHANICAL WORK. SUCH PANELS AND DOORS SHALL BE PROVIDED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS. MECHANICAL CONTRACTOR SHALL COORDINATE LOCATION OF ACESS DOORS AND PANELS AND VERIFY THE EXACT QUANTITY, SIZE, FIRE-RATING AND LOCATION AFTER THE SYSTEMS AND EQUIPMENT REQUIRING ACCESS HAVE BEEN INSTALLED AND PRIOR TO THE CLOSURE OF THE AFFECTED CEILING AND BUILDING ASSEMBLIES. MINIMUM ACCESS PANEL AND DOOR SIZE SHALL BE 24 INCHES BY 18 INCHES UNLESS OTHERWISE NOTED.
- 9. ALL DUCTWORK PENETRATIONS FIRE—RATED WALLS AND FLOORS SHALL BE PROVIDED WITH FIRE DAMPERS AND ACCESS DOOR.

PLUMBING GENERAL NOTES:

WATER)

PRESSURE REDUCING VALVE

FOR PIPE SIZES TO INDIVIDUAL PLUMBING FIXTURES AND VARIOUS PIECES OF EQUIPMENT REFER TO SPECIFICATIONS.

RETURN AIR

BALANCE

RETURN

RETURN FAN

REHEAT COIL

SUPPLY AIR

SANITARY WASTE

SMOKE DETECTOR

SPECIFIC GRAVITY

SPRINKLER STANDPIPE

TOTAL PRESSURE

UNIT HEATER

STATIC PRESSURE SENSOR

TRENCH DRAIN CONNECTION

UNLESS OTHERWISE NOTED

VARIABLE AIR VOLUME

VOLUME EXTRACTOR

VENT THRU ROOF

WATER GAUGE WALL HYDRANT

STATIC PRESSURE (INCHES OF WATER)

SUPPLY FAN

STAND PIPE

SPRINKLER

STACK

TYPICAL

VALVE

VACUUM

STK

UON

VAC

RELATIVE HUMIDITY

REVOLUTIONS PER MINUTE

ROOF DRAIN/STAND PIPE

- 2. IN ALL WASTE DRAINAGE PIPING THE CONTRACTOR SHALL FURNISH AND INSTALL CLEANOUTS (IN ADDITION TO THE CLEANOUTS INDICATED ON DRAWINGS AS REQUIRED BY THE GOVERNING PLUMBING CODE).
- 3. REFER TO HVAC GENERAL NOTE-4
- 4. FOR ADDITION NOTES COMMON TO PLUMBING REFER TO HVAC NOTES.

FIRE PROTECTION GENERAL NOTES:

- 1. AREA UNDER RENOVATION IS TO BE FULLY SPRINKLERED. SPRINKLER SYSTEM DESIGN AND LAYOUT TO BE IN COMPLIANCE WITH NFPA 13. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION. ALL UNFINISHED/UNOCCUPIED AREAS SHALL BE TREATED AS STORAGE AREAS.
- 2. REMOVE ALL AUTOMATIC SPRINKLER HEADS PRESENTLY INSTALLED IN THE AREA OF RENOVATION AND TURN OVER TO THE OWNER. FIELD VERIFY LOCATION OF EXISTING HEADS AND SPRINKLER PIPING LOCATION PRIOR TO DESIGN & INSTALLATION. CONNECT NEW SPRINKLER HEADS TO EXISITNG MAINS IF FEASABLE, PROVIDE NEW MAIN VALVES, FLOW SWITCHES AS REQUIRED. WORK SHALL BE PHASED SO THAT FIRE PROTECTION SERVICE WILL NOT BE INTERRUPTED FOR THE ADJACENT SPACES DURING ALTERATIONS.
- 3. DO NOT SCALE THE PLUMBING AND FIRE PROTECTION DRAWINGS FOR LOCATION OF CEILING MOUNTED SPRINKLER HEADS. ALL CEILING MOUNTED HEADS SHALL BE COORDINATED WITH AND LOCATED AS SHOWN ON REFLECTED ARCHITECTURAL CEILING PLANS, UNLESS OTHERWISE NOTED.
- 4. ALL SPRINKLERS LOCATED IN LAY-IN CEILINGS SHALL BE CENTERED IN THE MIDDLE OF THE CEILING TILES UNLESS OTHERWISE INDICATED ON THE ARCHITECTURAL SERIES DRAWINGS.
- 5. REFER TO HVAC GENERAL NOTE-6.
- 6. THOUGH SOME FIRE PROTECTION MAINS ARE SHOWN ON THE DRAWINGS, ADDITIONAL PIPING ARE EXISTING AND REQUIRED TO BE REMOVED & TRASHED. FIELD VERIFY LOCATION PRIOR TO START OF DEMOLITION.

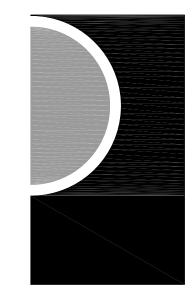
INDICATES RECTANGULAR DUCT 18x6 WITH DUCT SIZE 18 INCHES WIDE (IN PLANE OF DRAWING) AND 6 INCHES DEEP. SIZE PERTAINS TO THE ENTIRE RUN OF DUCT UNLESS OTHERWISE NOTED. INDICATES FLAT OVAL DUCT 22x14ø WITH DUCT SIZE 22 INCHES WIDE (IN PLANE OF DRAWING) AND 14 INCHES DEEP. SIZE PERTAINS TO THE ENTIRE RUN OF DUCT UNLESS OTHERWISE NOTED. 6 INCHES IN DIAMETER. SIZE PERTAINS TO THE ENTIRE RUN OF DUCT 6"ø (FROM DUCT ORIGIN AT TAP TO END OF DUCT) UNLESS OTHERWISE NOTED. VANE TURN ELBOW & AIR SPLIT TYPE DUCT TAKE-OFF INCLINED RISE IN RESPECT TO AIR FLOW INCLINED DROP IN RESPECT TO AIR FLOW DN. → VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES) VANED ELBOW (SHORT RADIUS) \sim INDICATES FLEXIBLE DUCT (RUNOUT) OF SIZE AS SCHEDULED OR SHOWN. LENGTH SHALL NOT EXCEED 5 FT. DUCT TURNING UP VOLUME CONTROL DAMPER (MANUAL) DUCT TURNING DOWN FLEXIBLE CONNECTION OR FLEXIBLE DUCT CONNECTOR VERTICAL FIRE DAMPER MOTORIZED DAMPER SMOKE DAMPER HORIZONTAL FIRE DAMPER POINT OF NEW CONNECTION DUCT SMOKE DETECTOR

DEMOLITION WORK

Mechanical



PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

Statement of Intellectual Property

F 586.469.3607

herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI 48043 (P 586, 469, 3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved

© Copyright 2019

CONSULTANT



KEY PLAN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS 01-28-2020 SCHEMATIC DESIGN BIDDING-CONSTRUCTION 03-27-2020 CONSTRUCTION 05-04-2020

DRAWN BY

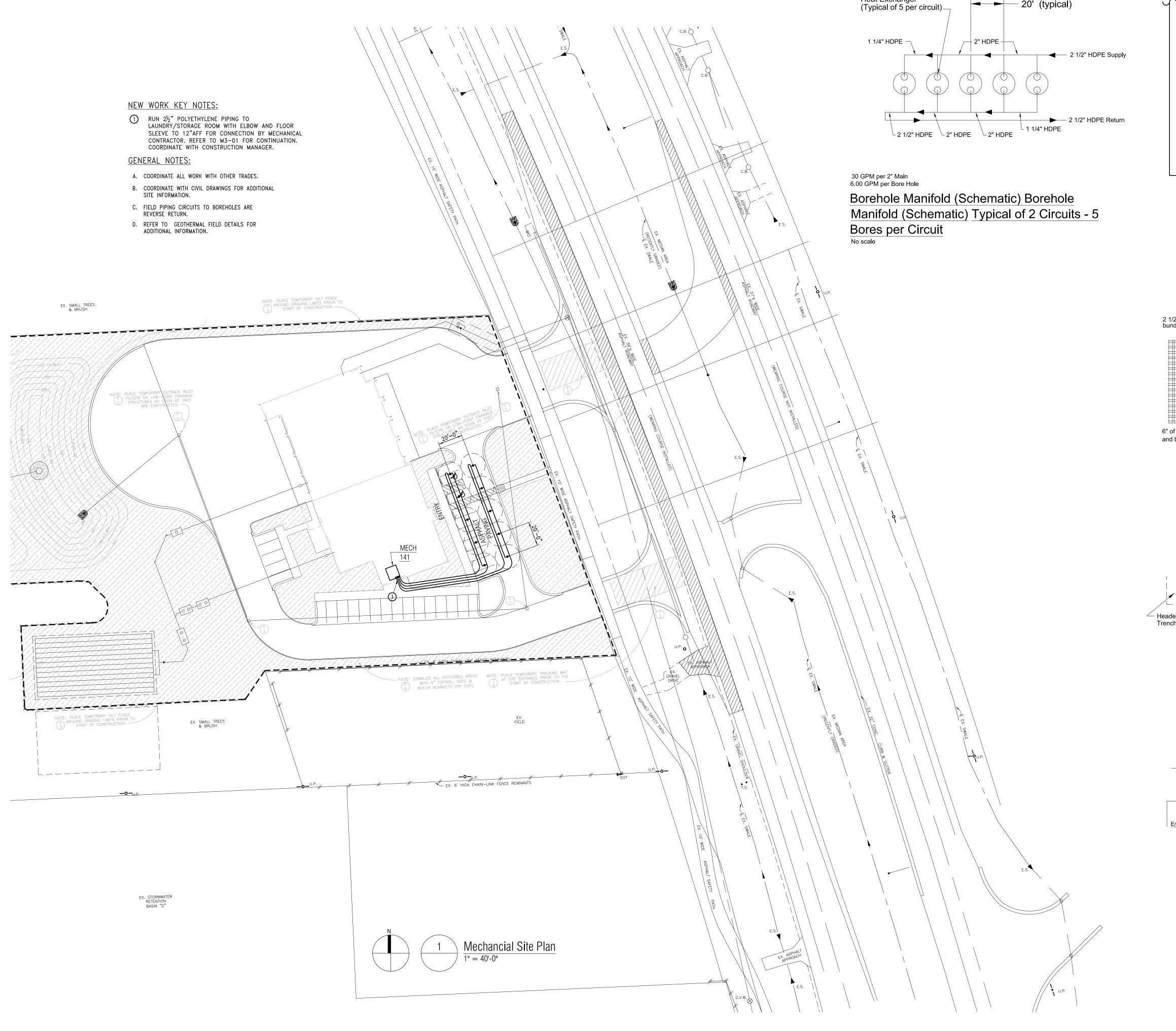
CHECKED BY

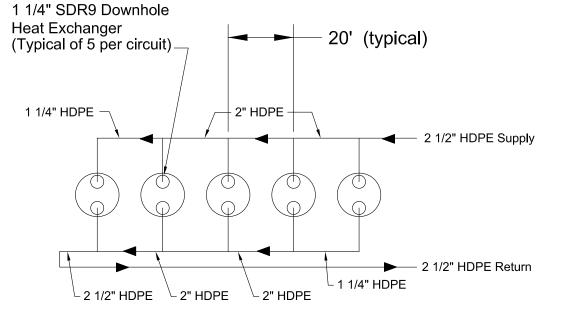
APPROVED BY

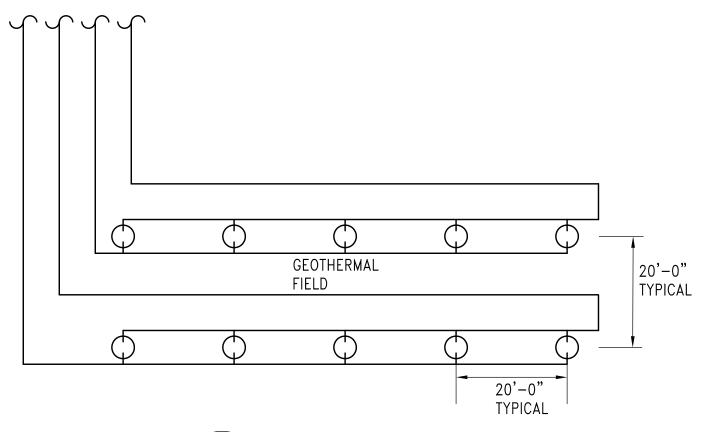
SHEET NAME

MECHANICAL ABBREVIATIONS

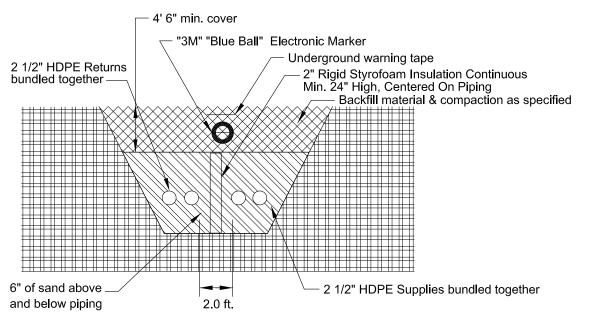
SHEET NO. M0-01



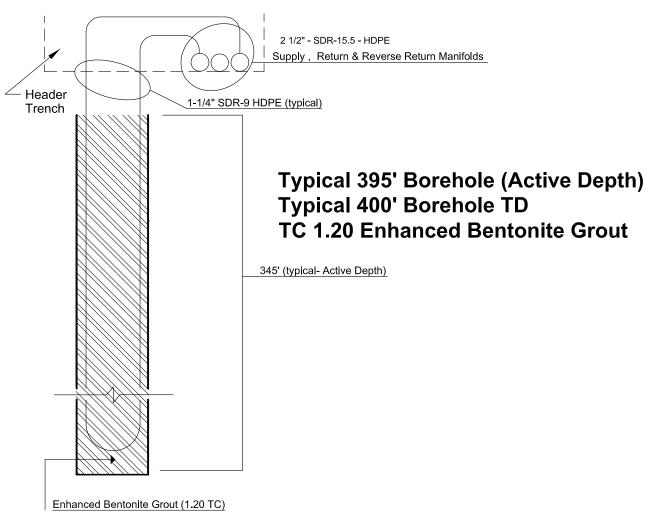








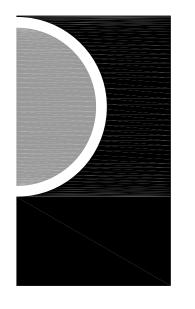
Trench Detail



Bore Detail



PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, Ml. 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



KEY PLAN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| SCHEMATIC DESIGN | 01-28-2020 |
|----------------------|------------|
| BIDDING-CONSTRUCTION | 03-27-2020 |
| ADDENDUM # 1 | 04-20-2020 |
| CONSTRUCTION | 05-04-2020 |

DRAWN BY

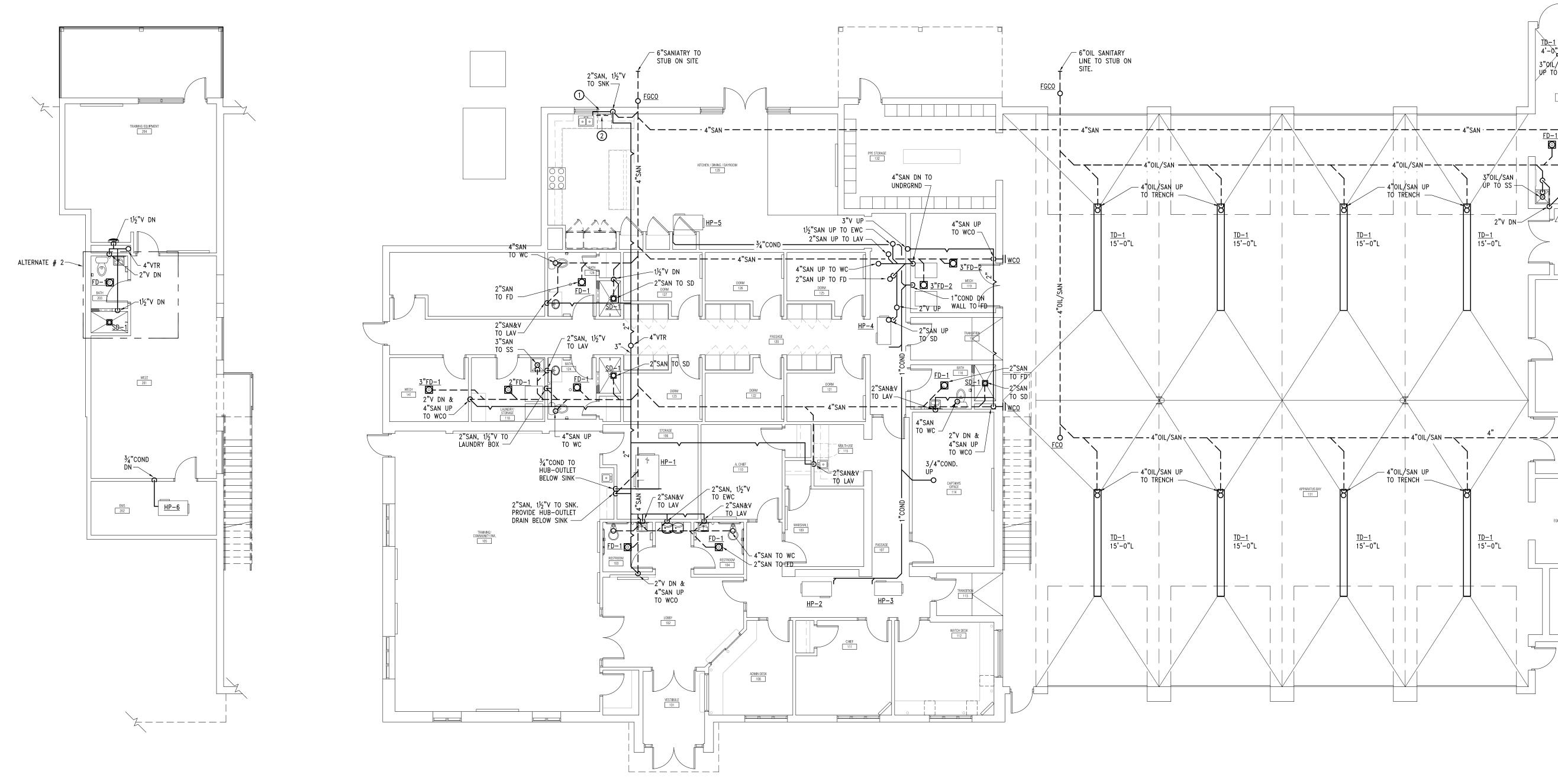
CHECKED BY

APPROVED BY

SHEET NAME

MECHANICAL SITE PLAN

SHEET NO. M1-00



Mezzanine Level Floor Plan - Sanitary & Vent



NEW WORK KEY NOTES:

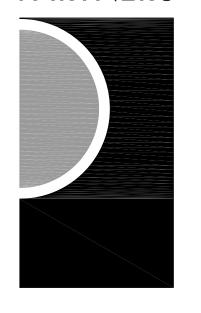
- 1 EXTEND SANITARY IN WALL TO SINK. KEEP TIGHT TO INTERIOR OF WALL. PROVIDE MINIMUM 2" RIGID INSULATION BEHIND PIPE AN SEAL TO STUD
- EXTEND WASTE TO DISHWASHER. PROVIDE FINAL CONNECTION PER MANUFACTURERS RECOMMENDATION.

GENERAL NOTES:

A. COORDINATE ALL WORK WITH OTHER TRADES.



PARTNERS



✓4"SAN TO WC

∠4"OIL/SAN

≟√4"OIL/SAN UP TO

STRAINER.

SCBA MAINTENANCE 137

TD-2 IN TRENCH

PROVIDE DOMED

TRENCH DRAIN BY ZURN

MODEL # Z886, 6-1/4"WIDE,

80"LONG, 6-1/2"DEEP INV.

PROVIDE CLOSÉD END CAPS,

NO-HUB OUTLET WITH BOTTOM

DOME STRAINER, HEEL PROOF

POLYETHYLENE GRATE -

CLASS A. CONTRACTOR TO

DRILL 2-1/2"ø CUTOUTS TO

ALLOW 2"HOSE FROM THE

EXTRACTOR

∕-4"0IL/SAN

PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600
F 586.469.3607

Statement of Intellectual Property

herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



KEY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| ISSUES / REVISIONS | |
|----------------------|------------|
| SCHEMATIC DESIGN | 01-28-2020 |
| BIDDING-CONSTRUCTION | 03-27-2020 |
| ADDENDUM # 1 | 04-20-2020 |
| CONSTRUCTION | 05-04-2020 |
| | |

DRAWN BY

CHECKED BY

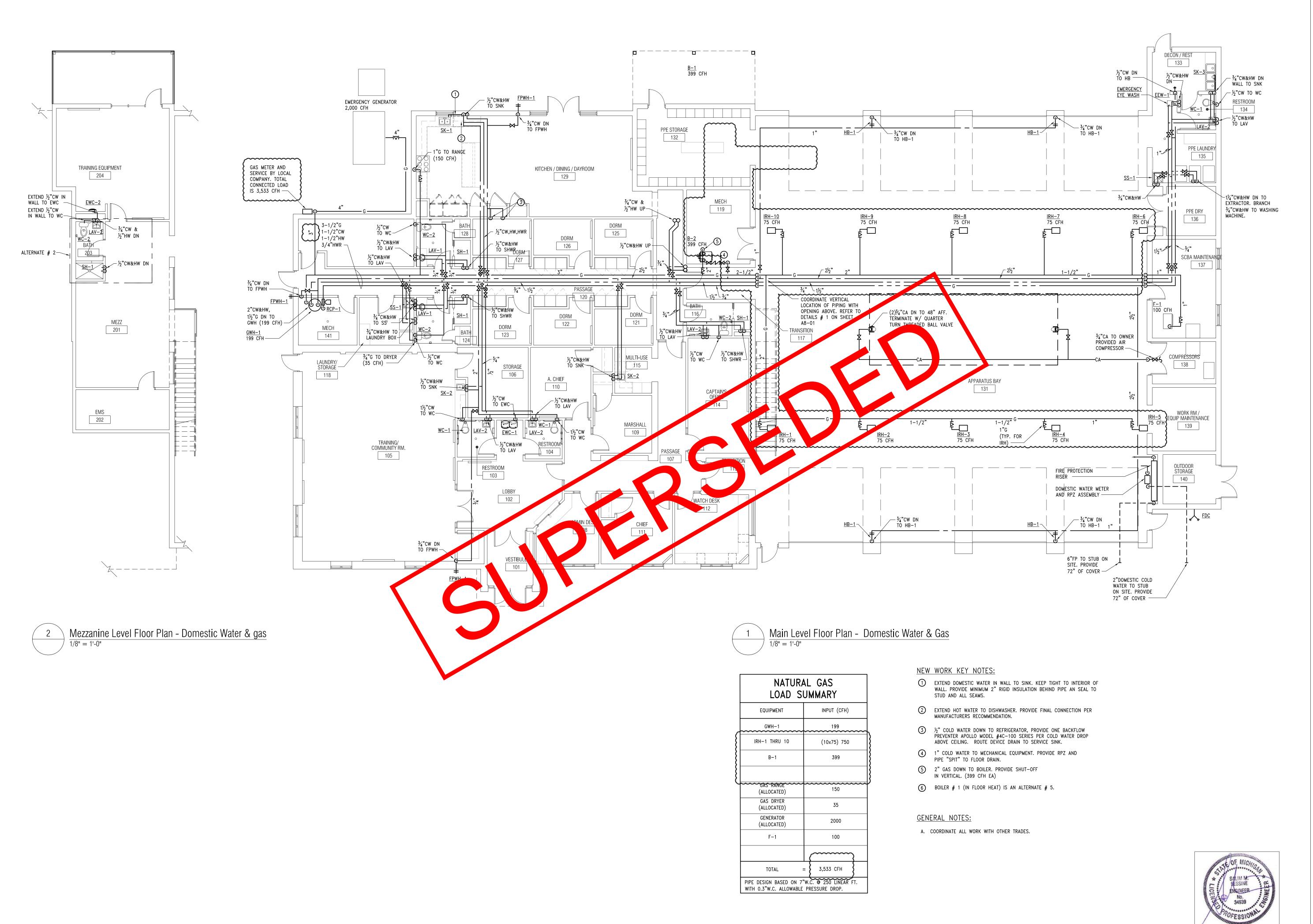
MS

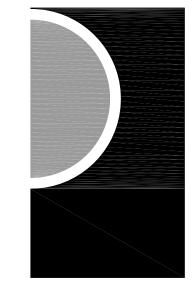
APPROVED BY

MS SHEET NAME

FLOOR PLANS -SANITARY & VENT

SHEET NO. **1**





PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600

Statement of Intellectual Property

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



KEY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| ISSUES / REVISIONS | |
|----------------------|----------|
| SCHEMATIC DESIGN | 01-28-20 |
| BIDDING-CONSTRUCTION | 03-27-20 |
| ADDENDUM # 1 | 04-20-20 |
| CONSTRUCTION | 05-04-20 |
| CCD # 1 | 06-03-20 |

DRAWN BY

PHECKED BY

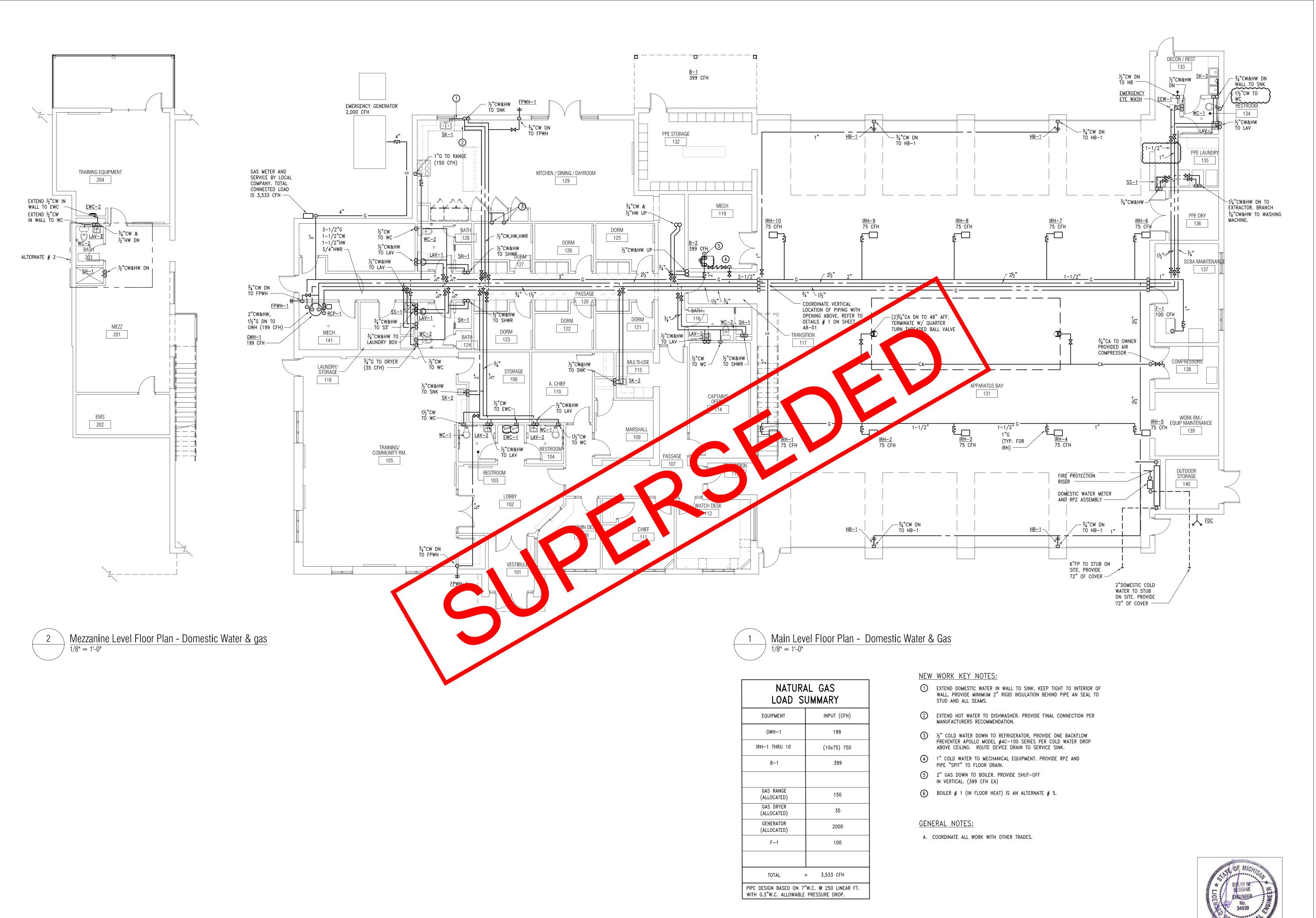
CHECKED BY MS

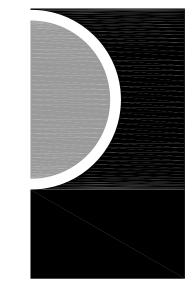
APPROVED BY

SHEET NAME

FLOOR PLANS -DOMESTIC WATER AND GAS

SHEET NO.
M1-02





PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600
F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



KEY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| ISSUES / REVISIONS | |
|----------------------|----------|
| SCHEMATIC DESIGN | 01-28-20 |
| BIDDING-CONSTRUCTION | 03-27-20 |
| ADDENDUM # 1 | 04-20-20 |
| CONSTRUCTION | 05-04-20 |
| CCD # 1 | 06-03-20 |
| CCD # 2 | 06-16-20 |

DRAWN BY

CHECKED BY

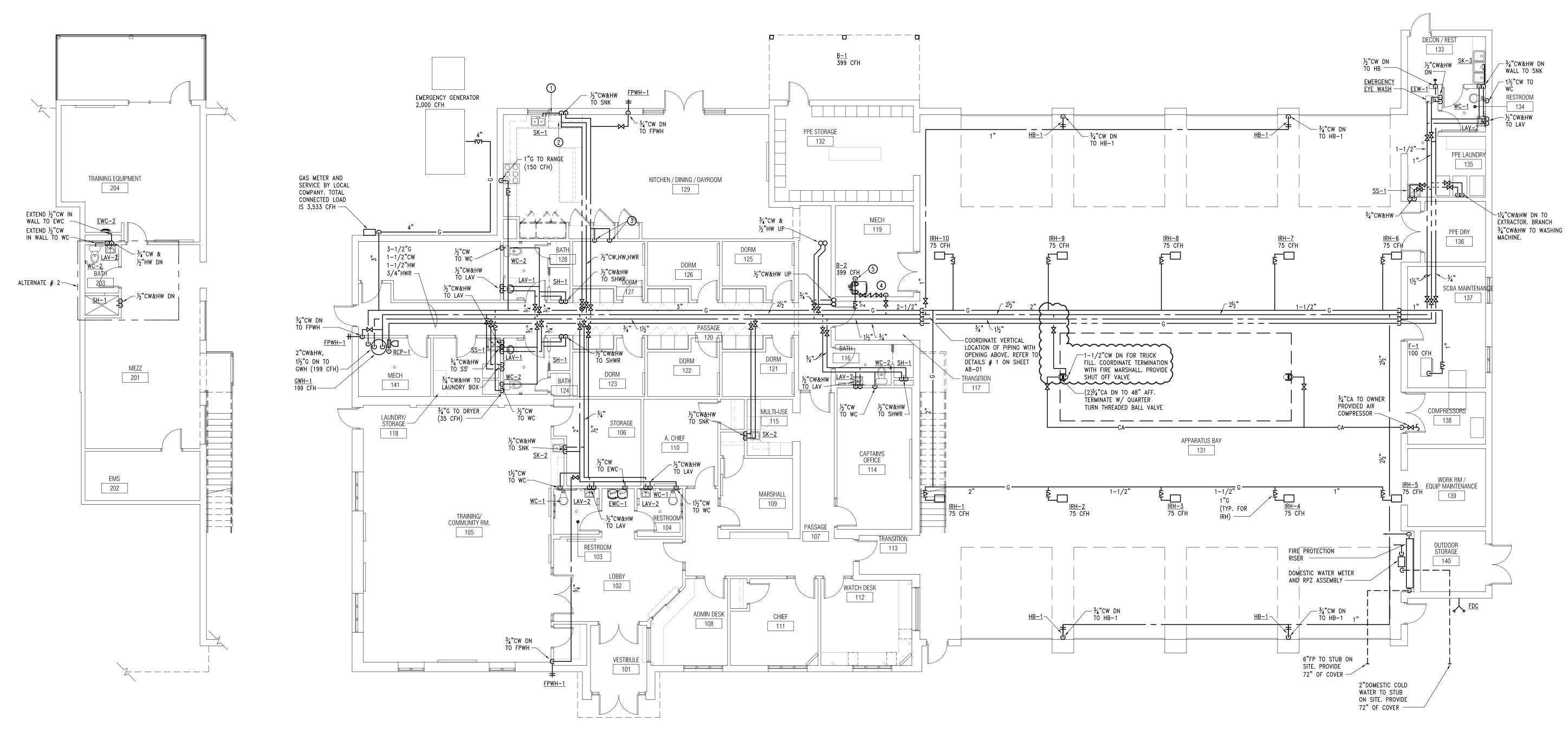
1S

APPROVED BY
MS

SHEET NAME

FLOOR PLANS -DOMESTIC WATER AND GAS

SHEET NO.
M1-02



Mezzanine Level Floor Plan - Domestic Water & gas

1/8" = 1'-0"



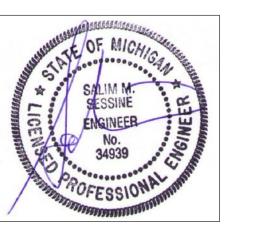
| | AL GAS UMMARY |
|---|------------------|
| EQUIPMENT | INPUT (CFH) |
| GWH-1 | 199 |
| IRH-1 THRU 10 | (10x75) 750 |
| B-1 | 399 |
| | |
| GAS RANGE (ALLOCATED) | 150 |
| GAS DRYER (ALLOCATED) | 35 |
| GENERATOR (ALLOCATED) | 2000 |
| F-1 | 100 |
| | |
| TOTAL | = 3,533 CFH |
| PIPE DESIGN BASED ON 7 WITH 0.3"W.C. ALLOWABLE | |

NEW WORK KEY NOTES:

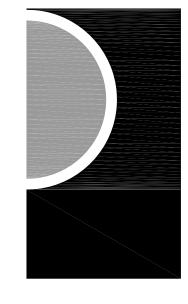
- EXTEND DOMESTIC WATER IN WALL TO SINK. KEEP TIGHT TO INTERIOR OF WALL. PROVIDE MINIMUM 2" RIGID INSULATION BEHIND PIPE AN SEAL TO STUD AND ALL SEAMS.
- 2 EXTEND HOT WATER TO DISHWASHER. PROVIDE FINAL CONNECTION PER MANUFACTURERS RECOMMENDATION.
- 3 ½" COLD WATER DOWN TO REFRIGERATOR, PROVIDE ONE BACKFLOW PREVENTER APOLLO MODEL #4C-100 SERIES PER COLD WATER DROP ABOVE CEILING. ROUTE DEVICE DRAIN TO SERVICE SINK.
- 1" COLD WATER TO MECHANICAL EQUIPMENT. PROVIDE RPZ AND PIPE "SPIT" TO FLOOR DRAIN.
- 5) 2" GAS DOWN TO BOILER. PROVIDE SHUT-OFF IN VERTICAL. (399 CFH EA)
- 6 BOILER # 1 (IN FLOOR HEAT) IS AN ALTERNATE # 5.

GENERAL NOTES:

A. COORDINATE ALL WORK WITH OTHER TRADES.



PARTNERS



PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600

Statement of Intellectual Property

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



KEY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

| ADDENDUM # 1 | 04-20-20 |
|--------------|----------|
| | |
| CCD # 1 | 06-03-20 |
| CCD # 2 | 06-16-20 |
| CCD # 5 | 09-29-20 |

DRAWN BY

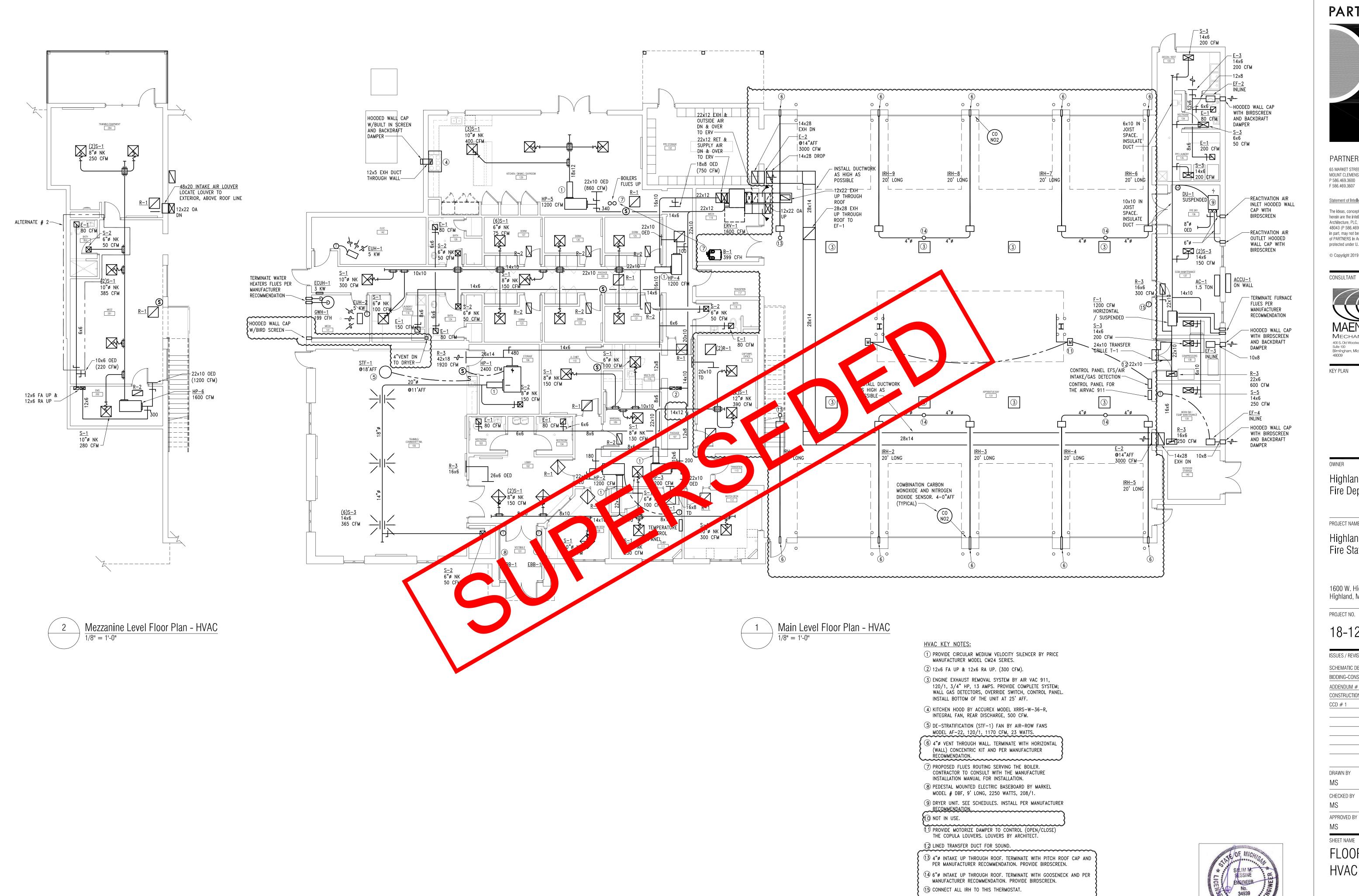
CHECKED BY

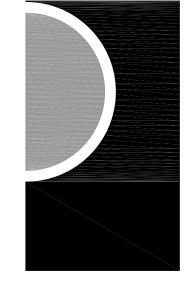
APPROVED BY
MS

SHEET NAME

FLOOR PLANS -DOMESTIC WATER AND GAS

SHEET NO. M1-02





PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



KEY PLAN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| ISSUES / REVISIONS | |
|----------------------|------------|
| SCHEMATIC DESIGN | 01-28-2020 |
| BIDDING-CONSTRUCTION | 03-27-2020 |
| ADDENDUM # 1 | 04-20-2020 |
| CONSTRUCTION | 05-04-2020 |
| CCD # 1 | 06-03-2020 |

DRAWN BY

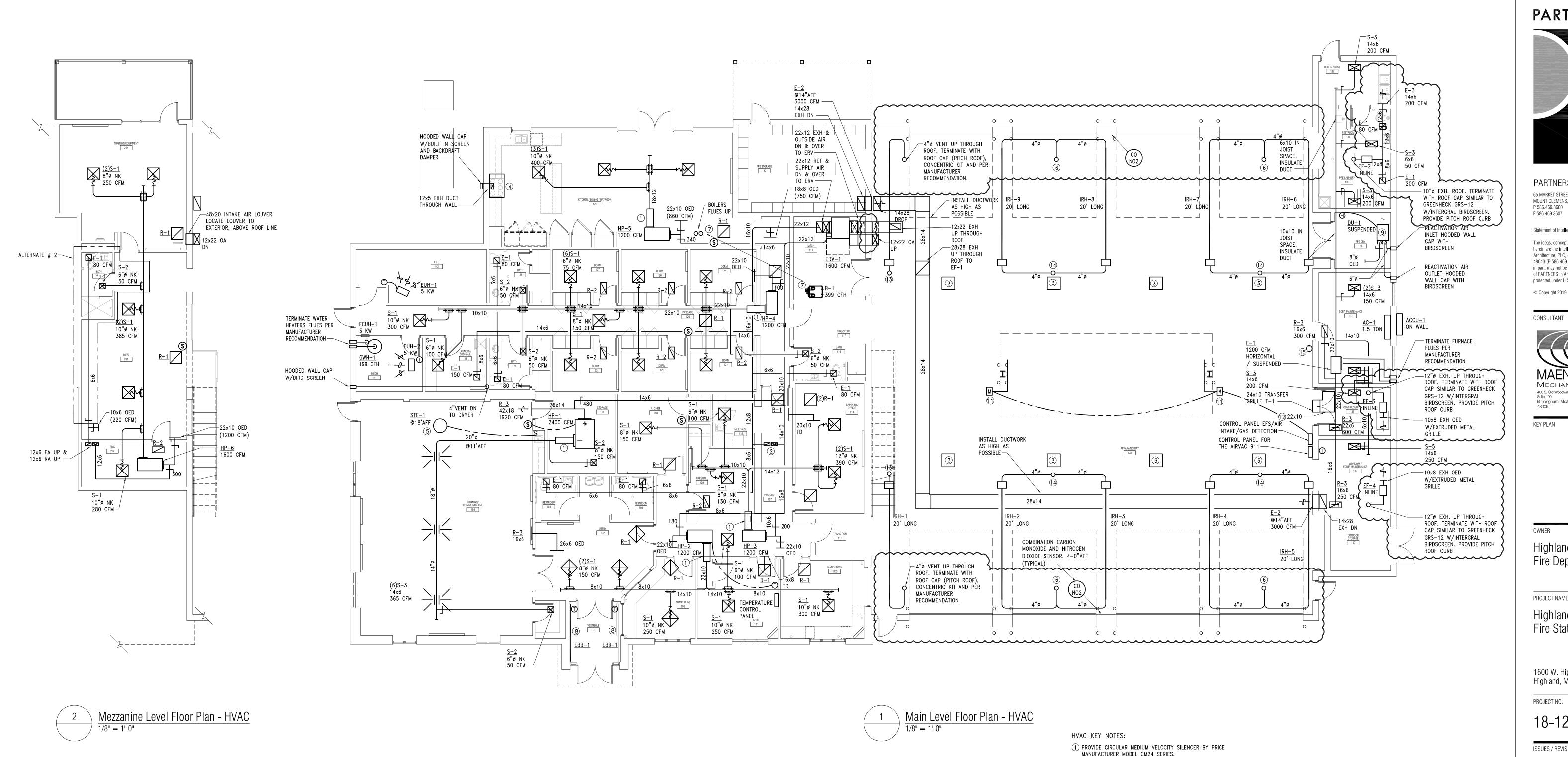
CHECKED BY

APPROVED BY

SHEET NAME

FLOOR PLANS -HVAC

SHEET NO. M2-01



(2) 12x6 FA UP & 12x6 RA UP. (300 CFM).

(3) ENGINE EXHAUST REMOVAL SYSTEM BY AIR VAC 911, 120/1, 3/4" HP, 13 AMPS. PROVIDE COMPLETE SYSTEM; WALL GAS DETECTORS, OVERRIDE SWITCH, CONTROL PANEL. INSTALL BOTTOM OF THE UNIT AT 25' AFF.

(4) KITCHEN HOOD BY ACCUREX MODEL XRRS-W-36-R, INTEGRAL FAN, REAR DISCHARGE, 500 CFM.

5 DE-STRATIFICATION (STF-1) FAN BY AIR-ROW FANS MODEL AF-22, 120/1, 1170 CFM, 23 WATTS. (6) 6"0 VENT UP THROUGH ROOF. TERMINATE WITH ROOF CAP (PITCH ROOF), CONCENTRIC KIT AND PER MANUFACTURER RECOMMENDATION.

(7) PROPOSED FLUES ROUTING SERVING THE BOILER. CONTRACTOR TO CONSULT WITH THE MANUFACTURE INSTALLATION MANUAL FOR INSTALLATION.

8 PEDESTAL MOUNTED ELECTRIC BASEBOARD BY MARKEL MODEL # DBF, 9' LONG, 2250 WATTS, 208/1.

(9) DRYER UNIT. SEE SCHEDULES. INSTALL PER MANUFACTURER RECOMMENDATION.

10 NOT IN USE.

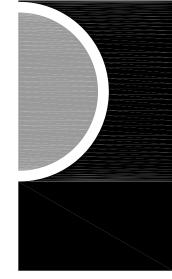
1) PROVIDE MOTORIZE DAMPER TO CONTROL (OPEN/CLOSE) THE COPULA LOUVERS. LOUVERS BY ARCHITECT.

(12) LINED TRANSFER DUCT FOR SOUND.

(13) 4"Ø INTAKE UP THROUGH ROOF. TERMINATE WITH PITCH ROOF CAP AND PER MANUFACTURER RECOMMENDATION. PROVIDE BIRDSCREEN.

4 6"ø INTAKE UP THROUGH ROOF. TERMINATE WITH GOOSENECK AND PER MANUFACTURER RECOMMENDATION. PROVIDE BIRDSCREEN. (15) CONNECT ALL IRH TO THIS THERMOSTAT.

PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.



KEY PLAN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

ADDENDUM # 1 04-20-2020 CCD # 1 06-03-2020 09-18-2020

DRAWN BY

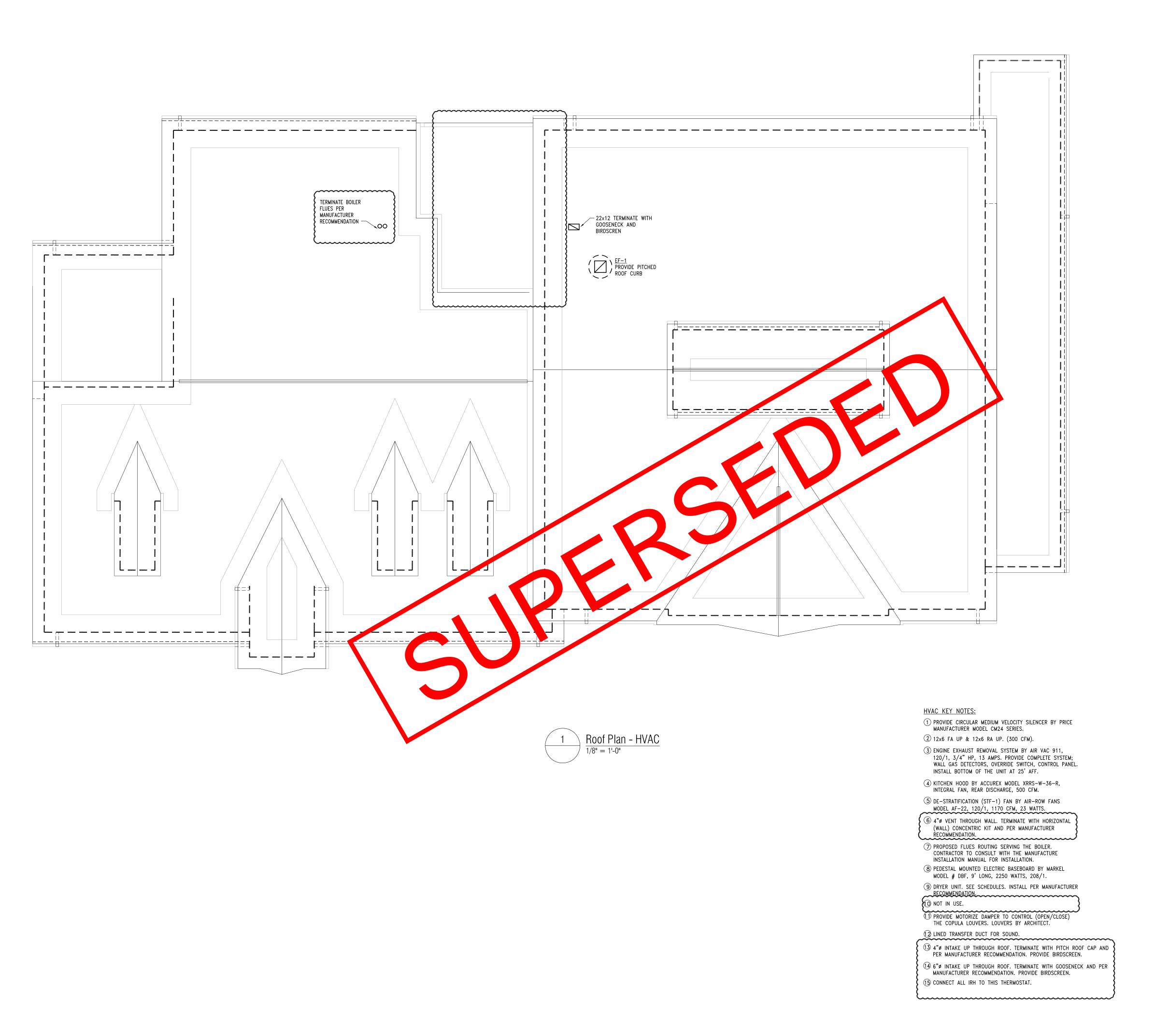
CHECKED BY

APPROVED BY

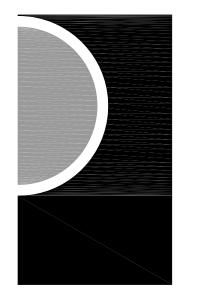
SHEET NAME

FLOOR PLANS -HVAC

SHEET NO. M2-01







PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

P 586.469.3600

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



VEV DLAN

OWNED

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| ISSUES / REVISIONS | |
|----------------------|-----------|
| SCHEMATIC DESIGN | 01-28-202 |
| BIDDING-CONSTRUCTION | 03-27-202 |
| | |
| CONSTRUCTION | 05-04-202 |
| CCD # 1 | 06-03-202 |
| <u> </u> | |

DRAWN BY

CHECKED BY

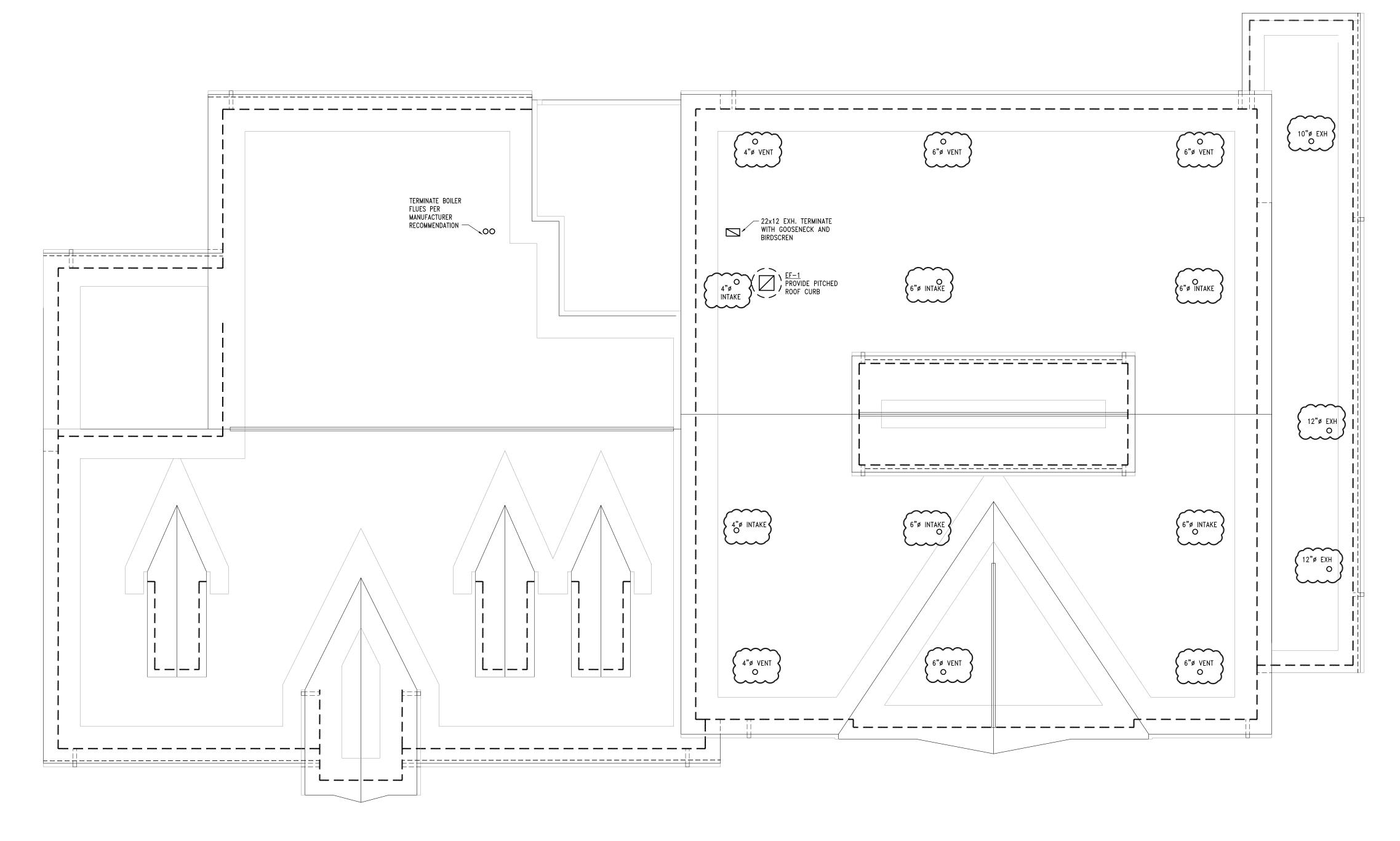
MS

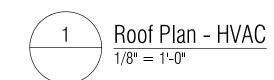
APPROVED BY

IVIO

ROOF PLAN - HVAC

SHEET NO. M2-02

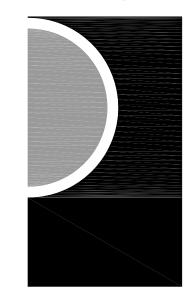




HVAC KEY NOTES:

- 1 PROVIDE CIRCULAR MEDIUM VELOCITY SILENCER BY PRICE MANUFACTURER MODEL CM24 SERIES.
- ② 12x6 FA UP & 12x6 RA UP. (300 CFM).
- (3) ENGINE EXHAUST REMOVAL SYSTEM BY AIR VAC 911, 120/1, 3/4" HP, 13 AMPS. PROVIDE COMPLETE SYSTEM; WALL GAS DETECTORS, OVERRIDE SWITCH, CONTROL PANEL. INSTALL BOTTOM OF THE UNIT AT 25' AFF.
- (4) KITCHEN HOOD BY ACCUREX MODEL XRRS-W-36-R, INTEGRAL FAN, REAR DISCHARGE, 500 CFM.
- 5 DE-STRATIFICATION (STF-1) FAN BY AIR-ROW FANS MODEL AF-22, 120/1, 1170 CFM, 23 WATTS.
- 6 6 6 VENT UP THROUGH ROOF. TERMINATE WITH ROOF CAP (PITCH ROOF), CONCENTRIC KIT AND PER MANUFACTURER RECOMMENDATION.
- 7 PROPOSED FLUES ROUTING SERVING THE BOILER. CONTRACTOR TO CONSULT WITH THE MANUFACTURE
- INSTALLATION MANUAL FOR INSTALLATION.
- 8 PEDESTAL MOUNTED ELECTRIC BASEBOARD BY MARKEL MODEL # DBF, 9' LONG, 2250 WATTS, 208/1.
- 9 DRYER UNIT. SEE SCHEDULES. INSTALL PER MANUFACTURER
- RECOMMENDATION. 10 NOT IN USE.
- 1 PROVIDE MOTORIZE DAMPER TO CONTROL (OPEN/CLOSE)
 THE COPULA LOUVERS. LOUVERS BY ARCHITECT.
- 12 LINED TRANSFER DUCT FOR SOUND.
- (13) 4"ø INTAKE UP THROUGH ROOF. TERMINATE WITH PITCH ROOF CAP AND PER MANUFACTURER RECOMMENDATION. PROVIDE BIRDSCREEN.
- 4 6"ø INTAKE UP THROUGH ROOF. TERMINATE WITH GOOSENECK AND PER MANUFACTURER RECOMMENDATION. PROVIDE BIRDSCREEN.
- (15) CONNECT ALL IRH TO THIS THERMOSTAT.

PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

P 586.469.3600

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019



Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No.

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| CCD # 1 | 06-03-2 |
|---------|---------|
| PR-1 | 09-18-2 |

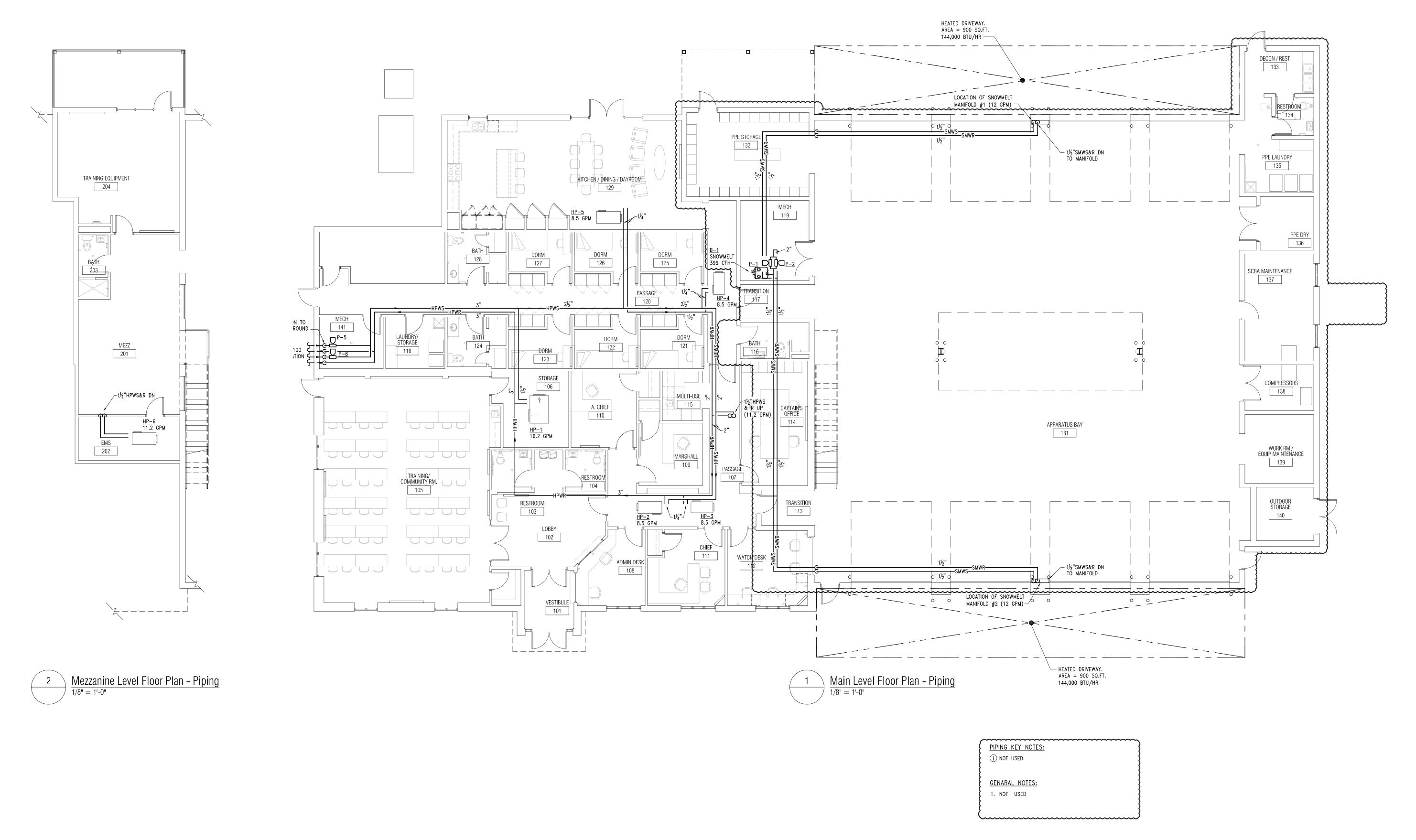
DRAWN BY

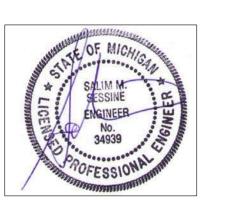
CHECKED BY

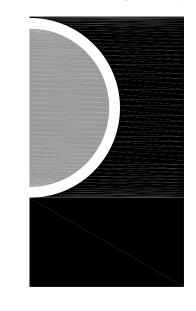
APPROVED BY

ROOF PLAN - HVAC

M2-02







PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600
F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



KEA DI VII

OWN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

Highland, IVII 4

PROJECT NO.

18-122A

| SCHEMATIC DESIGN | |
|---------------------|--|
| IDDING-CONSTRUCTION | |
| | |
| CONSTRUCTION | |
| CCD # 1 | |

DRAWN BY
MS

CHECKED BY

MS
APPROVED BY

ИS

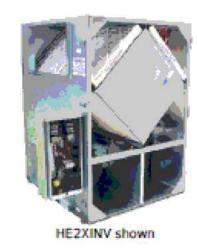
SHEET NAME

FLOOR PLANS -PIPING

SHEET NO.
M3-01

RENEWAIRE ERV-1 SCHEDULE WITH ELECTRIC HEATER

PROVIDE DEDICATE CIRCUIT FOR ELECTRIC HEATER PROVIDE DISCONNECT FOR ERV AND ELECTRIC HEATER



Specifications

Ventilation Type: Static plate, heat, and humidity

Typical Airflow Range: 500-2,200 CFM

AHRI 1060 Certified Core: Two L125-G5

OA Filters: Total Qty. 2, MERV 8: 20" x 20" x 2"

RA Filters: Total Qty. 2, MERV 8: 20" x 20" x 2"

Unit Weight: 363-583 lbs. (varies by option)

Configuration

 Unit Tag
 erv-1

 Model
 [HE-2X] HE-2X

 Core Type
 [J] G5

 Installation Location
 [IN] Indoor Unit

Airflow Orientation [V] Orientation V
Wall [S] Single (Standard)
Electrical Service [35] 208-230V / 3 Phase / 60 HZ
Fresh Air Motor [V] TEFC Belt Drive - 2 HP

Exhaust Air Motor [V] TEFC Belt Drive - 2 HP
Flow Control [-] No Dampers (Standard)
Unit Control [A] Motor Starters & Contactors (Standard)

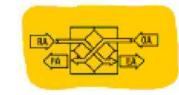
Shaft Grounding Rings No

Disconnect [N] Non Fused (Standard)
Control Option [3] Enhanced Controls with BACnet Factory Activation

Filter Monitor [-] Filter monitors are included with controls
Paint [-] None

Safety Listing [L] Listed

Airflow Orientation



Unit Accessories and Service Parts

Type Part Number
Electric Heater EK-1414008SCCHR--23-1SV-N

Description EK-1414008SCCHR--2

Quantity
3-15V-N 1

| EK-1414008SCCHR23- | 157 | -1 |
|--------------------|-----|----|
| | | |

| Fa | ns | | | | | | | | | |
|----|------|-----|-----------|---------|------|-----------|----------------------------|-----------------------|------------------|---------|
| | CEM | ECD | Elltore | Enn DDM | BHB | Elevation | Motors Protected by | Motor Starters | Motors Protected | by VFDs |
| | CFM | ESP | riiters | ran Kem | DHP | Elevation | Qty @ HP | FLA | Qty @ HP | FLA |
| FA | 1600 | 1 | 2" MERV-8 | 1382 | 1.05 | 627 | 2@2.0 | 6.6-5.8 | None | _ |
| EA | 1636 | 1 | 2" MERV-8 | 1394 | 1.08 | 027 | 20/2.0 | 0.0-3.0 | None | 77.63 |

Unit Electrical Data

| Volts | Hertz | Phase | MCA | МОР |
|---------|-------|-------|------|-----|
| 208-230 | 60 | 3 | 14.8 | 20 |

Specifications

Heater Type: Standard Features:

Electric Duct Heater
A disconnecting magnetic control contactor
per stage or each 48 Amp circuit within a
stage

Open-coil element

Control terminal board

Grounding lugs

Automatic limit switch for primary

Disconnect switch

overtemperature protection

Manual reset limit switch for secondary overtemperature protection

Non-adjustable airflow switch

Configuration

Heater Tag edh-1
Heater Series [EK] EK Electric Duct Heater
Width [14] Width
Height [14] Height
Heater Capacity
Mount [S] Slip-In (Standard)

Element Style [C] Open Coil (Standard)

Element Material [C] 60-20-20 Ni-Cr-Fe with Nickel-Plate Terminal Pins (Standard)

Airflow Orientation [H] Horizontal

Control Box Offset [R] Right Hand
Control Box Recessed [-] None
Control Box Dust Tight
Electrical Service [23] 208V / 3 Phase / 60 HZ
Power Fusing [-] None
Stage [1] Single Stage

Control Voltage [S] 24VAC
Control Type [V] SCR with Thermostat and Sensor
Pilot Light [N] None

Unit Accessories and Service Parts

No accessories for this unit

| P | erforma | ance | | | | | | | | |
|---|---------|---------|----------|----|-------|-------|-------|-------|-------|------|
| | CFM | Temp In | Temp Out | kW | Volts | Hertz | Phase | FLA | MCA | MOPD |
| | 1600 | 48°F | 63.75°F | 8 | 208V | 60 | 3 | 22.21 | 27.76 | 30 |
| | | | | | | | | | | |

| TAG | MANUFACTURER | MOUNTING | CFM | EXT. SP | ЕСМ | | COOLIN | IG | | HE | ATING | | GРM | El | ECTRICAL | . DATA | | EER | NOTES (ASSESSED |
|------|-------------------|--------------|---------|------------|-----------|--------------|-------------|--------------|--------------|----------|--------------|--------------|---------|-------|--------------------------|--------|------|------|-------------------|
| TAG | & MODEL No. | MOONTING | CTW | IN | FAN HP | MBH TOTAL | MBH SENS | EWT DEG F | LWT DEG F | мвн | EWT DEG F | LWT DEG F | GPM | VOLT | ELECTRIC HEAT (KW) | МСА | МОСР | EEK | NOTES/ACCESSORIES |
| HP-1 | TRANE EXH-070 | HORIZONTAL | 2090 | 0.4 | 1 | 76.7 | 57.2 | 45 | 55.4 | 63.3 | 45 | 38.9 | 16.2 | 208/3 | 6.5 | 32.3 | 50 | 36.4 | ABCDEFG |
| HP-2 | TRANE EXH-036 | HORIZONTAL | 1200 | 0.4 | 3/4 | 41.9 | 31.6 | 45 | 55.8 | 34.1 | 45 | 38.6 | 8.4 | 208/3 | 5 | 22 | 25 | 42.2 | ABCDEFG |
| HP-3 | TRANE EXH-036 | HORIZONTAL | 1200 | 0.4 | 3/4 | 41.9 | 31.6 | 45 | 55.8 | 34.1 | 45 | 38.6 | 8.4 | 208/3 | 5 | 22 | 25 | 42.2 | ABCDEFG |
| HP-4 | TRANE EXH-036 | HORIZONTAL | 1200 | 0.4 | 3/4 | 41.9 | 31.6 | 45 | 55.8 | 34.1 | 45 | 38.6 | 8.4 | 208/3 | 5 | 22 | 25 | 42.2 | ABCDEFG |
| HP-5 | TRANE EXH-036 | HORIZONTAL | 1200 | 0.4 | 3/4 | 41.9 | 31.6 | 45 | 55.8 | 34.1 | 45 | 38.6 | 8.4 | 208/3 | 5 | 22 | 25 | 42.2 | ABCDEFG |
| HP-6 | TRANE EXH-048 | HORIZONTAL | 1500 | 0.4 | 3/4 | 55.6 | 41.6 | 45 | 55.9 | 45.0 | 45 | 38.6 | 11.2 | 208/3 | 6.5 | 28.9 | 30 | 24.2 | ABCDEFG |
| | | | | | | | 1 | NOTES ANI | D ACCESS | ORIES DE | SIGNATIO | ON | | | | | | | |
| Α | FACTORY MOUNTE | ED CONTROL | | | | | | | | D . | 2" FILTE | :R | | | | | | | |
| В | PROVIDE VIBRATION | ON ISOLATION | HANGER | ? | | | | | | Е | BUILT-IN | I DISCON | NECT SV | VITCH | | | | | |
| С | DRAIN CONDENSA | ATE THRU OUT | SIDE WA | ALL | | | | | | F ; | 30% PRC | PYLENE | CLYCOL | | | | | | |
| | | | | | | | | | | G | BACNET | CARD | | | | | | | |

| | DOM | ESTIC | W | ATER | HEA | ATER SO | CHE | DULE | | |
|------|----------------------------|-------------|---|------------|------------|---------------------|---------|-------------------|--|--|
| | MANUFACTURER | | | CAPACITIE | :S | (2)PVC PIPE | D.T.I. | | | |
| TAG | & MODEL No. | LOCATION | STORAG | GE RECOVE | RY TD °F | INTAKE/EXHAUST Ø | BTU | NOTES/ACCESSORIES | | |
| GWH- | 1 A.O. SMITH BTH-199 | BOILER ROOM | 100 | 288 | 100 | 4" | 199,000 | ABCDEFGH | | |
| | | ١ | NOTES AI | ND ACCESSO | RIES DESIG | NATION | | | | |
| Α | P & T RELIEF TO | FD | E | EXPANSION | TANK | | | | | |
| В | FLOOR MOUNTED | | F | NATURAL GA | 18 | | | | | |
| С | POWER VENTED | | G 120V/1ø, DISCONNECT SWITCH | | | | | | | |
| D | BMS CONTACT FOR MONITORING | REMOTE | H CP-1 BY BELL&GOSSETT MODEL # EROCIRC XL55-45 ALL BRONZE. 20 GPM 30' OF HEAD, 208/1ø, .5 HP. INTERLOCK W/AQUASTAT (SET AT 110°F) | | | | | | | |

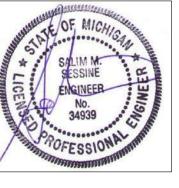
| | | | FA | N | sc | HE | DU | JLE | | | |
|---|---|------------------|----------------|--------|-------|--------|-------|-----------------------------|-----------|---------------------------------|-------------|
| TAG | MANUFACTURER | SERVICE | LOCATION | CFM | ESP | FAN | WHEE | | TRICAL | WEIGHT | NOTES/ |
| TAG | & MODEL NO. | SERVICE | LOCATION | CIW | "WC | KEY | TYPE | VOLTS /ø | HP | POUND | ACCESSÓRIES |
| EF-1 GREENHECK CUBE-200-15 APPERATUS PITCHED ROOF 6000 0.8 RMC BI 208/3 2 180 A B C D E | | | | | | | | | | | |
| EF-2 GREENHECK SQ-95-VG DECON REST INLINE DUCT 480 .4 ILC BI 120/1 1/10 45 C F H | | | | | | | | | | | |
| EF-3 | GREENHECK SQ-95-VG | COMPRESSOR RM | INLINE DUCT | 600 | .4 | ILC | BI | 120/1 | 1/10 | 60 | G H |
| EF-4 GREENHECK SQ-95-VG WORK RM INLINE DUCT 800 .4 ILC BI 120/1 3/4 64 G H | | | | | | | | | | | G H |
| | | | | | | | | | | | |
| | RMC — ROOF MOUI CLG — CEILING MO ILC — INLINE CEN SW — SIDE WALL | UNT | FUGAL | | | | | | | KEY: ARD CURVE /ARD INCLI | |
| | | | NOTES A | ND ACC | ESSOR | IES DE | SIGNA | ΓΙΟΝ | | | |
| A | 14"H PITCH ROOF CUR | В | | | | | G IN | ITERLOCK WIT HERMOSTAT S | H THERMO | STAT ADJUSTABLE | |
| B GRAVITY BACKDRAFT DAMPER H VIRATION ISOLATOR HANGING KIT | | | | | | | | | | | |
| С | FACTORY MOUNTED & \ | WIRED DISCON | NECT SWITCH | | | | E I | NTERLOCK W | ITH BMS / | MAU-1 | |
| D | BIRDSCREEN | | | | | | F | ON ALL THE | TIME | | |

| TAG | MANUFACTURER & MODEL No. | SERVICE | MOUNTING | OVERALL SIZE | NECK SIZE | NOTES/ ACCESSORIES |
|-----|-----------------------------|--------------------------------------|----------|--------------------------------------|-----------|-----------------------|
| S-1 | TITUS OMNI | SAD | LAY-IN | 24×24 | SEE PLAN | А |
| S-2 | TITUS OMNI | SAD | SURFACE | 12x12 | SEE PLAN | A |
| S-3 | TITUS 272RL | SAD | SURFACE | SEE PLAN | SEE PLAN | A B |
| S-4 | | | | | | NOT USED |
| R-1 | 50F | RAR | LAY-IN | 24×24 | | A |
| R-2 | TITUS 50F | RAR | LAY-IN | 12x24 | | A |
| R-3 | TITUS 25RL | RAR | SURFACE | SEE PLAN | | А |
| E-1 | TITUS 25RL | RAR | SURFACE | SEE PLAN | | А |
| T-1 | TITUS 350 RL | TAG | SURFACE | SEE PLAN | | А |
| | | G SUPPLY DIFFUSE G OR WALL TRANSF | | RAG — CEILING OR EAG — CEILING OR | | |

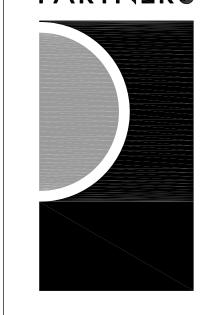
| | | | GAS | | RED E | | | SCH | EDU | LE | | |
|-------------|---------------------------|---------------|--------------|----------------------|-------------|--------------|------------|-----------|------|-----------|----------|-----------------------|
| - 10 | MANUFACTURER | 050,405 | 100171011 | | TVD5 | INPUT CFH | OUTPUT | SUPPLY | TD | ELECTI | RICAL | NOTES /A SOFESSORIES |
| TAG | & MODEL NO. | SERVICE | LOCATION | | TYPE | MIN/MAX | MBH | *F | •F | VOLTS | FLA | NOTES/ACCESSORIES |
| | | | | | | | | | | | | |
| B-1 | THERMAL SOLUTIONS APX425C | SNOW MELT | MECH ROOM | Н | OT WATER | 80/399 | 375 | 160 | 30 | 120/1 | 10 | A B C D E F G H I G K |
| ~~ | | | | ' | NOTE | S AND AC | CESSORIE | S DESIGNA | TION | | | |
| A | CONDENSING TYPE | | | F | 4"CONCRET | E PAD | | | К | DISCONNEC | CT SWITC | Н |
| В | RELIEF VALVE DRAIN TO | FD | | G | 4 VENT, 4 | INTAKE; AL2 | 29-4C MATE | RIALS | L | ALTERNATE | : # 5 | |
| С | BOILER PUMP SEE SCHE | R EACH BOILER | Н | CONDENSAT | E NEUTRALIZ | ZER DRAIN | | | | | | |
| D | PROVIDE SINGLE POWER | | I | BACNET CA | RD | | | | | | | |
| E | 5:1 TURNDOWN | | G | 30% PROPYLENE GLYCOL | | | | | | | | |

| T40 | MANUFACTURER | LOCATION | SYSTEM | TYPE | TYDE IMPELLER | | CITIES | | MOTOR DAT | 4 | NOTES/ACCESSORIES |
|------------|-------------------------------|--------------------|--------------------------|-----------|---------------|-----------|-----------|-----|-----------|------|--------------------|
| TAG | & MODEL No. | LOCATION | SERVED | | IN | GPM- | HEAD | HP | VOLTS | RPM | NOTES/ ACCESSORIES |
| | | | | | | | | | | | } |
| P-1 P-2 | BELL & GOSSETT E-90-1.5AB | MECH ROOM | SNOW MELT | IN LINE | 5.5 | 24 | 30 | 3/4 | 120/1 | 3250 | A B C D |
| P-5 P-6 | BELL & GOSSETT E-90-1.5AAB | LAUNDRY STORAGE | GEO-THERMAL HEAT PUMP | IN LINE | 5 | 61 | 100 | 5 | 208/3 | 3600 | ACDEF |
| BP-1 | BELL & GOSSETT PL-55 | MECH ROOM | B-2 | IN LINE | | 25 | 20 | 2/5 | 120/1 | 3250 | A B C D |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | NOTES A | AND ACCES | SORIES DES | SIGNATION | | | | | |
| Α | 30% PROPYLENE GLYCO |)L | | D | BACNE | ET CARD | | | | | |
| В | INTERLOCK WITH BOILE | र | | E | VFD | | | | | | |
| С | DISCONNECT SWITCH | | | F | SUSPE | END FROM | I STRUCTU | RE | | | |

| | GA | AS IN | FRAR | ED | HEA | TER | R S | СН | EDU | JLE | |
|------------------------|-----------------------------|------------------|------------------|-----------------|------------|---------|-------------|------------|--------|-------|--------------------|
| TAG | MANUFACTURER | AREA | REFLECTIVE | INTAKE/ FLUE | LENGTHS | G | SAS DAT | ΓΑ | ELECTR | RICAL | NOTES/ACCESSORIES |
| TAG | MANUFACTURER & MODEL No. | SERVED | PATTERN ANGLE | SIZE | (FT) | TYPE | MBH HIGH | MBH LOW | VOLTS | AMPS | NOTES/ ACCESSORIES |
| IRH-1 THRU RH-10 | RE-VERBER-RAY HL3-20-75 | APPARATUS BAY | 30 | 4" | 20 | NAT | 75 | 50 | 120 | 4.8 | ABCDEFG |
| | | | NOTE: | S AND A | .CCESSORIE | S DESIG | NATION | | | | |
| A | TWO STAGE OPE | RATION | | | F 4"SI | DE WALL | . VENT | KIT | | | |
| В | LOW INTENSITY | | | | G MOU | NTING C | HAIN K | IT | | | |
| С | ONE THERMOSTA | T FOR ALL | | | | | | | | | |
| D | MOUNTING @ 16 | ' AFF | | | | | | | | | |
| E | UNIT MOUNTED I | DISCONNECT | | | | | | | | | |



PARTNERS



PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600
F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



KEY PLAN

OWN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

CONSTRUCTION

ISSUES / REVISIONS

SCHEMATIC DESIGN 01-28-2020
BIDDING-CONSTRUCTION 03-27-2020

05-04-2020

CCD # 1 06-03-2020

DRAWN BY
MS

CHECKED BY

APPROVED BY

SHEET NAME

MECHANICAL

SCHEDULES

SHEET NO. M4-01

H:\ACAD\FILES\75\75810 - Highland Twp FS-1\CAD\MECH\75810-M4-01-Schedules.dwg Thu, 04 Jun 2020 - 8:33am

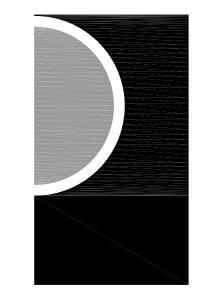
| | | | | | PAC | KAGED | AIR CO | ONDITION | ER UN | NIT SCHE | DULE | | | | |
|--------|---|------------|------------|-------------------|------------|----------|----------------|---------------------------------|----------|-------------------------------|------------|----------------|---------------------|------------|--------------------|
| INDOOR | INDOOR | WEIGHT | OUTDOOR | OUTDOOR | WEIGHT | LOCATION | SUPPLY FAN | REFRIGERANT | TOTAL | INDOOI ELECTRIC | | | OUTDOOR ECTRICAL | | NOTES/ACCESSORIES |
| TAG | MODEL NO. | (LBS) | TAG | MODEL NO. | (LBS) | LOCATION | (CFM) | REFRIGERANT | (мвн) | VOLTS/PHASE | MCA | VOLTS/PHASE | MCA | моср | NOTES/ ACCESSORIES |
| AC-1 | MITSUBISHI PKA-A18HA | | | | | | | | | | | | 13.0 | 15 | ABCDEFGI |
| | | | | | | | | | | | | | | | |
| | | | | | | NOTES AN | ND ACCESSORIES | S DESIGNATION | | | | | | | |
| A | ACR REFRIGERANT L | INE SET. | | | | | E PROVID | E CONDENSATE | PUMP AND | DRAIN TO OPEN S | SITE DRAII | N/FLOOR DRAIN. | ı | BACNET CAR | D |
| В | B PROVIDE ELECTRICAL DISCONNECT. F INDOOR UNIT POWERED FROM OUTDOOR UNIT. | | | | | | | | | | | | | | |
| С | C INSULATE ALL PIPING. G LOW AMBIENT CONTROL, WIND BAFFLES, OPERATION TO 0°F | | | | | | | | | | | | | | |
| D | PROVIDE ALL NECES | SARY CONTI | ROLS AND A | CCESSORIES FOR PR | ROPER OPER | ATION. | | BASED ON ENGI INATE WITH OWN | | SSUMPTIONS. ACT ROOM LOADS | | | | | |

| | | WARI | 1 4 | AIR | FU | RN | ANC | E | sc | HE | υc | LE | |
|-----|-----------------------------|----------------|----------|-------|---------|---------|--------------------|---------|---------------|----------|--------|-------|-----------------------|
| TAG | MANUFACTURER & MODEL No. | AREA SERVED | AFLUE | TYPE | "ESP | СЕМ | MIN. O.A. (CFM) | | DATA | ELE | CTRICA | \L | NOTES/ ACCESSORIES |
| TAG | & MODEL No. | SERVED | AILOL | 11112 | Loi | | (CFM) | TYPE | INPUT MBTU | VOLTS | НР | FLA | ACCESSORIES |
| F-1 | TRANE S9B1C100 | SEE PLAN | 95 | UP | .5 | 1200 | 120 | NAT | 100 | 120/1 | 1/2 | 10.66 | ABCDEFG |
| | | | | | | | | | | | | | |
| | | | | NC | TES ANI |) ACCES | SORIES DE | SIGNATI | ON | | | | |
| Α | DISCONNECT SW | TITCH | | | G | PROVIDE | HANGING | KIT WI | TH VIBRA | ATION IS | OLATOR | S | |
| В | SIDE WALL CON | CENTRIC TERM | IINATION | KIT | | | | | | | | | |
| С | THROWAWAY FIL | TER (25%) | | | | | | | | | | | |
| D | PROGRAMMABLE | THERMOSTAT | | | | | | | | | | | |
| Е | FIRESTAT UNDER | R 2000 CFM | | | | | | | | | | | |
| F | SUSPEND FROM | STRUCTURE | | | | | | | | | | | |

| | | | | DRYER | R SCHEDULE | | | | |
|---|---------|-----------------------|------------|-------|-----------------------------|------------|----------|------|-------------------|
| | TAG | .G MANUFACTURER PROCE | | | MOISTURE REMOVAL CAPACITY @ | | ELECTRIC | 1 | NOTES/ACCESSORIES |
| | | & MODEL NO. | (CFM) | (CFM) | 75° F & 50% RH (LBS.HR) | VOLTAGE KW | | AMPS | |
| |)U-1 | MUNTER HC-300 | 300 100 | | 7.9 | 208/3 | 6 | 19 | A B C D |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | NOTES AND ACCESSORIES DE | SIGNATION | | l | 1 |
| Α | HANGING | S KIT WITH VIBRATIO | N ISOLATOR | | | | | | |
| В | DISCON | NECT SWITCH | | | | | | | |
| С | HUMIDIT | Y SENSOR | | | | | | | |
| D | CONDEN | SATE TO FD | | | | | | | |

| | ELECTR | RIC C | ABINE. | T UNI | T HEA | TER : | SCHE | DULE | • | | | | |
|----------------------------------|--|----------|----------|-----------------------|------------|-----------|-----------|------|---------------------|--|--|--|--|
| T.A.C. | MANUFACTURER | AREA | MOUNTING | LENGTH | BTU/HR | ELE | CTRICAL | DATA | NOTES (4.00F000DIES | | | | |
| TAG | & MODEL No. | SERVED | MOUNTING | LENGIH | віо/пк | WATTS | VOLT | AMPS | - NOTES/ACCESSORIES | | | | |
| ECUH-1 | 1 MARKEL CORR WR | | 10230 | 3000 | 208/3 | | A C E | | | | | | |
| | | | | | | | | | | | | | |
| | PD – PEDIS FL – FLOOF WL WALL WR WALL | — | | MOUNTING - FULLY R | ECESSED CE | ILING | | | | | | | |
| | | | NOT | ES AND AC | CESSORIES | DESIGNATI | ON | | | | | | |
| А | INTERGRAL THERMOSTA | ΛT | | | Е | HEAVY DU | TY GRILLE | | | | | | |
| В | REMOTE THERMOSTAT | | | | | | | | | | | | |
| С | UNIT MOUNTED DISCO | NNECT SW | /ITCH | | | | | | | | | | |
| C UNIT MOUNTED DISCONNECT SWITCH | | | | | | | | | | | | | |

| | | ELECT | RIC UNI | ГНЕ | ATER | R SCH | EDULE | | |
|--------|-----------------------|------------|-------------|----------|----------|---------|--------------|----------|--------------------|
| TAG | MANUFACTURER | AREA | MOUNTING | CFM | мвн | ELECTRI | CAL DATA | NO OF | NOTES/ACCESSORIES |
| 1710 | & MODEL No. | SERVED | | | | KW | VOLT | FANS | NOTES/ ACCESSORIES |
| ECUH-1 | MARKEL 5100 SERIES | SEE DWG | SUSPENDED | 350 | 17.0 | 5.0 | 208/3 | 1 | АВС |
| ECUH-2 | MARKEL 5100 SERIES | SEE DWG | SUSPENDED | 350 | 17.0 | 5.0 | 208/3 | 1 | АВС |
| | | | | | | | | | |
| | | NOTES | AND ACCESSO | ORIES DE | SIGNATIO | N . | | | |
| А | REMOTE THERMOS | TAT | | | С | MOUNT A | S HIGH AS PO | SSIBLE, | HANGING KIT |
| В | UNIT MOUNTED D | SCONNECT S | WITCH | | | | | | |



PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600
F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



KEY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

CONSTRUCTION

18-122A

ISSUES / REVISIONS

SCHEMATIC DESIGN 01-28-2020

BIDDING-CONSTRUCTION 03-27-2020

05-04-2020

DRAWN BY

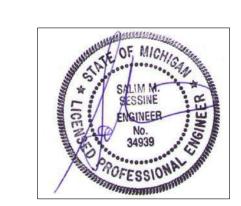
MS CHECKED BY

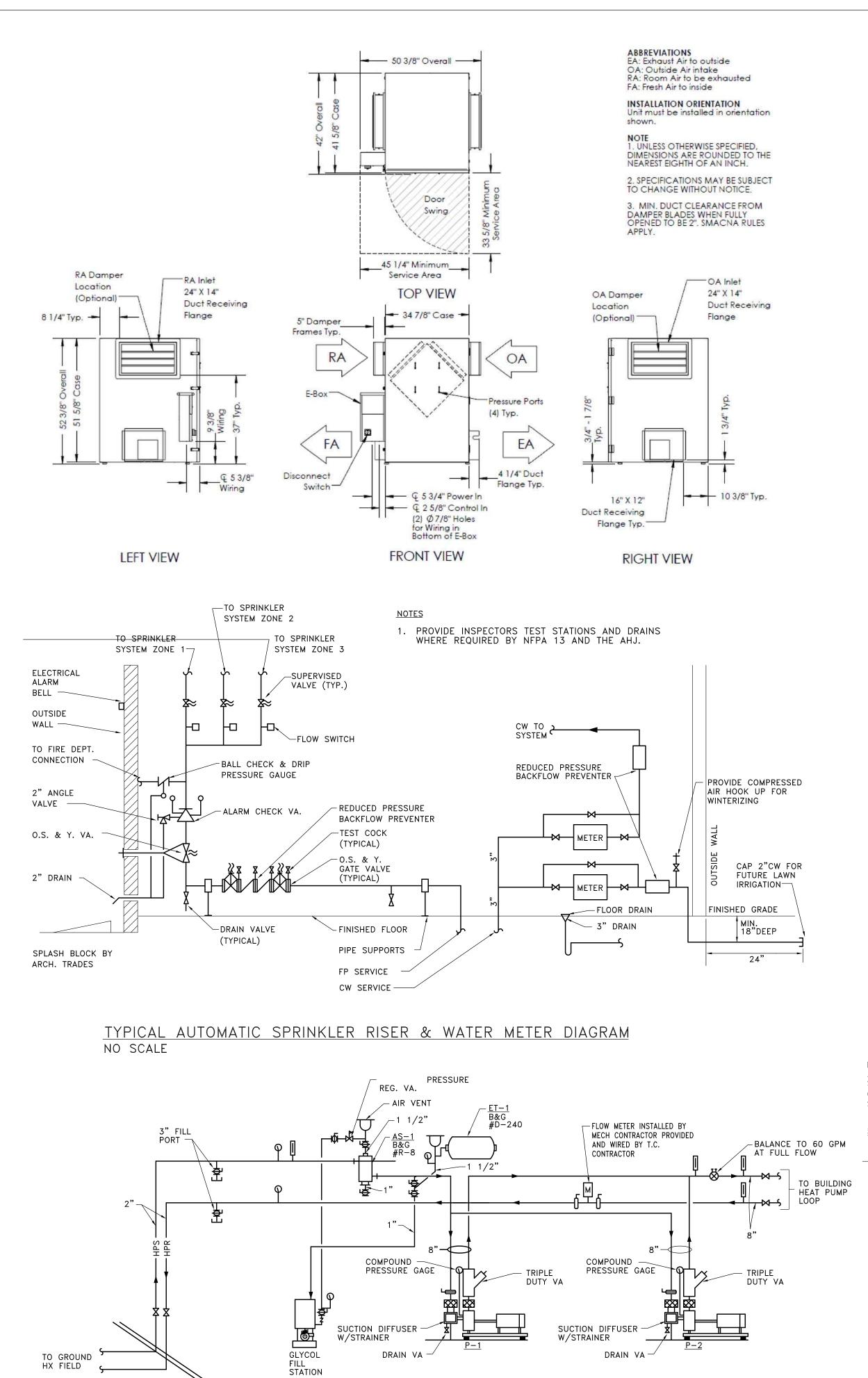
MS
APPROVED BY

MS

MECHANICAL SCHEDULES

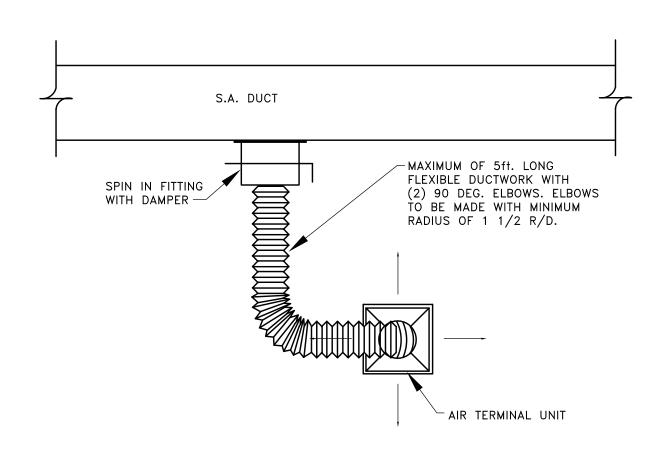
sheet NO. M4-02



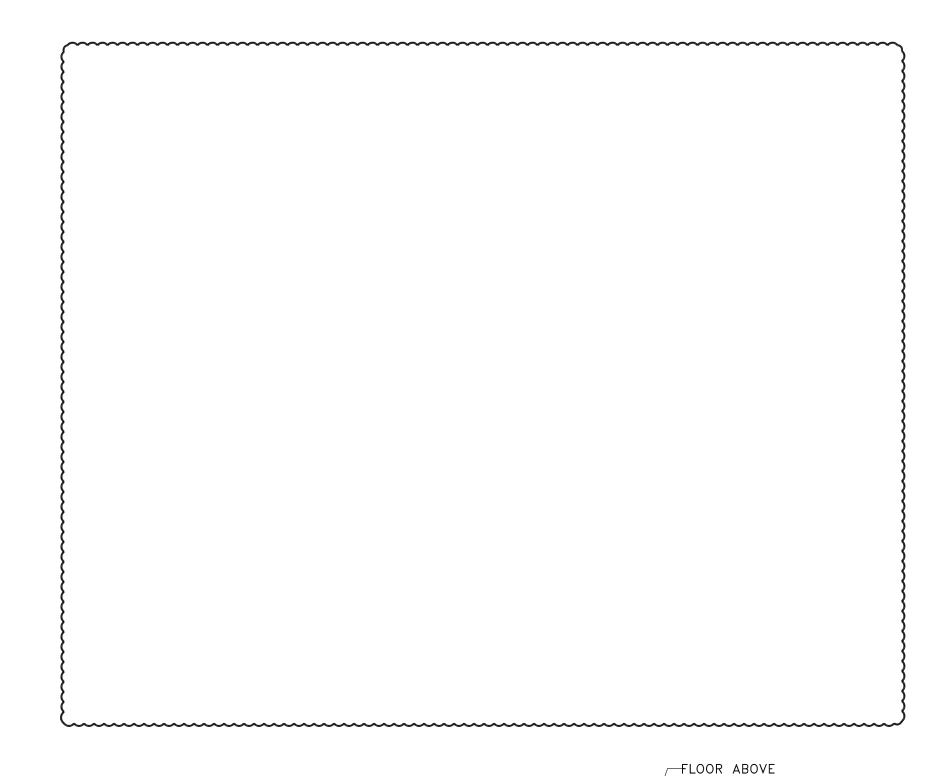


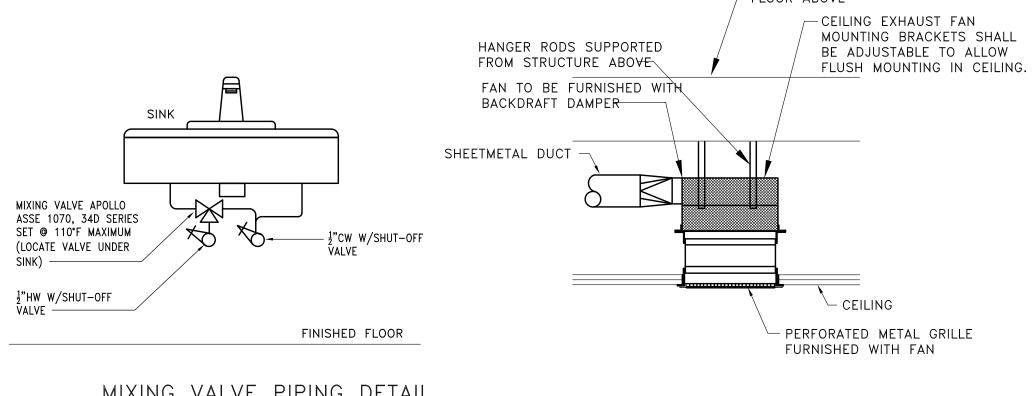
HEAT PUMP FLOW DIAGRAM

NO SCALE



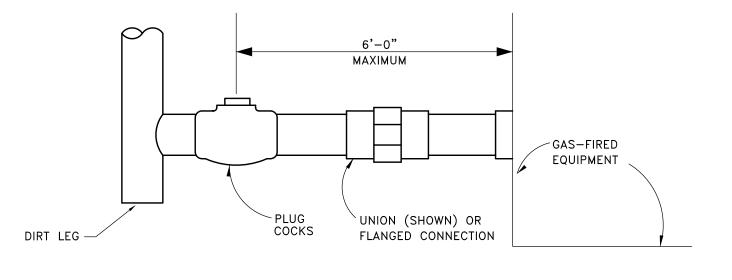
FLEXIBLE DUCT CONNECTION DETAIL NO SCALE



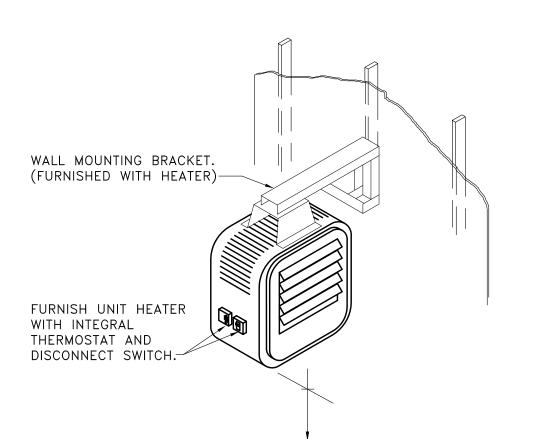


MIXING VALVE PIPING DETAIL
NO SCALE

CEILING EXHAUST FAN DETAIL
NO SCALE

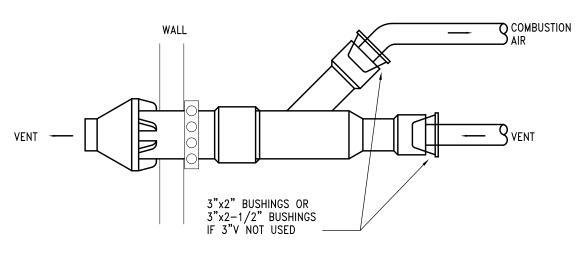


TYPICAL GAS PIPING CONNECTION NO SCALE

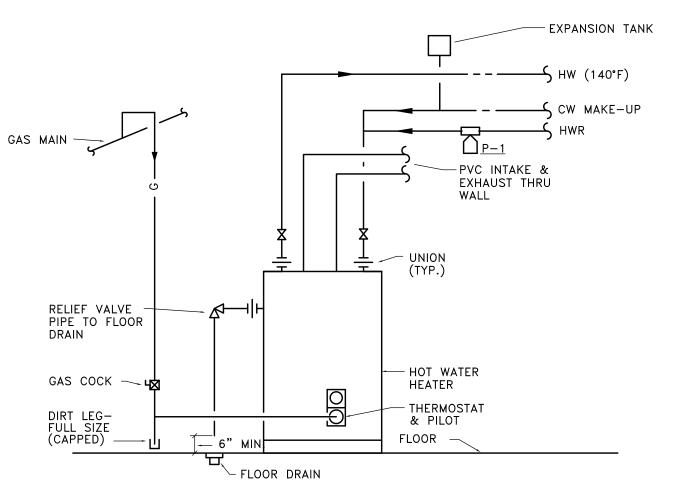


MOUNT AS HIGH AS POSSIBLE

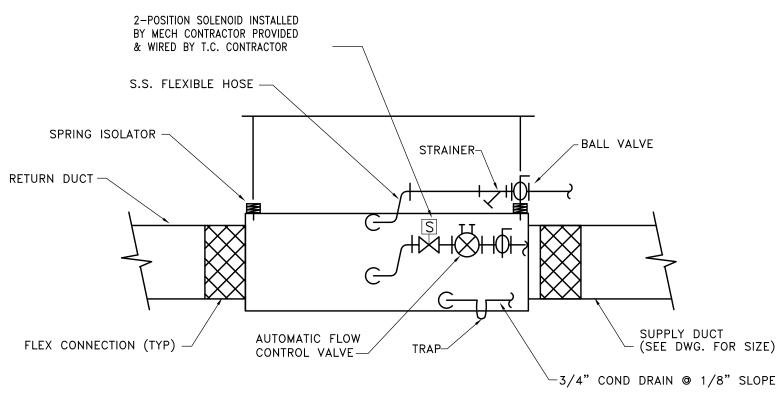
UNIT HEATER DETAIL
NO SCALE



CONCENTRIC VENT KIT (WALL INSTALLATION)
NO SCALE



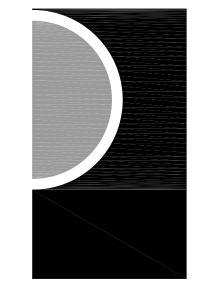
DOMESTIC WATER HEATER PIPING SCHEMATIC NO SCALE



DETAIL OF HORIZONTAL HEAT PUMP INSTALLATION NO SCALE



PARTNERS



PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600
F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



KEY PLAN

WNIED

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd.

Highland, MI 48357

18-122A

PROJECT NO.

| ISSUES / REVISIONS | |
|----------------------|-----------|
| SCHEMATIC DESIGN | 01-28-20 |
| BIDDING-CONSTRUCTION | 03-27-202 |

| 00 00 000 |
|-----------|
| 06-03-202 |
| |

| DRAWN BY | | |
|----------|--|--|

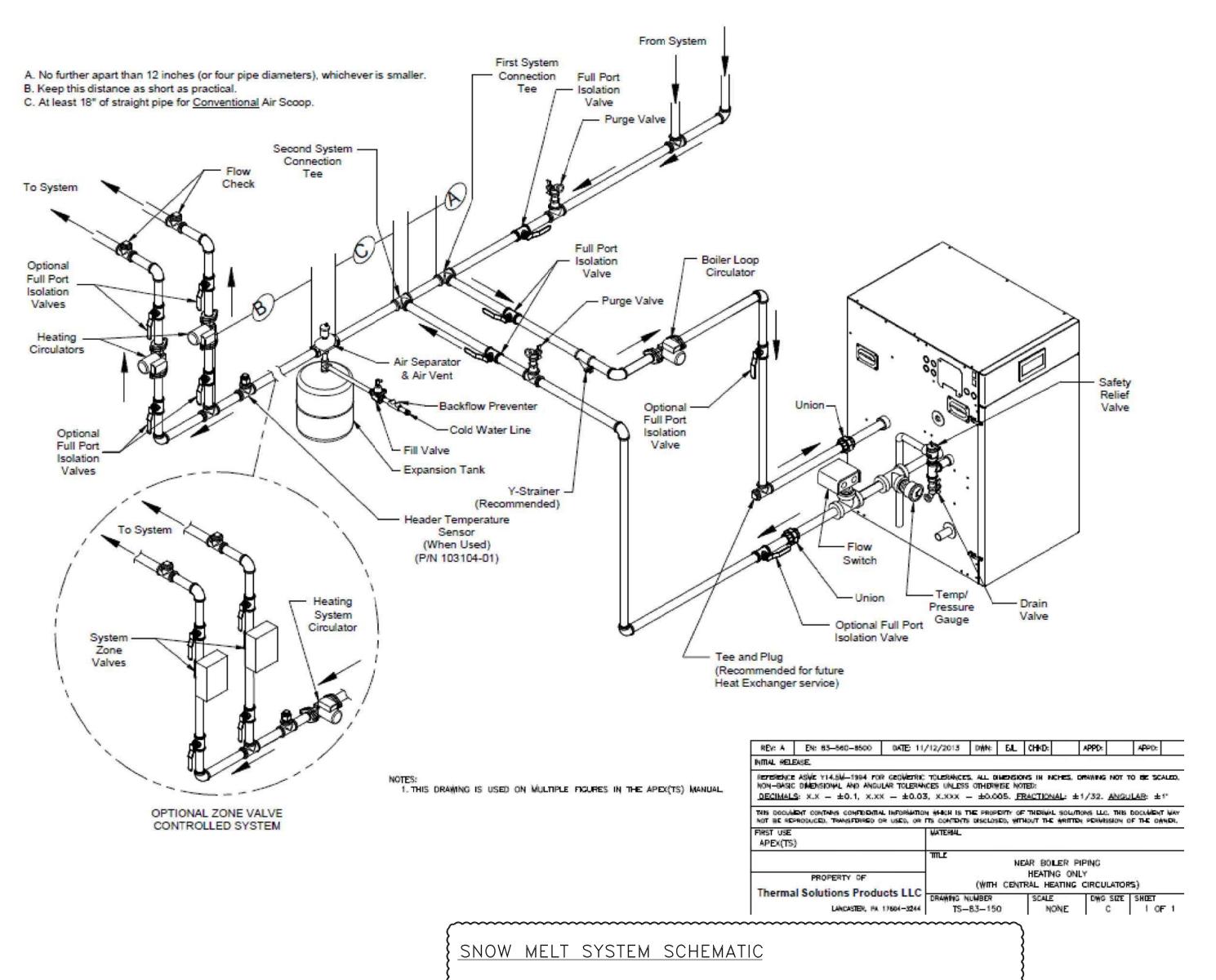
MS CHECKED BY

APPROVED BY

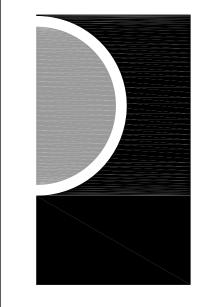
SHEET NAME

MECHANICAL DETAILS

SHEET NO. **M5-01**







PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

OONOUL TANK

F 586.469.3607



KEY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| ISSUES / REVISIONS | |
|----------------------|----------|
| SCHEMATIC DESIGN | 01-28-20 |
| BIDDING-CONSTRUCTION | 03-27-20 |
| | |
| | |
| CONSTRUCTION | 05-04-20 |

DRAWN BY
MS

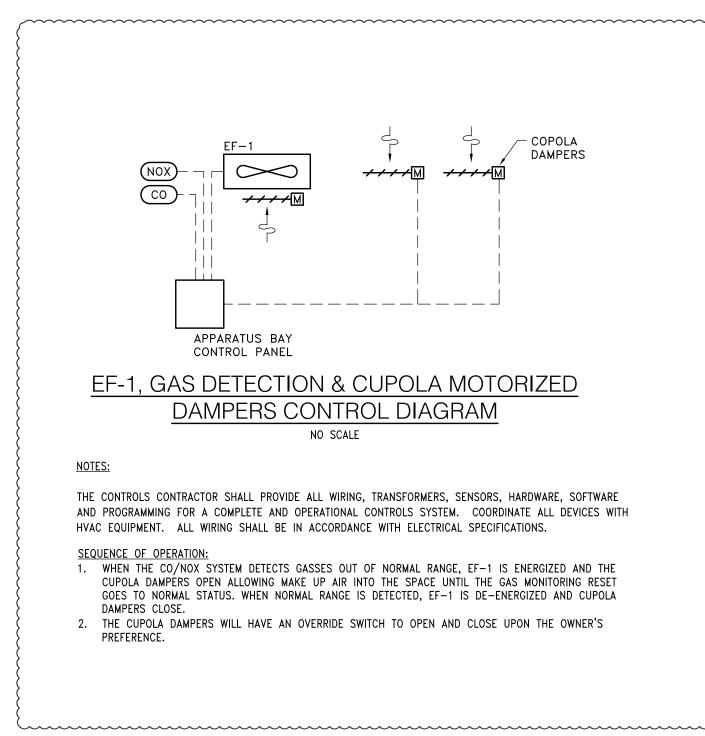
CHECKED BY MS

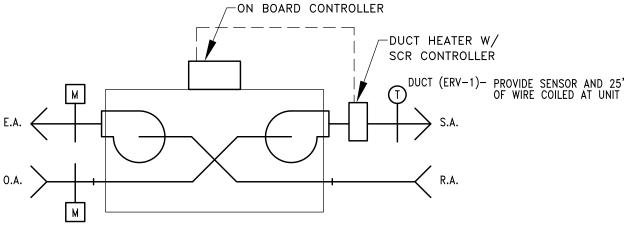
APPROVED BY
MS
SHEET NAME

MECHANICAL DETAILS

SHEET NO.
M5-02

·······

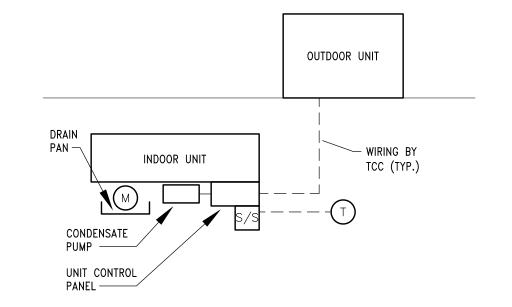




SEQUENCE OF CONTROLS

- 1. ERV IS STARTED THROUGH AN ON BOARD MICROPROCESSOR CONTROL.
- 2. DUCT HEATER SCR CONTROLLER MODULATES TO MAINTAIN SET DISCHARGE.

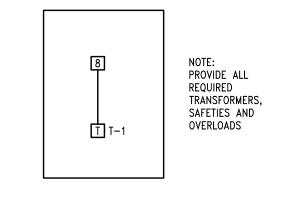
ERV-1 CONTROL DIAGRAM



PACKAGED SPLIT SYSTEM CONTROL DIAGRAM NO SCALE

NOTES:

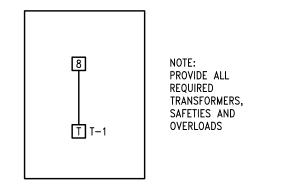
- 1. TEMPERATURE CONTROLS CONTRACTOR (TCC) SHALL PROVIDE FIELD WIRING BETWEEN INDOOR UNIT CONTROLS AND THE REMOTE OUTDOOR UNIT. REFER TO MECH FLOOR PLANS FOR LOCATION OF UNITS.
- 2. TC CONTRACTOR SHALL COORDINATE WITH MANUFACTURER FOR EXACT TERMINATIONS AND WIRING REQUIREMENTS.
- 3. CONDENSATE PUMP HAS SELF CONTAINED LEVEL CONTROL. PUMP RECEIVES INDEPENDENT POWER.



ELECTRIC UNIT HEATER CONTROL DIAGRAM NO SCALE

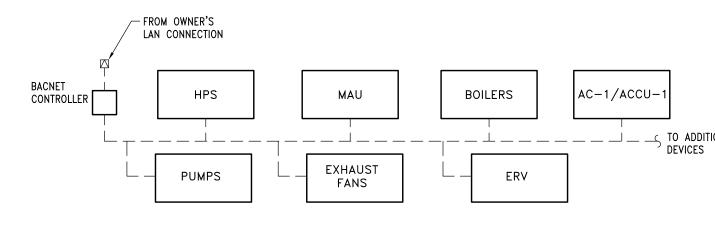
SEQUENCE OF OPERATION:

1. LOW VOLTAGE THERMOSTAT STARTS FAN AND HEATER WHEN CALLED FOR.

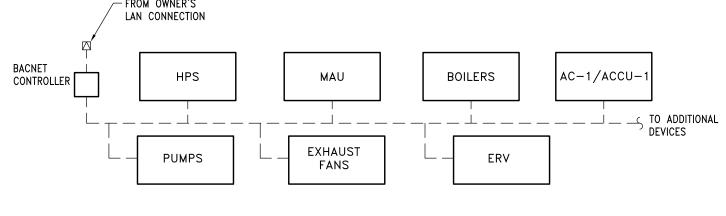


ELECTRIC CABINET UNIT HEATER CONTROL DIAGRAM NO SCALE

SEQUENCE OF OPERATION: 1. LOW VOLTAGE THERMOSTAT STARTS FAN AND HEATER WHEN CALLED FOR.



DDC ARCHITECTURE



GAS FIRED INFRARED HEATER CONTROL DIAGRAM

NO SCALE

1. ONE LOW VOLTAGE THERMOSTAT STARTS (10)HEATERS WHEN CALLED FOR

SEQUENCE OF OPERATION:

PROVIDE ALL

TRANSFORMERS,

SAFETIES AND

OVERLOADS

REQUIRED

MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

65 MARKET STREET

PARTNERS

Statement of Intellectual Property The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

PARTNERS in Architecture, PLC

© Copyright 2019

CONSULTANT



KEY PLAN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| 01-28-202 |
|-----------|
| 03-27-202 |
| |
| 05-04-202 |
| 06-03-202 |
| 06-03-20 |
| |

DRAWN BY

CHECKED BY

APPROVED BY

SHEET NAME

TEMPERATURE CONTROLS

SHEET NO. M6-01



HOT WATER HEATING SEQUENCE OF OPERATION:

NOTE: ALL SETPOINTS AND TIME INTERVALS SETPOINTS DESCRIBED IN THE SEQUENCE SHALL BE ADJUSTABLE BY SYSTEM OPERATORS (CREATE REQUIRED VIRTUAL POINTS).

HOT WATER HEATING SYSTEM CIRC PUMPS (P-1 & P-2) / (P-3 & P-4) SHALL HAVE START/STOP CAPABILITY FROM THE DDC SYSTEM. THE HAND-OFF-AUTO SWITCH SHALL BE KEPT IN THE "AUTO" POSITION. WHEN OA TEMP IS 55°F OR BELOW, ONE OF TWO SECONDARY PUMPS SHALL BE ACTIVATED BY THE DDC TO OPERATE CONTINUOUSLY. THE OTHER WILL SERVE AS STANDBY.

THE DIFFERENTIAL PRESSURE SENSOR (DPT-1) THRU THE DDC MODULATES THE ACTIVE PUMP VARIABLE SPEED DRIVE TO MAINTAIN THE DESIRED SYSTEM DIFFERENTIAL PRESSURE AS DETERMINED DURING SYSTEM BALANCING.

DDC SHALL ALTERNATE PUMP OPERATION BASED ON RUNTIME HOURS OR AT THE BEGINNING OF EACH MONTH — OPERATOR SELECTABLE.

DDC SHALL MONITOR OPERATING STATUS OF EACH PUMP THRU ITS RESPECTIVE CURRENT SWITCH. UPON PUMP FAILURE, DDC SHALL ACTIVATE A FAILURE ALARM AND AUTOMATICALLY START THE STANDBY PUMP.

THE DDC SYSTEM ENABLES THE MASTER SEQUENCING PANEL WHEN THE OA TEMP IS 55°F OR BELOW. ABOVE 55°F THE DDC DISABLES THE SYSTEM

THE MASTER SEQUENCING PANEL SHALL ACTIVATE OR DEACTIVATE BOILERS AND BOILER STAGES AS REQUIRED TO MAINTAIN HWH SUPPLY TEMP (T-1) SETPOINT.

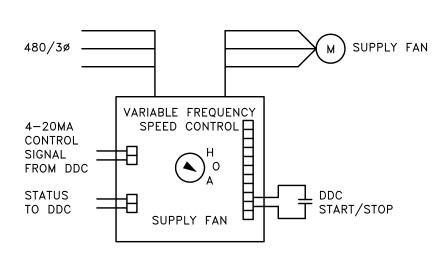
THE MASTER SEQUENCING PANEL SHALL INCLUDE OPERATOR SELECTABLE BOILER LEAD/LAG OPERATION OR FIRST

WHENEVER A BOILER CIRCUIT IS ACTIVATED, ITS RESPECTIVE PRIMARY CIRCULATION PUMP SHALL BE ACTIVATED BY FACTORY WIRED PUMP RELAY. WHENEVER A BOILER IS DEACTIVATED, A TIME DELAY RELAY SHALL KEEP THE PUMP RUNNING FOR 10 MINUTES (ADJUSTABLE) TO DISSIPATE HEAT FROM THE DEACTIVATED BOILER.

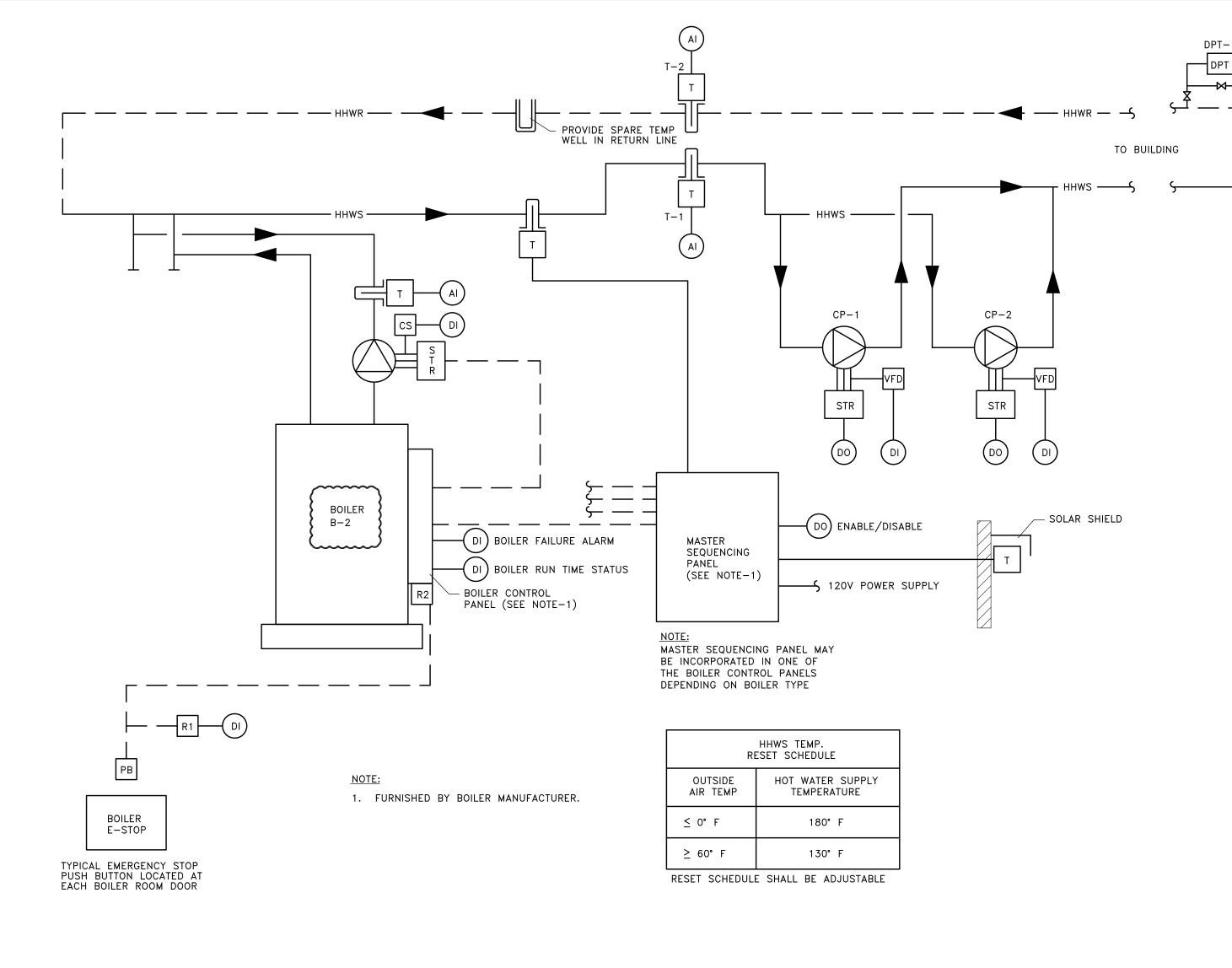
WHEN A BOILER IS ACTIVATED, BOTH SETS OF COMBUSTION AIR DAMPERS SHALL BE OPENED THRU HARDWIRED INTERLOCK. WHEN THE DAMPERS OPEN, END SWITCHES MAKE, AND THE BOILERS ARE ALLOWED TO START.

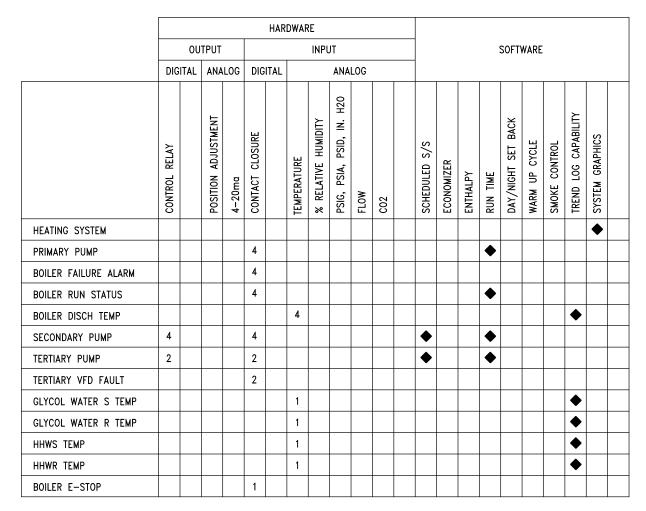
DDC SHALL MONITOR BOILER RUN STATUS AND BOILER FAILURE ALARM AT EACH BOILER THROUGH DRY CONTACTS AVAILABLE IN THE BOILER CONTROL PANEL. BOILER FAILURE MONITORING SHALL INCLUDE "LOW WATER" AND "FLAME FAILURE".

THE EMERGENCY STOP PUSH BUTTON(S), LOCATED AT EACH BOILER ROOM DOOR(S), DEACTIVATES EACH BOILER WHENEVER THE PUSH BUTTON IS ACTIVATED. THE BOILERS REMAIN DE-ACTIVATED UNTIL THE PUSH BUTTON(S) IS MANUALLY RESET.



TYPICAL PUMP VFD
ELECTRIC SCHEMATIC

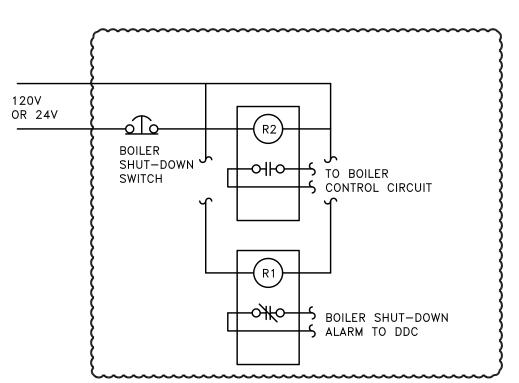




ROOFTOP UNIT POINTS ARE OBTAINED VIA BACNET WORKS INTERFACE. COORDINATE WITH RTU MANUFACTURER.

GENERAL NOTES

- 1. 120 VOLT POWER FROM STARTER TRANSFORMER
 2. DENOTES TERMINAL AT STARTER
 3. □ DENOTES TERMINAL AT CONTROL PANEL
- 4. DENOTES FIELD WIRING
 5. DENOTES WIRING IN STARTER OR IN CONTROL PANEL
 6. O DENOTES TERMINAL AT DEVICE



REMOTE BOILER EMERGENCY SHUTDOWN WIRUNG

NOTES:

- 1. LOCATE A SWITCH AT EACH ENTRANCE JUST INSIDE BOILER ROOM. REFER TO FLOOR PLANS FOR QUANTITY AND LOCATION OF ROOM ENTRANCES. COORDINATE SWITCH LOCATION WITH ALL OTHER TRADES.
- 2. TEMPERATURE CONTROLS (TCC) SHALL PROVIDE SIGN (NAME PLATE) TO BE PLACED DIRECTLY ABOVE OR BELOW EACH PUSH BUTTON SWITCH THAT READS: "EMERGENCY BOILER SHUTDOWN".
- 3. TCC SHALL SUPPLY POWER TO CONTROL RELAY FROM EMERGENCY POWER CIRCUIT. REFER TO ELECTRICAL PANEL SCHEDULES AND COORDINATE WITH ELECTRICAL CONTRACTOR AS NECESSARY.
- 4. TCC SHALL WIRE BOILERS' CONTROL CIRCUITS (POWER FROM SECONDARY SIDE OF CONTROL TRANSFORMERS) THRU NORMALLY OPEN RELAY CONTACTS. TCC SHALL COORDINATE EXACT WIRING AND TERMINATION REQUIREMENTS WITH BOILER MANUFACTURER.
- 5. TCC SHALL MOUNT SHUTDOWN CONTROL RELAYS AT RESPECTIVE BOILER CONTROL PANELS.
- 6. TCC SHALL PROVIDE PUSH BUTTON SWITCH (PUSH TO LATCH TURN KEY OR PULL TO RELEASE) WITH MUSHROOM HEAD OPERATOR AND NORMALLY CLOSE (NC) CONTACTS. PROVIDE WITH PROPER ENCLOSURE.

SEQUENCE OF OPERATION:

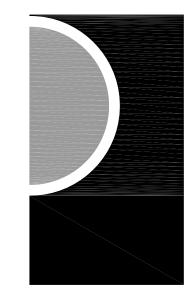
UNDER NORMAL OPERATING CONDITIONS THE CIRCUIT SHALL BE ENERGIZED AND THE RELAYS NORMALLY OPEN (NO) CONTACTS SHALL BE CLOSED. WHEN A SWITCH IS PUSHED (LATCHED) THE RELAY CONTACTS SHALL OPEN AND INTERRUPT EVERY BOILER'S CONTROL CIRCUIT. WHEN SWITCH IS RELEASED, THE RELAY SHALL BE ENERGIZED AND ITS NORMALLY OPEN CONTACTS SHALL CLOSE, ENERGIZING EVERY BOILER'S CONTROL CIRCUIT.

DDC SHALL ACTIVATE AN ALARM WHEN REMOTE SWITCH HAS BEEN PUSHED.

ZED AND THE RELAYS NORMALLY OPEN (NO) THE RELAY CONTACTS SHALL OPEN AND SED, THE RELAY SHALL BE ENERGIZED AND ITS CONTROL CIRCUIT. CHED.



PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

F 586.469.3607

CONSULTANT



KEY PLAN

)WNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| ISSUES / REVISIONS | |
|----------------------|-----------|
| SCHEMATIC DESIGN | 01-28-202 |
| BIDDING-CONSTRUCTION | 03-27-202 |
| | |
| CONSTRUCTION | 05-04-202 |

06-03-2020

DRAWN BY

CCD # 1

CHECKED BY

APPROVED BY

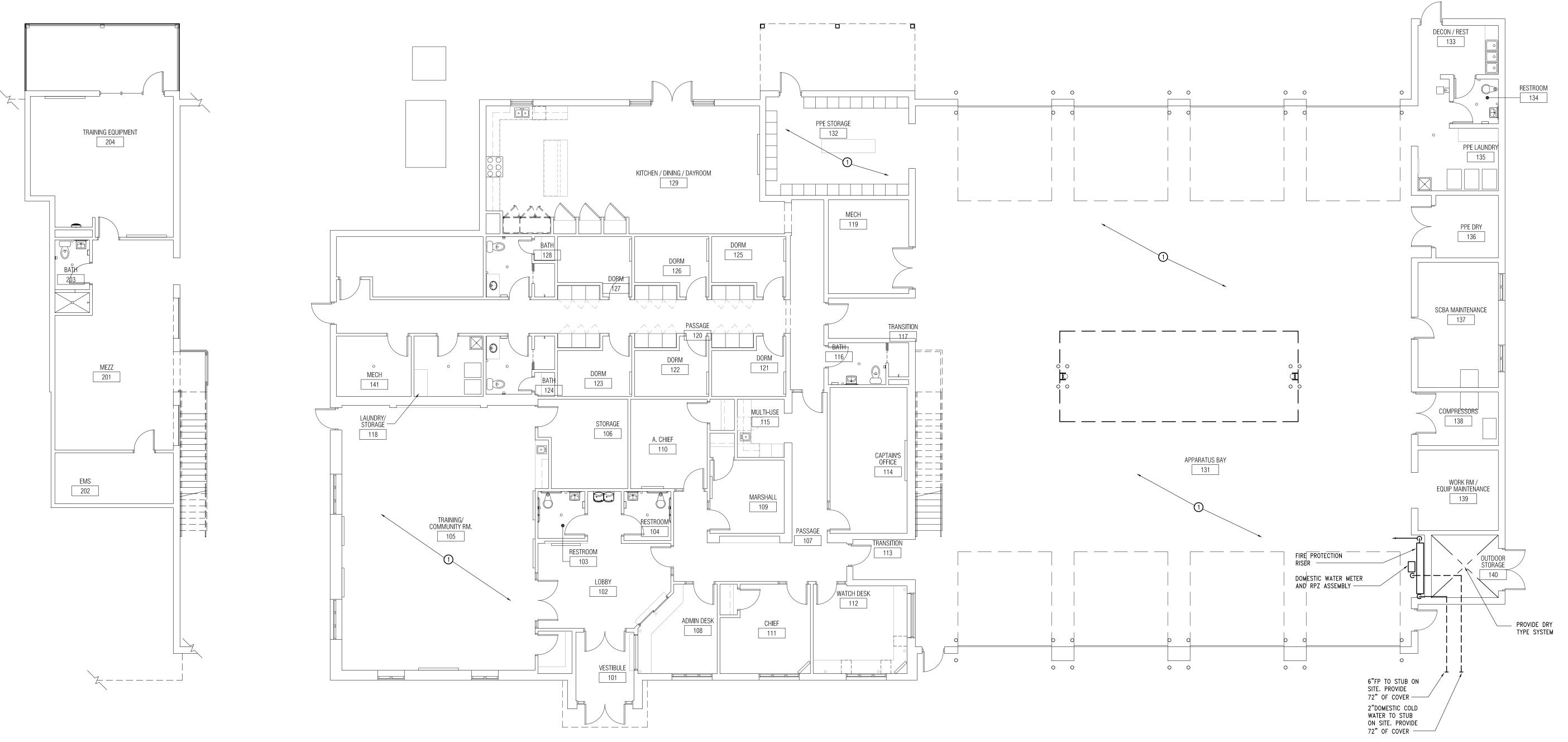
MS

SHEET NAME

TENADED A

TEMPERATURE CONTROLS

SHEET NO. M6-02



Mezzanine Level Floor Plan - Fire Protection

1/8" = 1'-0"

Main Level Floor Plan - Fire Protection

FIRE PROTECTION GENERAL NOTES:

SPECIFICATION FOR ADDITIONAL INFORMATION.

- A. COORDINATE ALL WORK WITH OTHER TRADES.

 B. BUILDING IS TO BE FULLY SPRINKLED. SPRINKLER SYSTEM DESIGN AND LAYOUT TO BE A HYDRAULICALLY DESIGNED SYSTEM IN COMPLIANCE WITH THE MICHIGAN BUILDING CODE, NFPA 13, OWNER'S UNDERWRITER AND AUTHORITY HAVING JURISDICTION. REFER TO
- C. DO NOT SCALE THE PLUMBING AND FIRE PROTECTION DRAWINGS FOR LOCATION OF CEILING MOUNTED SPRINKLER HEADS. ALL CEILING MOUNTED HEADS SHALL BE COORDINATED WITH ARCHITECTURAL CEILING PLANS, UNLESS OTHERWISE NOTED.
- D. ALL SPRINKLERS LOCATED IN LAY-IN CEILINGS SHALL BE CENTERED IN THE MIDDLE OF THE CEILING TILES UNLESS OTHERWISE INDICATED ON THE ARCHITECTURAL SERIES DRAWINGS.
- TYCO ROYAL FLUSH II UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

 F. PRIOR TO START OF ANY CONSTRUCTION, SUBMIT DRAWINGS TO
- OWNER'S INSURANCE COMPANY AND LOCAL AUTHORITY HAVING JURISDICTION FOR APPROVAL.

E. SPRINKLER HEADS IN AREAS WITH CEILINGS TO BE SIMILAR TO

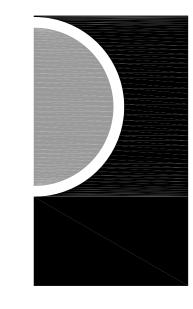
G. ALTHOUGH SOME PREFERRED LOCATIONS OF MAINS ARE SHOWN ADDITIONAL MAINS MAY BE REQUIRED.

FIRE PROTECTION KEY NOTES:

ALL FIRE PROTECTION PIPING IN EXPOSED AREAS TO BE ON LINEAR, EQUALLY SPACED, GRID PATTERN AND TO BE PAINTED RED. REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR FURTHER INFORMATION.



PARTNERS



PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600
F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



KEY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| ISSUES / REVISIONS | 0.4.00 |
|----------------------|--------|
| SCHEMATIC DESIGN | 01-28 |
| BIDDING-CONSTRUCTION | 03-27 |
| | |
| CONSTRUCTION | 05-04 |
| | |
| | |
| | |
| | |

DRAWN BY

CHECKED BY

APPROVED BY

MS SHEET NAME

FLOOR PLANS - FIRE PROTECTION

SHEET NO.
FP1-01

| | | | | | | | | | 480V. | , THR | EE PI | HASE | CIRCU | JIT LE | NGTH | TABL | _E | | | | | | | | | |
|--------------------|-------------------------|--------|----------|--------|------|------|------|------|-------|-------|-------|------|-------|--------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BREAKER | MAX. CIRCUIT LOAD | MAXIMU | M LENGTI | IN FEE | T | | | | | | | | | | | | | | | | | | | | | |
| AMPACITY (AMPS) | (AMPS) | NO.12 | NO.10 | NO.8 | NO.6 | NO.4 | NO.2 | NO.1 | 1/0 | 2/0 | 3/0 | 4/0 | 250 | 350 | 500 | 2-3/0 | 2-4/0 | 2-250 | 2-350 | 2-500 | 3-300 | 3-400 | 4-350 | 4-500 | 5-500 | 6-500 |
| 20 | 16 | 253 | 403 | 642 | 1019 | - | - | - | - | - | - | _ | _ | - | - | _ | _ | - | - | - | - | - | - | - | - | _ |
| 30 | 24 | _ | 269 | 428 | 679 | 1079 | - | - | - | - | - | - | - | - | - | - | _ | - | - | - | - | - | - | - | - | - |
| 40 | 32 | - | - | 321 | 509 | 809 | 1293 | - | - | _ | - | - | - | - | - | _ | - | - | - | - | - | - | - | - | - | _ |
| 50 | 40 | _ | - | - | 408 | 648 | 1034 | - | - | - | - | - | - | - | - | _ | _ | - | - | - | - | - | - | - | - | - |
| 60 | 48 | _ | - | - | _ | 540 | 862 | 1083 | - | _ | - | _ | - | - | - | _ | - | - | - | - | - | - | - | - | - | _ |
| 70 | 56 | _ | - | - | _ | - | 739 | 928 | 1169 | - | - | - | - | - | - | _ | _ | - | _ | - | - | - | - | - | - | - |
| 80 | 64 | _ | - | - | _ | - | 646 | 812 | 1023 | 1286 | - | _ | - | - | - | _ | - | - | - | - | - | - | - | - | - | _ |
| 90 | 72 | _ | - | - | _ | - | 574 | 722 | 909 | 1143 | - | - | - | - | - | _ | _ | - | _ | - | - | - | - | - | - | - |
| 100 | 80 | _ | - | - | _ | - | - | 650 | 818 | 1029 | - | _ | _ | - | - | _ | - | - | - | - | - | - | - | - | - | _ |
| 125 | 100 | _ | - | - | _ | _ | - | - | 655 | 823 | 1043 | - | - | - | - | _ | _ | - | - | - | - | - | - | - | - | - |
| 150 | 120 | _ | - | - | _ | - | - | - | 546 | 689 | 869 | 1107 | _ | - | - | _ | _ | - | - | - | - | - | - | - | - | _ |
| 175 | 140 | _ | - | - | - | - | - | - | - | 588 | 745 | 949 | 1110 | - | - | - | _ | - | - | - | - | - | - | - | - | - |
| 200 | 160 | _ | - | - | _ | - | - | - | - | _ | 652 | 830 | 971 | 1360 | - | _ | _ | - | - | - | - | - | - | - | - | _ |
| 225 | 180 | _ | - | - | _ | - | - | - | - | - | - | 738 | 863 | 1209 | 1743 | - | - | - | - | - | - | - | - | - | - | - |
| 250 | 200 | _ | - | - | _ | - | - | - | - | - | - | _ | 777 | 1088 | 1569 | 1043 | _ | - | - | - | - | - | - | - | - | _ |
| 300 | 240 | _ | - | - | _ | - | - | - | - | - | - | - | - | 907 | 1307 | 869 | 1107 | - | - | - | - | - | - | - | - | - |
| 350 | 280 | _ | - | - | _ | - | - | - | - | - | - | _ | _ | - | 1120 | 745 | 949 | 1110 | - | - | - | - | - | - | - | _ |
| 400 | 320 | _ | - | - | _ | - | - | - | - | - | - | - | - | - | 980 | 652 | 830 | 971 | 1360 | - | - | - | - | - | - | - |
| 450 | 360 | _ | - | - | _ | - | - | - | - | - | _ | _ | _ | - | - | _ | 738 | 863 | 1209 | - | - | - | - | - | - | _ |
| 500 | 400 | _ | - | - | _ | - | - | - | - | - | - | - | - | - | - | - | _ | 777 | 1088 | 1569 | - | - | - | - | - | - |
| 600 | 480 | _ | - | - | _ | _ | - | - | ı | ı | - | - | - | - | 1 | _ | _ | 1 | 907 | 1307 | 1165 | - | - | - | ı | - |
| 700 | 560 | _ | - | - | - | _ | - | - | - | - | - | - | - | - | - | - | - | - | - | 1120 | 999 | 1346 | - | - | - | _ |
| 800 | 640 | - | - | - | - | - | - | - | - | - | - | - | - | - | • | - | - | - | • | - | 874 | 1177 | 1360 | - | - | - |
| 1000 | 800 | - | - | - | - | - | - | - | • | • | - | - | - | - | • | - | - | 1 | 1 | - | 1 | 942 | 1088 | 1569 | 1 | - |
| 1200 | 960 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | • | - | 1 | 785 | 907 | 1307 | - | - |
| 1600 | 1200 | _ | - | - | - | - | _ | - | - | - | - | - | - | - | - | - | - | ı | 1 | - | ı | - | - | 980 | 1226 | 1307 |
| 1800 | 1440 | _ | - | - | - | - | - | - | ı | ı | _ | - | - | - | ı | - | - | ı | ı | - | 1 | - | - | - | 1089 | 1177 |
| 2000 | 1600 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 980 | 1137 |

| 208V. SINGLE PHASE CIRCUIT LENGTH TA | | | | | | TH TAE | BLE |
|--------------------------------------|-------------------------------|-------------------------|--------|----------|----------|--------|------|
| | BREAKER AMPACITY (AMPS) | MAX. CIRCUIT LOAD | MAXIMU | IM LENGT | h in fee | Т | |
| | (MMI-2) | (AMPS) | NO.12 | NO.10 | NO.8 | NO.6 | NO.4 |
| | 20 | 4 | 380 | 605 | 964 | - | - |
| | | 8 | 190 | 302 | 482 | 765 | - |
| | | 12 | 127 | 202 | 321 | 510 | 810 |
| | | 16 | 95 | 151 | 241 | 382 | 607 |
| | | | | | | | |
| | 30 | 24 | _ | 101 | 161 | 255 | 405 |
| | | | | | | | |
| | 40 | 32 | _ | - | 121 | 191 | 304 |
| | | | | | | | |
| | 50 | 40 | | _ | | 153 | 243 |
| | | | | | | | |
| | 60 | 48 | _ | _ | - | - | 202 |

| 120V. SINGLE PHASE CIRCUIT LENGTH TABLE | | | | | | |
|---|-------------------------|------------------------|-------|------|------|-----|
| BREAKER AMPACITY (AMPS) | MAX. CIRCUIT LOAD | MAXIMUM LENGTH IN FEET | | | | |
| (AMF3) | (AMPS) | NO.12 | NO.10 | NO.8 | NO.6 | NO. |
| 20 | 4 | 220 | 349 | 556 | 882 | - |
| | 8 | 110 | 174 | 278 | 441 | 70 |
| | 12 | 73 | 116 | 185 | 294 | 46 |
| | 16 | 55 | 87 | 139 | 221 | 35 |
| | | | | | | |
| 30 | 24 | - | 58 | 93 | 147 | 23 |
| | | | | | | |
| 40 | 32 | - | - | 70 | 110 | 17 |
| | | | | | | |
| 50 | 40 | _ | _ | _ | 88 | 140 |
| | | | | | | |
| 60 | 48 | _ | _ | _ | _ | 11 |

| BREAKER AMPACITY | MAX. CIRCUIT | MAYIMI | IM LENCT | H IN FEE | т |
|---------------------|-----------------|--------|----------|----------|------|
| (AMPS) | LOAD (AMPS) | NO.12 | NO.10 | NO.8 | NO.6 |
| 20 | 4 | 439 | 698 | 1113 | - |
| | 8 | 220 | 349 | 557 | 883 |
| | 12 | 127 | 233 | 371 | 589 |
| | 16 | 95 | 175 | 278 | 442 |
| | | | | | |
| 30 | 24 | _ | 116 | 186 | 294 |
| | | | | | |
| 40 | 32 | _ | _ | 139 | 221 |
| | | | | | |
| 50 | 40 | - | _ | _ | 177 |
| | | | | | |
| 60 | 48 | - | - | - | - |

| | FEEDER & BRANCH CIRCUIT SIZING SCHEDULE - | | | | | | |
|------------------------------|---|-------------|------------------------|----------------------|-----------------------|------|--|
| | | | | AR LOADS | | | |
| OVERCURRENT DEVICE RATING | MRE SIZE — / PHASE | AWG OR KCMI | | CONDUIT SIZE | | | |
| (AMPERES) | & NEUTRAL | E.G. | 4 WIRE+G (2PH & 2N) | 5 WIRE+G (NOTE-7) | 6 WRE+G (3PH & 3N) | NOTE | |
| 15-20 | 12 | 12 | 3/4" | 3/4" | 3/4" | | |
| 25-30 | 10 | 10 | 3/4" | 3/4" | 3/4" | | |
| 35-40 | 8 | 10 | 3/4" | 1" | 1" | | |
| 45-50 | 8(6) | 10 | 3/4"(1") | 1" | 1"(1 1/4") | | |
| 60 | 6(4) | 10 | 1"(1 1/4") | 1"(1 1/4") | 1 1/4" | | |
| 70 | 6(4) | 8 | 1"(1 1/4") | 1"(1 1/4") | 1 1/4" | | |
| 80-90 | 4(2) | 8 | 1 1/4" | 1 1/4"(1 1/2") | 1 1/4"(1 1/2") | | |
| 100 | 3(2) | 8 | 1 1/4" | 1 1/2" | 1 1/2" | | |
| 110 | 2(1) | 6 | 1 1/2" | 2" | 2" | | |
| 125 | 1(1/0) | 6 | 1 1/2"(2") | 2" | 2" | | |
| 150 | 1/0 | 6 | 2" | 2" | 2" | | |
| 175 | 2/0 | 6 | 2" | 2" | 2 1/2" | | |
| 200 | 3/0 | 6 | 2" | 2 1/2" | 2 1/2" | | |
| 225 | 4/0 | 4 | 2 1/2" | 2 1/2" | 3" | | |
| 250 | 250 | 4 | 3" | 3" | 3" | | |
| 300 | 350 | 4 | 3" | 3 1/2" | 3 1/2" | | |
| 350 | 500 | 3 | 3 1/2" | 4" | 4" | | |
| 400 | 500 | 3 | 3 1/2 " | 4" | 4" | | |
| 450 | 2-4/0 | 2-2 | 2-2 1/2" | 2-2 1/2" | 2-3" | | |
| 500 | 2-250 | 2-2 | 2-3" | 2-3" | 2-3" | | |
| 600 | 2-350 | 2-1 | 2-3" | 2-3 1/2" | 2-3 1/2" | | |
| 700 | 2-500 | 2-1/0 | 2-3 1/2" | 2-4" | 2-4" | | |
| 800 | 2-500 | 2-1/0 | 2-3 1/2" | 2-4" | 2-4" | | |
| 1000 | 3-400 | 3-2/0 | 3-3" | 3-3 1/2" | 3-4" | | |
| 1200 | 4-350 | 4-3/0 | 4-3" | 4-3 1/2" | 4-3 1/2" | | |
| 1600 | 5-400 | 5-4/0 | 5-3" | 5-3 1/2" | 5-4" | | |
| 2000 | 6-400 | 6-250 | 6-3" | 6-3 1/2" | 6-4" | | |
| | | | | | | | |

| | FEEDEF | R & BRA | ANCH CIR GENERAL | CUIT SIZING S . PURPOSE | SCHEDULE - | |
|----------------------------|--------------------|-------------|---------------------|----------------------------|------------------------|------|
| OVERCURRENT | MRE SIZE - | AWG OR KCMI | i | CONDUIT SIZE | • | |
| DEVICE RATING (AMPERES) | PHASE & NEUTRAL | E.G. | 2 WIRE+G | 3 WRE+G | 4 WIRE+G (3PH & 1N) | NOTE |
| 15-20 | 12 | 12 | 3/4" | 3/4" | 3/4" | |
| 25-30 | 10 | 10 | 3/4" | 3/4" | 3/4" | |
| 35-40 | 8 | 10 | 3/4" | 3/4" | 3/4" | |
| 45-50 | 8(6) | 10 | 3/4" | 3/4" | 3/4"(1") | |
| 60 | 6(4) | 10 | 3/4"(1") | 3/4"(1") | 1"(1 1/4") | |
| 70 | 6(4) | 8 | 3/4"(1") | 3/4"(1") | 1"(1 1/4") | |
| 80-90 | 4(2) | 8 | 1" | 1"(1 1/4") | 1 1/4" | |
| 100 | 3(2) | 8 | 1"(1 1/4") | 1 1/4" | 1 1/4" | |
| 110 | 2(1) | 6 | 1 1/4" | 1 1/4"(1 1/2") | 1 1/4"(1 1/2") | |
| 125 | 1(1/0) | 6 | 1 1/4" | 1 1/2" | 1 1/2"(2") | |
| 150 | 1/0 | 6 | 1 1/4" | 1 1/2" | 2** | |
| 175 | 2/0 | 6 | 1 1/2" | 2" | 2** | |
| 200 | 3/0 | 6 | 1 1/2" | 2* | 2** | |
| 225 | 4/0 | 4 | 2* | 2* | 2 1/2" | |
| 250 | 250 | 4 | 2" | 2 1/2" | 2 1/2" | |
| 300 | 350 | 4 | 2 1/2" | 3* | 3" | |
| 350 | 500 | 3 | 3" | 3" | 3 1/2" | |
| 400 | 500 | 3 | 3" | 3" | 3 1/2 * | |
| 450 | 2-4/0 | 2-2 | 2-2* | 2-2* | 2-2 1/2° | |
| 500 | 2-250 | 2-2 | 2-2* | 2-2 1/2 * | 2-2 1/2" | |
| 600 | 2-350 | 2-1 | 2-2 1/2* | 2-3" | 2-3° | |
| 700 | 2-500 | 2-1/0 | 2-3* | 2-3" | 2-3 1/2" | |
| 800 | 2-500 | 2-1/0 | 2-3" | 2-3" | 3-3 1/2" | |
| 1000 | 3-400 | 3-2/0 | 3-2 1/2° | 3–3" | 3-3 " | |
| 1200 | 4-350 | 4-3/0 | 4-2 1/2" | 4-3" | 4-3" | |
| 1600 | 5-400 | 5-4/0 | 5-2 1/2 * | 5-3" | 5-3" | |
| 2000 | 6-400 | 6-250 | 6-2 1/2" | 6-3* | 6-3" | |

| TRANSFORMER CIRCUIT SIZING SCHEDULE - GENERAL PURPOSE TYPE (NOTE 6) | | | | | | |
|--|--------------------------------|----------------|--------------------------------|------------------|--|--|
| TRANSF. KVA | PRIMARY | CIRCUIT | SECONDARY CIRCUIT | | | |
| TRANSIT KYA | SWITCH/FUSE OR CIRCUIT BREAKER | PRIMARY FEEDER | SWITCH/FUSE OR CIRCUIT BREAKER | SECONDARY FEEDER | | |
| 9 | 30/20A. | 20A., 3W. | 30/30A. | 30A., 4W. | | |
| 15 | 30/25A. | 25A., 3W. | 60/60A. | 60A., 4W. | | |
| 30 | 60/45A. | 45A., 3W. | 100/100A. | 100A., 4W. | | |
| 45 | 100/70A. | 70A., 3W. | 200/150A. | 175A., 4W. | | |
| 75 | 200/125A. | 125A., 3W. | 400/250A. | 250A., 4W. | | |
| 112 1/2 | 200/175A. | 175A., 3W. | 400/400A. | 400A., 4W. | | |
| 150 | 400/225A. | 225A., 3W. | 600/500A. | 500A., 4W. | | |
| 225 | 400/350A. | 350A., 3W. | 800/800A. | 800A., 4W. | | |
| 300 | 600/500A. | 500A., 3W. | 1200/1000A. | 1000A., 4W. | | |
| | | | | | | |

| TRANSFORMER CIRCUIT SIZING SCHEDULE - NONLINEAR LOAD TYPE (NOTE 6) | | | | | | |
|---|--------------------------------|----------------|--------------------------------|------------------|--|--|
| TRANSF. KVA | PRIMARY | CIRCUIT | SECONDARY CIRCUIT | | | |
| IKANSE, KVA | SWITCH/FUSE OR CIRCUIT BREAKER | PRIMARY FEEDER | SWITCH/FUSE OR CIRCUIT BREAKER | SECONDARY FEEDER | | |
| 9 | 30/20A. | 20A., 3W. | 30/30A. | 30A., 5WNL | | |
| 15 | 30/25A. | 25A., 3W. | 60/60A. | 60A., 5WNL | | |
| 30 | 60/45A. | 45A., 3W. | 100/100A. | 100A., 5WNL | | |
| 45 | 100/70A. | 70A., 3W. | 200/175A. | 175A., 5WNL | | |
| 75 | 200/125A. | 125A., 3W. | 400/300A. | 300A., 5WNL | | |
| 112 1/2 | 200/175A. | 175A., 3W. | 400/400A. | 400A., 5WNL | | |
| 150 | 400/225A. | 225A., 3W. | 600/600A. | 600A., 5WNL | | |
| 225 | 400/350A. | 350A., 3W. | 800/800A. | 800A., 5WNL | | |
| | | | | | | |

MOUNTING HEIGHTS

| EQUIPMENT OR OUTLETS | ELEVATION |
|--|--------------|
| WALL SWITCHES | 4'-0" AFF |
| RECEPTACLES | 1'-6" AFF |
| TELECOMMUNICATIONS OUTLETS | 1'-6" AFF |
| TELECOMMUNICATIONS OUTLETS - WALL PHONE | 4'-6" AFF |
| CLOCK OUTLETS | 7'-6" AFF |
| TV OUTLETS | 1'-6" AFF |
| FIRE ALARM - PULL STATIONS | 4'-0" AFF |
| FIRE ALARM - SPEAKERS, VISUAL UNITS, HORNS | 7'-0" AFF |
| PUSHBUTTONS | 4'-0" AFF |
| DISCONNECT SWITCHES | 5'-6" AFF |
| MOTOR STARTERS | 5'-6" AFF |
| PANELS & CABINETS | 6'-0" TO TOP |
| VOLUME CONTROLS | 4'-0" AFF |
| NURSE CALL STATIONS | 4'-0" AFF |
| DIMMERS | 4'-0" AFF |
| INDIVIDUAL CIRCUIT BREAKERS | 5'-6" TO TOP |
| ACCESS CONTROL DEVICES | 4'-0" AFF |
| MOUNTING LICIOUT MOTES. | |

MOUNTING HEIGHT NOTES: 1. ALL ELEVATIONS ARE TO CENTER LINE OF DEVICE, UNLESS

OTHERWISE NOTED. 2. REFER TO ARCHITECTURAL ELEVATION DRAWINGS FOR COORDINATION WITH CASEWORK.

CIRCUIT MAXIMUM DISTANCE TABLES

- 1. CIRCUIT MAXIMUM DISTANCE IS BASED ON NEC CHAPTER 9, TABLE 8
 CONDUCTOR PROPERTIES FOR COATED COPPER CONDUCTORS AT 75 DEGREES
 CELSIUS.
- 2. MAXIMUM CIRCUIT LOAD FOR DISTANCE IS BASED ON NEC 220-10(b)
- FOR 208Y, THREE PHASE MAXIMUM DISTANCE MULTIPLY 480V DISTANCE IN TABLE ABOVE BY 0.43; AND FOR 240V, THREE PHASE MULTIPLY 480V DISTANCE IN TABLE ABOVE BY 0.5.

<u>CIRCUIT SIZING SCHEDULES NOTES:</u>

- 1. BASED ON THHN/THWN, 90°., 600V., INSULATED, COPPER WIRE APPLIED AT 75° FOR TERMINATIONS RATED AT 60°C/75°C AND 75°C. FOR TERMINATIONS RATED AT 60°C PROVIDE WIRE AND CONDUIT SIZES INDICATED IN PARENTHESIS.
- 2. BASED ON WIRE OUTSIDE DIAMETERS AND RIGID METALLIC CONDUIT INSIDE DIAMETERS AS PROVIDED IN THE NEC. DO NOT REDUCE CONDUIT SIZE FOR NON-RIGID METALLIC APPLICATION. REFER TO NEC FOR CONDUIT TYPES MORE RESTRICTIVE THAN RIGID
- 3. BASED ON MOTOR FULL LOAD AMPERES AS PROVIDED BY THE NEC.
- 4. BASED ON MOTOR RUNNING OVERLOAD PROTECTION PROVIDED BY THERMAL OVERLOAD RELAYS.
- 5. MOTOR STARTING TYPE BASED ON 460V., 3 PHASE, FULL VOLTAGE NON- REVERSING EXCEPT FOR MOTORS SIZED 75HP OR GREATER WHICH ARE BASED ON 460V., 3 PHASE, PART WINDING REDUCED
- 6. TRANSFORMER CIRCUITS BASED ON 480V TO 208/120V., 3 PHASE, 4 WIRE, DRY TYPE.
- 7. PROVIDE THREE PHASE WIRES AND ONE DOUBLE AMPACITY NEUTRAL FOR 110 AMPACITY CIRCUITS AND LESS. PROVIDE THREE PHASE WIRES AND TWO NEUTRAL WIRES, SIZES AS INDICATED FOR 125 AMPACITY CIRCUITS AND GREATER.
- 8. FOR ALL CONDUITS AND WIRES INSTALLED EXPOSED IN DIRECT SUNLIGHT ON OR ABOVE ROOFTOPS, APPLY THE CORRECTION FACTORS PER NEC 208 TABLE 310.15(B)(2)(c) FOR AMBIENT TEMPERATURE ADJUSTMENTS.

| | MOTOR C (FOR 460) | CIRCUIT S | SIZING SO MOTORS) (NOT | CHEDULE es 3,4,5) | | |
|----------|---------------------------------------|--------------------|---------------------------|----------------------|------|---------|
| MOTOR HP | SWITCH/FUSE | CIRCUIT BREAKER | STARTER | CONDUIT & WIRE | | |
| | · · · · · · · · · · · · · · · · · · · | BREAKER | SIZE/TYPE | PHASE | E.G. | CONDUIT |
| 1/2 | 30/3A. | 3A | 1 | 12 | 12 | 3/4" |
| 3/4 | 30/3A. | 6A | 1 | 12 | 12 | 3/4" |
| 1 | 30/6A. | 6A | 1 | 12 | 12 | 3/4" |
| 1 1/2 | 30/6A. | 10A | 1 | 12 | 12 | 3/4" |
| 2 | 30/6A. | 10A | 1 | 12 | 12 | 3/4" |
| 3 | 30/10A. | 15A | 1 | 12 | 12 | 3/4" |
| 5 | 30/15A. | 20A | 1 | 12 | 12 | 3/4" |
| 7 1/2 | 30/20A. | 30A | 1 | 12 | 10 | 3/4" |
| 10 | 30/25A. | 35A | 1 | 12 | 10 | 3/4" |
| 15 | 30/30A. | 50A | 2 | 10 | 10 | 3/4" |
| 20 | 60/40A. | 60A | 2 | 8 | 10 | 3/4" |
| 25 | 60/50A. | 75A | 2 | 6 | 10 | 1" |
| 30 | 60/60A. | 100A | 3 | 6 | 10 | 1" |
| 40 | 100/80A. | 125A | 3 | 4 | 8 | 1 1/2" |
| 50 | 100/100A. | 150A | 3 | 3 | 8 | 1 1/2" |
| 60 | 200/125A. | 175A | 4 | 1 | 6 | 1 1/2" |
| 75 | 200/150A. | 200A | 4 | 1/0 | 6 | 1 1/2" |
| 100 | 200/200A. | 225A | 4 | 2/0 | 6 | 2* |
| 125 | 200/200A. | 225A | 5 | 3/0 | 6 | 2* |
| 150 | 400/250A. | 300A | 5 | 4/0 | 4 | 2 1/2" |
| 200 | 400/350A. | 400A | 5 | 350 | 4 | 3" |
| | | | | | | |

GENERAL NOTES: (APPLY TO ALL ELECTRICAL DRAWINGS)

- 1. THIS IS A PHASED CONSTRUCTION, COORDINATE WITH GC/CM, OWNER AND ARCHITECT FOR EXACT PHASING SCOPE AND SCHEDULES. ATTEND COORDINATION MEETING WITH OTHER TRADES TO ACCOMMODATE THE PROJECT PHASING. ALL WORK FOR LATER PHASE TO BE INCLUDED AS SEPARATE LINE ITEMS IN THE BIDS.
- 2. NM CABLES (ROMEX) ARE NOT ALLOWED.
- 3. FEEDER SIZES NOTED ARE FOR COPPER CONDUCTORS. THE USE OF ALUMINUM CONDUCTORS TO BE APPROVED BY OWNER FOR FEEDERS LARGER THAN 100A.
- 4. REFER TO ARCHITECTURAL SPECIFICATIONS SECTION 01030 'ALTERNATES' FOR SCHEDULE OF ALTERNATES, COORDINATE ALL DEDUCT AND ADD ALTERNATE WORK REQUIREMENTS WITH ARCHITECT AND OTHER TRADES
- 5. COORDINATE WORK WITH ARCHITECTURAL, MECHANICAL, CIVIL, STRUCTURAL AND INTERIOR DESIGN DOCUMENTS.
- 6. COORDINATE ALL WORK FOR LOW VOLTAGE SYSTEMS: TELECOMM, ACCESS CONTROL, SECURITY, ETC. DEVICES SHOWN ON THESE PLANS ARE FOR REFERENCE ONLY. COORDINATE COMPLETE SCOPE OF WORK FOR THESE SYSTEMS WITH LOW VOLTAGE CONSULTANTS.

ELECTRICAL LEGEND

HALF SHADED LIGHTING FIXTURES WIRED TO THE EMERGENCY GENERATOR — TYPICAL FOR ALL HALF SHADED LIGHTING SYMBOLS

FULLY SHADED LIGHTING FIXTURES WIRED TO THE EMERGENCY GENERATOR WITH NO LOCAL OR AUTOMATIC LIGHTING CONTROL NIGHT LIGHTS — TYPICAL FOR ALL SHADED LIGHTING SYMBOLS

● POLE MOUNTED LIGHTING FIXTURE

FLUORESCENT STRIP LIGHTING FIXTURE

FLUORESCENT LIGHTING FIXTURE

A FIXTURE TYPE

☐ ○ LED LIGHTING FIXTURES

OH WALL MOUNTED LIGHTING FIXTURE

S₂ DOUBLE POLE LIGHT SWITCH

FOUR WAY LIGHT SWITCH

SWITCH WITH PILOT LIGHT

S₃ THREE WAY LIGHT SWITCH

SK KEY SWITCH

EXIT LIGHTING FIXTURE SINGLE POLE LIGHT SWITCH

SWITCH WITH TIMER WITH MIN. 1 HOUR SETTING DUPLEX RECEPTACLE QUAD RECEPTACLE

GFR DUPLEX RECEPTACLE

DUPLEX RECEPTACLE CONNECTED TO GENERATOR EMERGENCY POWER QUAD RECEPTACLE CONNECTED TO GENERATOR EMERGENCY

GFR DUPLEX RECEPTACLE CONNECTED TO GENERATOR EMERGENCY POWER

JUNCTION BOX HOOD OUTLET

RANGE OUTLET, 50A/2P, 3W, 125/250V, WITH GROUND (COORDINATE WITH EQUIPMENT PURCHASED)

DRYER OUTLET, 30A/2P, 3W, 125/250V, WITH GROUND,

(COORDINATE WITH EQUIPMENT PURCHASED) COMBINATION DATA AND TELEPHONE OUTLET

TELEPHONE OUTLET

WIRELESS ACCESS POINT

FLUSH FLOOR SINGLE-GANG BOX WITH 1 DUPLEX OUTLET - NORMAL OR EMERGENCY, PROVIDE SERVICE FITTINGS WITH ALL TRIM PIECES, FLANGES, COMPONENTS AND ACCESSORIES AS REQUIRED FOR COMPLETE FLUSH INSTALLATION SUITABLE WITH THE FLOOR SURFACE, COORDINATE WITH ARCHITECT FOR FLOOR TYPES AND ALL FINISHES/COLORS. (PROVIDE FIRE RATED POKE THROUGH FOR SECOND FLOOR).

FLUSH FLOOR SINGLE-GANG BOX WITH 2 DUPLEX OUTLETS — NORMAL OR EMERGENCY, PROVIDE SERVICE FITTINGS WITH ALL TRIM PIECES, FLANGES, COMPONENTS AND ACCESSORIES AS REQUIRED FOR COMPLETE FLUSH INSTALLATION SUITABLE WITH THE FLOOR SURFACE, COORDINATE WITH ARCHITECT FOR FLOOR TYPES AND ALL FINISHES/COLORS. (PROVIDE FIRE RATED POKE THROUGH FOR SECOND FLOOR).

FLUSH FLOOR THREE-GANG BOX WITH 2 DUPLEX OUTLETS - NORMAL OR EMERGENCY AND VOICE AND DATA, 3/4"C FOR POWER AND 1"C FOR TELECOMM. WIREMOLD OR HUBBELL. (PROVIDE POKE THROUGH FOR SECOND FLOOR).

FLUSH FLOOR SINGLE—GANG POKE THROUGH WITH 1 DUPLEX OUTLET, PROVIDE SERVICE FITTINGS WITH ALL TRIM PIECES, FLANGES, COMPONENTS AND ACCESSORIES AS REQUIRED FOR COMPLETE FLUSH INSTALLATION SUITABLE WITH THE FLOOR SURFACE, COORDINATE WITH

MULTI-SERVICE FURNITURE FEED FLUSH FLOOR BOX - TYPE F1 - DUAL CHANNEL FOR POWER AND TELECOMM. TO ELECTRIFIED SYSTEMS FURNITURE. MAKE FINAL CONNECTIONS TO SYSTEMS FURNITURE POWER WHIP. PROVIDE 3/4°C FOR POWER AND 2°C FOR TELECOMM. TO ABOVE ACCESSIBLE CEILING, VERIFY WITH OWNER'S IT REPRESENTATIVE. PROVIDE FINAL CONNECTIONS AND COVERPLATES SUITABLE FOR WHIP CONNECTION. PROVIDE WIREMOLD EVOLUTION SERIES 8AT OR SIMILAR BY HUBBELL, RUN CONDUITS UNDERGROUND TO NEAREST WALL/COLUMN. PROVIDE COVERS AS REQUIRED FOR THE FLOOR TYPES, REFER TO ARCHITECTURAL FINISH PLANS.

JUNCTION BOX WALL MOUNTED FOR FLEXIBLE CONNECTION TO SYSTEMS (P: POWER, D: DATA). FURNITURE WHIP PROVIDED BY FURNITURE SUPPLIER. PROVIDE 2"C FOR AND 3/4"C FOR POWER TO ABOVE ACCESSIBLE CEILING, VERIFY WITH OWNER'S IT REPRESENTATIVE. COORDINATE LOCATION WITH FURNITURE SYSTEM SUPPLIER. PROVIDE FINAL CONNECTION AND COVERPLATE SUITABLE FOR WHIP CONNECTION.

TELEVISION OUTLET 4-SQUARE BOX - SINGLE GANG, 60" AFF EXCEPT AS NOTED; 1"CONDUIT TO BOX FROM ABOVE SUSPENDED CEILING.

CEILING MOUNTED DUPLEX RECEPTACLE, DATA/PHONE AND AV OUTLET

CEILING MOUNTED DUPLEX RECEPTACLE TIME CLOCK, SINGLE GANG BOX, 48"AFF, 3/4"C. TO BOX FROM ABOVE SUSPENDED CEILING, REQUIRES DUPLEX OUTLET NEARBY FOR POWER

MANUAL SINGLE PHASE MOTOR STARTER

THREE PHASE COMBINATION MAGNETIC FUSIBLE MOTOR STARTER

FUSIBLE DISCONNECT SWITCH

NON-FUSIBLE DISCONNECT SWITCH MOTOR - SINGLE PHASE

MOTOR - THREE PHASE

LIGHTING AND/OR RECEPTACLE PANEL

HOMERUN TO LIGHTING PANEL

TRANSFORMER CONTACTOR

CONTROL PANEL

INTERCOM UNIT, PBX-STYLE, FLUSH MOUNTED, PROVIDE 3/4"CONDUIT FROM ACCESSIBLE CEILING AREA TO 4"X4" DEEP BACK BOX. TV OUTLET

MUSHROOM TYPE EMERGENCY SHUT-OFF PUSHBUTTON

SMOKE DETECTOR

COMBINATION SMOKE/CO DETECTOR

HEAT DETECTOR

(DSD) DUCT SMOKE DETECTOR CARD READER

EGRESS CARD READER

MAGNETIC DOOR HOLDER DC DOOR CONTACTS

FIRE ALARM PULL STATION

FIO FIRE ALARM STROBE

FIG FIRE ALARM HORN-STROBE

FIRE ALARM HORN/STROBE - CEILING OR PENDANT MOUNTED

TAMPER SWITCH (REFER TO MECHANICAL FOR QUANTITIES)

FLOW SWITCH (REFER TO MECHANICAL FOR QUANTITIES)

AUDIO/VISUAL ALARM FACP FIRE ALARM CONTROL PANEL - FLUSH

FAAP FIRE ALARM ANNUNCIATOR PANEL - FLUSH

SECURITY CAMERA HANDICAP DOOR ACTIVATOR

PUSH BUTTON STATION

PANIC ALARM PUSH BUTTON, TIED TO ALERTING SYSTEM (NURSE CALL AND/OR SECURITY) TO SUMMON HELP

OCCUPANCY SENSOR MULTI-TECHNOLOGY CEILING MOUNTED

OS OCCUPANCY SENSOR MULTI-TECHNOLOGY WALL MOUNTED WITH LIGHT SWITCH OCCUPANCY SENSOR POWER PACK

X KEY NOTE DOOR CONTACT WIRELESS DOORBELL

> WA VIDEO ANALYTICS HOA HAND-OFF-AUTOMATIC

UNIT HEATER EXHAUST FAN

ELECTRIC WATER COOLER ABOVE FINISHED FLOOR WEATHERPROOF

NATIONAL ELECTRIC CODE SERVICE DISCONNECT GROUND FAULT CIRCUIT INTERRUPTER

MICROWAVE

GARBAGE DISPOSAL REF. REFRIGERATOR

DISHWASHER

LEGEND NOTES: ALL OCCUPANCY SENSORS SHALL HAVE ISOLATED AUXILIARY CONTACTS FOR USE BY MECHANICAL TRADES TO CONTROL MECHANICAL EQUIPMENT.

2. THIS IS STANDARD SYMBOL LIST — SOME OF THESE SYMBOL MAY NOT APPEAR ON DRAWINGS.

ELECTRICAL SHEET INDEX

E0-01 ELECTRICAL LEGEND, SHEET INDEX, TABLES AND GENERAL NOTES

E0-02 **ELECTRICAL RISER DIAGRAM** E0-03 WIRE AND LIGHTING FIXTURE SCHEDULES AND CONTROL MATRIX

E0-04 **ELECTRICAL PANEL SCHEDULES** E1-00 ELECTRICAL SITE PLAN

FLOOR PLAN - LIGHTING

E3-00 FLOOR PLAN - POWER E5-00 ELECTRICAL DETAILS

E2-00

PROJECT NAME

Highland Township Fire Station No. ³

Highland Township

Fire Department

PARTNERS

PARTNERS in Architecture, PLC

The ideas, concepts, drawings and thoughts conveyed

Architecture, PLC, 65 Market Street, Mount Clemens, MI,

48043 (P 586.469.3600). This set of drawings, in whole o

in part, may not be reproduced, without the written consent

MechanicalElectrical

400 S. Old Woodward Ave., t | 248 | 258 | 1610

Birmingham, Michigan

KEY PLAN

of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

herein are the intellectual property of PARTNERS in

65 MARKET STREET

P 586.469.3600

F 586.469.3607

© Copyright 2019

CONSULTANT

MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS SCHEMATIC DESIGN 01-28-2020 BIDDING-CONSTRUCTION 03-27-2020

CONSTRUCTION 05-04-2020

DRAWN BY

CHECKED BY

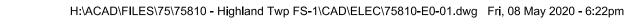
APPROVED BY

ELECTRICAL LEGEND, SCHEDULES, TABLES

AND GENERAL NOTES

SHEET NO. E0-01

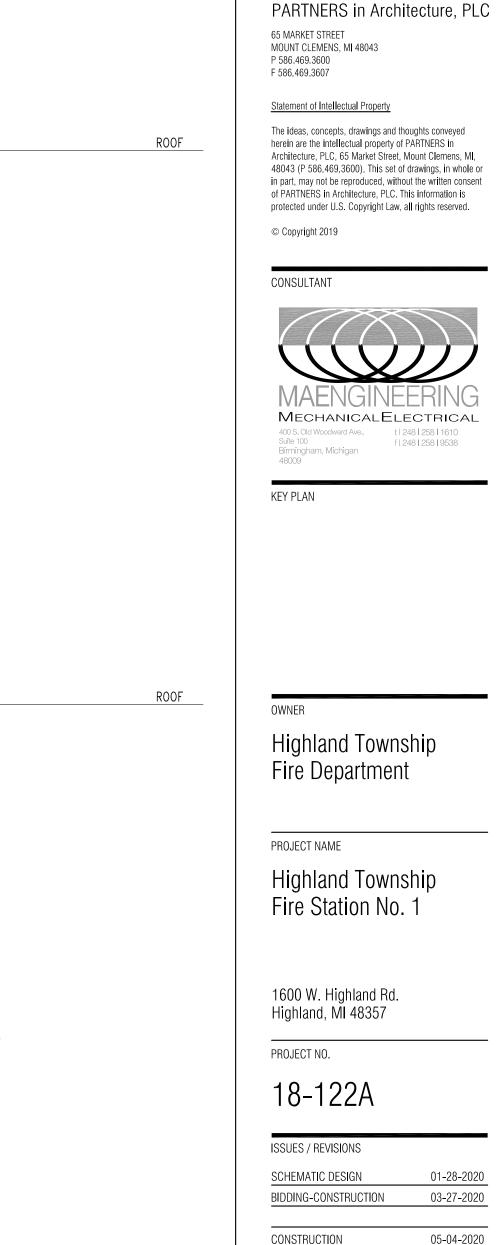
ENGINEER



- 5 VFD IS PROVIDED WITH EQUIPMENT, PROVIDE COMPLETE INSTALLATION, COORDINATE WITH MECHANICAL FOR EXACT REQUIREMENTS.
- DISCONNECT SWITCH PROVIDED WITH EQUIPMENT, REFER TO GENERAL NOTE-G THIS SHEET.
- COORDINATE WITH APPROVED GENERATOR SUBMITTALS FOR EXACT REQUIREMENTS AND PROVIDE SERVICES AS REQUIRED. PROVIDE BRANCH CIRCUITS FROM RP-1B.

GENERAL RISER NOTES:

- A. REFER TO SHEETS E0.003 FOR WIRE SCHEDULES AND SHEETS E0.004 AND E0.005 FOR PANEL SCHEDULES.
- B. REFER TO VOLTAGE DROP SCHEDULE ON SHEET E0.001 AND ADJUST FEEDERS ACCORDINGLY.
- C. RUN ALL UNDERGROUND CONDUITS MIN. 4" UNDER SLAB.
- D. NEW ELECTRICAL SERVICE REQUIREMENTS TO BE COORDINATED WITH DTE ENERGY.
- E. ALL MOTORS AND EQUIPMENT INDICATED ON THIS RISER DIAGRAM ARE RATED 208V/3 φ , UNLESS OTHERWISE NOTED.
- F. ALL FLOOR AND GROUND MOUNTED EQUIPMENT (SWITCHBOARDS, DISTRIBUTION PANELS, GENERATOR, CONTROL PANELS ETC.) TO BE PAD MOUNTED, PROVIDE CONCRETE PAD AS REQUIRED PER APPROVED EQUIPMENT SUBMITTAL, COORDINATE WITH ARCHITECT.
- G. COORDINATE WITH MECHANICAL FOR DISCONNECT SWITCHES SUPPLIED WITH THE EQUIPMENT, PROVIDE FOR ALL AS INDICATED IF NOT INCLUDED WITH THE EQUIPMENT.



P 586.469.3600 F 586.469.3607

PARTNERS

herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

CONSULTANT



Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| | ISSUES / REVISIONS | |
|--|----------------------|----------|
| | SCHEMATIC DESIGN | 01-28-20 |
| | BIDDING-CONSTRUCTION | 03-27-20 |
| | | |

CONSTRUCTION 05-04-2020 06-03-2020

CHECKED BY

APPROVED BY

SHEET NAME

ELECTRICAL RISER DIAGRAM

SHEET NO. **E0-02**

PROVIDE ALL UNUSED SPACE IN MAIN SWITCHBOARDS MDP AND ALL DISTRIBUTION PANELS DP'S FULLY BUSSED FOR FUTURE USE. PROVIDE CONCRETE PAD FOR ALL GROUND AND FLOOR MOUNTED EQUIPMENT:
DISTRIBUTION PANELS, TRANSFORMERS, ETC. CONCRETE PADS NOT SPECIFICALLY
INDICATED ON PLANS AND RISER DIA. REFER TO SPECIFICATIONS FOR EXACT
REQUIREMENTS. PROVIDE LIGHTING CONTROL RELAY PANEL AS REQUIRED TO CONTROL INTERIOR AND EXTERIOR LIGHTING AS SPECIFIED. PROVIDE GROUNDING AND BONDING PER NEC 250. BOND ALL GROUNDING ELECTRODES PRESENT IN THE BUILDING, INCLUDING CONCRETE ENCASED ELECTRODES (REBARS) AND BUILDING STEEL TO THE SYSTEM GROUND.

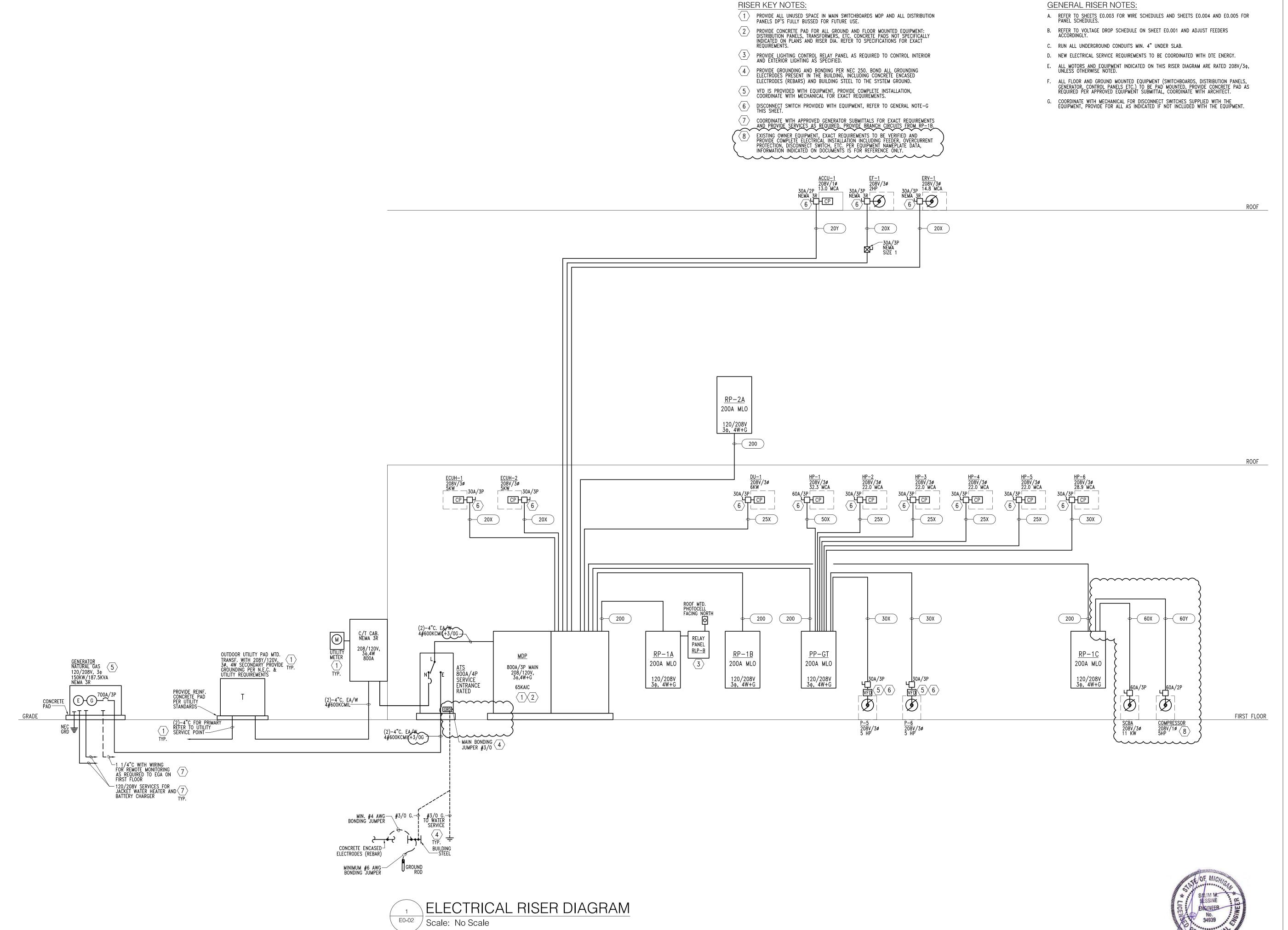
20X 20X 30A/3P CP 25X 30A/3P CP CP 25X 30A/3P CP 30X 30A/3P CP CP 25X 30A/3P CP 25X ROOF MTD.
PHOTOCELL
FACING NORTH - 200 200 --(30X) -(30X) 200 RELAY PANEL RLP-B OUTDOOR UTILITY PAD MTD.
TRANSF. WITH 208Y/120V,
3ø, 4W SECONDARY PROVIDE
GROUNDING PER N.E.C. &
UTILITY REQUIREMENTS <u>RP-1B</u> 200A MLO <u>PP-GT</u> 200A MLO <u>RP-1A</u> 200A MLO <u>RP-1C</u> 200A MLO 120/208V 3φ, 4W+G 120/208V 3φ, 4W+G 120/208V 3φ, 4W+G 65KAIC (1)(2) PROVIDE REINF. CONCRETE PAD PER UTILITY STANDARDS (2)-4°C. EA/W 4#600KCMIL FIRST FLOOR MAIN BONDING
JUMPER #3/0—

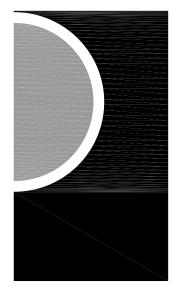


CONCRETE ENCASED ELECTRODES (REBAR)

MINIMUM #6 AWG-BONDING JUMPER







PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600
F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019





KEY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS
SCHEMATIC DESIGN

| 05-04-2020 |
|------------|
| 06-03-202 |
| 06-16-202 |
| |

DRAWN BY

NH

CHECKED BY EK

APPROVED BY

SHEET NAME

ELECTRICAL RISER DIAGRAM

SHEET NO.

LIGHTING FIXTURE SCHEDULE:

- LED RECESSED HIGH LUMEN 2'X4' TROFFER, 2.375" DEEP SHALLOW HOUSING, GRID CEILING MOUNTED, HIGH ANGLE LIGHTING DISTRIBUTION, CURVED LINEAR PRISM CENTER LENS WITH LOW GLARE, 120–277V, 0–10V DIMMING, 32W, 4000LM, 3500K, .

 ORACLE #0VHP-LED-4000L-DIM10-MVOLT-35K-85 OR APPROVED EQUAL.
- "AE" SAME AS "A" EXCEPT WITH BUILT-IN EMERGENCY BATTERY BACK-UP, MIN. 14W TO PROVIDE 1400LM FOR 90
- LED COVE LIGHT CONTINUOUS ROW PER ARCHITECTURAL DETAILS, EXTRUDED ALUMINUM HOUSING, 1.6"W X 1.4"H X L CLEAR POLYCARBONATE LENS, STAINLAESS STEEL FASTENERS, HIGH LUMEN PACKAGE PROVIDING 916 LM/FT, 3500K, 10 W/FT, 0-10V DIMMING, 277V. ECOSENSE TROV #L35-I-__-10-35-90-MULT-120-LDCM-PL-120-277-010V-GR OR APPROVED
- LED SURFACE MOUNTED STRIP FIXTURE, (SURFACE MOUNTED ON CEILINGS AND PENDANT MOUNTED IN OPEN CEILING AREAS), 4' LONG SMALL PROFILE, 22 GAUGE CONSTRUCTION WITH WHITE FINISH, 120-277V INPUT VOLTAGE, 35W, 0-10V DIMMING AND 4000LM AT 3500K.
 LITHONIA #CDS-L48-MVOLT-DM-35-80CRI-WH OR APPROVED EQUAL.
- SAME AS "C" EXCEPT WITH BUILT-IN EMERGENCY BATTERY BACK-UP, MIN. 14W TO PROVIDE 1400LM FOR 90 MINUTES.
- LED RECESSED DOWNLIGHT, 6" APERTURE, CLEAR SPECULAR LOW IRIDESCENT ALZK FINISH REFLECTOR AND WHITE TRIM, 120–277V INPUT VOLTAGE, 0–10V DIMMING CAPABILITY, 20W, 1500 LM WITH 3500°K. MAXILUME #HH6LED-1500L-MVOLT-35K-HH6-6501 OR APPROVED EQUAL.
- "D1" SAME AS TYPE "D" EXCEPT WET LOCATION SHOWER RATED LIGHTING FIXTURE.
- "D2" SAME AS TYPE "D" EXCEPT 46W, 4000 LM.
- "DE" SAME AS TYPE "D" WITH BUILT-IN EMERGENCY BATTERY BACK-UP, MIN. 10W TO PROVIDE 1000LM FOR 90
- "EA" LED EMERGENCY WALL MOUNTED BATTERY LIGHTING UNIT, 12V NI-CAD BATTERY WITH (2)-6W LED LAMPS, LIGHTALARMS OR APPROVED EQUAL.
- LED WALL MOUNTED 4' LONG, HOUSING IS ROLL FORMED FROM CODE—GAUGE STEEL, DECORATIVE DIE—CAST END, FINISHED EDGES AND UNIFORM LIGHT DISTRIBUTION. 120—277V, 0—10V DIMMING DRIVER AND 19W, 2000 LUMENS. FIXTURE DIMS TO APPROXIMATELY 10% LIGHT OUTPUT WHEN UNOCCUPIED. LITHONIA #WL4—20L—EZB—LP835—DIM10 OR APPROVED EQUAL.
- "FE" SAME AS "F" EXCEPT WITH UILT-IN EMERGENCY BATTERY BACK-UP, MIN. 14W TO PROVIDE 1400LM FOR 90
- IN GRADE 10" LED WALL WASH LIGHT, FLUSH WITH TOP OF FINISHED GRADE, BRUSHED STAINLESS STEEL, 3000K COLOR TEMP. 120-277V INPUT VOLTAGE, 20W, FLOOD DISTRIBUTION WITH FLAT LENS HYDREL # PDX10-BSS-18LED-WHT30K-MVOLT-FL-FLCSR OR APPROVED EQUAL
- LED HIGH BAY FIXTURE, UL WET LOCATION LISTED AND DLC QUALIFIED, 13" DIAMETER, BLACK FINISH, CLEAR LENS, 19000 LUMENS, 4000°K, 150W, UNIVERSAL VOLTAGE DRIVER, 0-10V DIMMING. ORACLE #ORHB1-LED-19000L-MVOLT-40K-WD-BK OR APPROVED EQUAL.
- LED DECORATIVE PENDANT MOUNTED LIGHTING FIXTURE, FINISHED SELECTED BY ARCHITECT/OWNER, 120V 0-10V DIMMING, 43W.
 BARN LIGHT ELECTRIC CO, 'WILCOX' SERIES:
 BLE-C-DBW16-100-SBK-100-SBK-NA-NA-NA-LED43-3500K-FL OR APPROVED EQUAL
- "IE" SAME AS "I" EXCEPT WITH BUILT-IN EMERGENCY BATTERY BACK-UP, MIN. 14W TO PROVIDE 1400LM FOR 90 MINUTES.
- LED WALL MOUNTED AT 16'AFF OR AS DIRECTED BY ARCHITECT, LUMINAIRE, WET LOCATION LISTED, ALUMINUM HOUSING, GOOSENECK MOUNTING STYLE, FINISHED SELECTED BY ARCHITECT/OWNER, 120V 0-10V DIMMING, 24W 3000LM. MBVA14-M024LDD-W-41-UNV SERIES OR APPROVED EQUAL
- LED DECORATIVE PENDANT MOUNTED LIGHTING FIXTURE, 0-10V DIMMING. 120V AND MAX. 30W. FINISHED SELECTED BY ARCHITECT/OWNER. BARN LIGHT ELECTRIC CO, 'WILCOX' SERIES: BLE-C-DBW12-100-SBK-100-SBK-NA-NA-NA-LED27-3500K-FL OR APPROVED EQUAL.
- LED WALL MOUNTED LUMINAIRE, WET LOCATION LISTED, ALUMINUM HOUSING, ALUMINUM DOOR FRAME WITH FLAT CLEAR POLYCARBONATE LENS, FULLY GASKETED, SHARP CUT-OFF WITH MEDIUM THROW DISTRIBUTION, 120V ELECTRONIC BALLAST, 42W TRT LAMP, BUILT-IN PHOTOCELL, BRONZE FINISH, MOUNT AT 10'-0" AFF OR AS DIRECTED BY ARCHITECT. LITHONIA #WST-LED-P2-40K-VF-MVOLT-PE-DDBXD OR APPROVED EQUAL.
- LED WALL MOUNTED LUMINAIRE, WET LOCATION LISTED, ALUMINUM HOUSING, ALUMINUM DOOR FRAME WITH FLAT CLEAR POLYCARBONATE LENS, FULLY GASKETED, SHARP CUT-OFF WITH MEDIUM THROW DISTRIBUTION, 120V ELECTRONIC BALLAST, 42W TRT LAMP, BUILT-IN PHOTOCELL AND EMERGENCY BALLAST, BRONZE FINISH, MOUNT AT 10'-0" AFF OR AS DIRECTED BY LITHONIA #WST-LED-P2-40K-VF-MVOLT-PE-E7WH-DDBXD OR APPROVED EQUAL
- "M" LED DECORATIVE TRACK LIGHTING FIXTURE, SINGLE CIRCUIT TO BE SELECTED BY ARCHITECT/OWNER, 120V MAX. 25W TRACK HEADS EACH. PROVIDE ALL MOUNTING HARDWARE, CONNECTORS, POWER SUPPLIES, ETC. AS REQUIRED, COORDINATE WITH ARCHITECT FOR MOUNTING TYPE AND HEIGHTS.
- LED UNDER CABINET LIGHTING FIXTURE, 9", 18", 24, 36", 48" LONG, PROVIDE FOR CONTINUOUS ROW AS INDICATED ON PLANS, FROSTED LENS, ALUMINUM FRAME 120-277V. HPF ELECTRONIC DIMMING DRIVER, MAX. 7W/FT, 330LM/FT.
 HALO HU10 #HU1024D930P OR APPROVED EQUAL.
- LED EXIT SIGN, SINGLE FACE, POLYCARBONATE HOUSING CONSTRUCTION, UNIVERSAL DIRECTIONAL ARROW KNOCKOUTS, FULLY OVERLAPPING LIGHT SEAL 6" HIGH RED LETTERS 25 YEAR LIFE LED LAMPS, 277 VOLT INPUT, 6 VOLT SEALED MAINTENANCE-FREE BATTERY 90 MINUTE DISCHARGE, 24 HOUR RECHARGE. LIGHTALARMS #QLXN500-R OR APPROVED EQUAL.
- "X1" SAME AS "X" EXCEPT COMBO UNIT WITH (2)—SIDE MOUNTED HEADS AND 24W EXTRA BATTERY CAPACITY.
 LIGHTALARMS #GR624M—R—U—2—LD1 OR APPROVED EQUAL.

| LIGHTING CO | ONTROL MA | TRIX SCH | FDULF |
|-------------|-----------|----------|-------|

| LIGHTING CONTROL TAG | ROOM/SPACE TYPE | CONTROLS | AUTOMATIC LIGHTING CONTROL | LOCAL CONTROL | MANUAL ON | PARTIAL AUTO ON | BI-LEVEL | SIDE LIGHT | IGHT Top Light | AUTOMATIC PARTIAL OFF (H APPLIES) | AUTOMATIC FULL OFF | SCHEDULED FULL OFF | NOTES |
|----------------------|--|------------------|-----------------------------------|------------------|--------------|--------------------|----------|------------|-------------------|--------------------------------------|-----------------------|-----------------------|--|
| BASED ON ASHRAE 90.1 | 1-2013 TABLE 9.6.1 - CONTROL FUNCTIONS | | | a | b | С | d | e | f | g | h | i | |
| LC1 | COMMUNITY/ KITCHEN/ LAUNDRY/ OFFICE | LOCAL/OS/ DIM | OCCUPANCY SENSOR | YES | YES | | YES | | | NO | YES | | * DAYLIGHT SENSORS AS REQUIRE |
| LC2 | FITNESS ROOM/ LIBRARY/ COMPUTER ROOM | LOCAL/OS/ DIM | OCCUPANCY SENSOR | YES | YES | | YES | * | | NO | YES | | * DAYLIGHT SENSORS AS REQUIRE |
| LC3 | CORRIDOR | LOCAL | RELAY PANEL TIMER (TIME CLOCK) | YES | NO | NO | NO | | | YES | | YES | REMOTE LOCAL CONTROLS FOR THE SAFETY OF THE RESIDENTS |
| LC4 | STAIRS | PARTIAL DIM | OCCUPANCY SENSOR | YES | NO | NO | YES | | | YES | NO | | OCC. SENSOR TO DIMM STAIR LIGHTING FIXTURES TO 50% |
| LC5 | UTILITY ROOM (ELEC./MECH./IT) | LOCAL | NONE | YES | YES | NO | NO | | | NO | NO | NO | |
| LC6 | STORAGE/ EQUIPMENT ROOM | LOCAL/OS | OCCUPANCY SENSOR | YES | YES | | NO | | | NO | YES | | |
| LC7 | LOBBY/ RECEPTION/ SEATING | LOCAL/DIM | RELAY PANEL TIMER (TIME CLOCK) | YES | NO | NO | NO | * | | NO | | YES | * DAYLIGHT SENSORS AS REQUIRE |
| LC8 | RESTROOM/TRASH ROOM | LOCAL/OS | OCCUPANCY SENSOR | YES | NO | NO | NO | | | NO | YES | | |
| | | | | | | | | | | | | | |

CONTRACTOR TO PROVIDE MOTION SENSORS, DAYLIGHT SENSORS, ROOM CONTROLLERS, AND ACCESSORIES AS REQUIRED FOR A FULLY OPERATIONAL INSTALLATION PER 2015 MICHIGAN ENERGY CODE. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO REVIEW MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO ROUGH—IN. PROVIDE ADDITIONAL ROOM CONTROLLERS/POWER PACKS AND ASSOCIATED WIRING FOR MULTIPLE SWITCH LEG LOCATIONS. SEE PLANS FOR EXACT SWITCH LEGS WITH—IN EACH AREA OR ROOM. ELECTRICAL CONTRACTOR SHALL PROVIDE LIGHTING CONTROL MANUFACTURER'S DEVICE LAYOUT AS PART OF SHOP DRAWINGS SUBMITTALS.

ELECTRICAL CONTRACTOR IS TO INCLUDE THE SCOPE OF A LIGHTING CONTROLS DESIGNER/INSTALLER AS SUBCONTRACTOR TO ELECTRICAL CONTRACTOR TO PROVIDE FINAL DESIGN, DOCUMENTATION, PROGRAMMING, AND INSTALLATION OF THE LIGHTING CONTROLS. CONTRACT DOCUMENTS INCLUDE INTERNEED FUNCTIONALITY ONLY.

TO PREVENT FALSE ACTIVATION, MOUNT CEILING MOUNT SENSORS AWAY FROM DIFFUSERS AND THE PATH OF STRONG AIR TURBULENCE A MINIMUM OF FOUR FEET FOR STANDARD SENSITIVITY AND SIX FEET FOR MAXIMUM SENSITIVITY.

PROVIDE THE QUANTITY OF ROOM CONTROLLERS AND POWER PACKS NEEDED TO CONTROL SWITCH LEGS AND VOLTAGES INDICATED. UNLESS OTHERWISE INDICATED, ADJUST MOTION SENSOR TIME TO TURN OFF CONTROLLED LIGHTING AFTER 20 MINUTES.

INCLUDE TESTING BY AN INDEPENDENT THIRD PARTY TESTING AGENCY OR INDEPENDENT COMMISSIONING AGENT AS REQUIRED BY THE MICHIGAN ENERGY CODE (ASHRAE 90.1-2013). TEST, CERTIFY AND PROVIDE DOCUMENTATION OF LIGHTING CONTROL DEVICES AND CONTROL SYSTEMS TO ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS, THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND ANSI/ASHRAE/IES STANDARD 90.1-2013, SECTION 9.4.3 FUNCTION TESTING).



CONDUIT & WIRE SCHEDULE

3-WIRE SYSTEM

CU | 1"C. 3#6 + 1#10G.

CU | 1 1/4"C. 3#4 + 1#10G.

CU | 1 1/4"C. 3#4 + 1#8G.

CU | 1 1/4"C. 3#3 + 1#8G.

CU | 1 1/4"C. 3#2 + 1#8G.

AL |2"C. 3#1/0 + 1#6G.

WIRE TAG

20X

25X

30X

35X

50X

55X

60X

70X

85X

(100X)

(600V & BELOW) 4-WIRE SYSTEM **CONDUIT & WIRE** WIRE TAG | CU/AL | CONDUIT & WIRE CU 3/4"C. 3#12 + 1#12G. (20) | CU |3/4"C. 4#12 + 1#12G (25) | CU |3/4"C. 4#10 + 1#10G. CU 3/4"C. 3#10 + 1#10G. (30) | CU |3/4"C. 4#10 + 1#10G. CU | 3/4"C. 3#10 + 1#10G. CU 3/4°C. 3#8 + 1#10G. (35) | CU |3/4"C. 4#8 + 1#10G. CU 3/4"C. 3#8 + 1#10G. 40) | CU |3/4"C. 4#8 + 1#10G. PARTNERS in Architecture, PLC (50) | CU |1"C. 3#6 + 1#10G. 65 MARKET STREET CU |3/4"C. 3#6 + 1#10G. (55) | CU |3/4"C. 4#6 + 1#10G. MOUNT CLEMENS, MI 48043 P 586.469.3600

60) | CU |1 1/4"C. 4#4 + 1#10G.

(70) | CU |1 1/4"C. 4#4 + 1#8G.

85) | CU |1 1/4"C. 4#3 + 1#8G.

100

(110

(125

150

175

(200

225

(250

(300

500

800

(1000)

(1200)

(1600)

CU |1 1/4"C. 4#2 + 1#8G.

AL | 2"C. 4#1/0 + 1#6G.

CU |1 1/2"C. 4#1 + 1#6G.

AL | 2"C. 4#10 + 1#4G.

CU 2"C. 4#1/0 + 1#6G.

AL 2"C. 4#2/0 + 1#4G.

CU 2"C. 4#1/0 + 1#6G.

AL 2"C. 4#3/0 + 1#4G.

CU 2"C. 4#2/0 + 1#6G.

CU 2"C. 4#3/0 + 1#6G.

AL | 2 1/2"C. 4#4/0 + 1#4G.

AL 3"C. 4#250KCMIL + 1#4G.

CU 2 1/2"C. 4#4/0 + 1#4G.

AL 3"C. 4#300KCMIL + 1#2G.

CU | 3"C. 4#250KCMIL + 1#4G.

AL 3"C. 4#350KCMIL + 1#2G.

CU 3"C. 4#350KCMIL + 1#4G.

AL 4"C. 4#500KCMIL + 1#2G.

CU 4"C. 4#500KCMIL + 1#3G.

AL (2) 2 1/2"C. EA/W 4#4/0

CU 4"C. 4#600KCMIL + 1#3G.

AL (2) 3"C. EA/W 4#250KCMIL

CU (2) 2 1/2"C. EA/W 4#4/0 + 1#2G.

AL (2) 3"C. EA/W 4#300KCMIL

CU (2) 3"C. EA/W 4#250KCMIL

(2) 3"C. EA/W 4#350KCMIL

(2) 4"C. EA/W 4#500KCMIL

CU (2) 4"C. EA/W 4#500KCMIL

AL (3) 3"C. EA/W 4#350KCMIL

+ 1#1/0G.

AL (3) 4"C. EA/W 4#500KCMIL

AL (3) 4"C. EA/W 4#600KCMIL

CU (3) 4"C. EA/W 4#600KCMIL

1#250KCMIL G.

+ 1#4/0G.

(4) 4"C. EA/W 4#500KCMIL +

(4) 4"C. EA/W 4#600KCMIL

(5) 4"C. EA/W 4#600KCMIL +

+ 1#1/0G.

+ 1#1/0G. CU (2) 3"C. EA/W 4#350KCMIL

+ 1#1/0G.

+ 1#3/0G. CU (2) 4"C. EA/W 4#600KCMIL

+ 1#3/0G. CU (3) 3"C. EA/W 4#400KCMIL

+ 1#2/0G.

+ 1#3/0G.

CU

+ 1#2G.

+ 1#1G.

Statement of Intellectual Property The ideas, concepts, drawings and thoughts conveyed

PARTNERS

F 586.469.3607

herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC, This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019



KEY PLAN

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| ISSUES / REVISIONS | |
|----------------------|-----------|
| SCHEMATIC DESIGN | 01-28-202 |
| BIDDING-CONSTRUCTION | 03-27-202 |
| | |
| CONSTRUCTION | 05-04-202 |

DRAWN BY

NH CHECKED BY

ΕK

APPROVED BY

WIRE AND LIGHTING FIXTURE SCHEDULES AND CONTROL MATRIX

SHEET NO. E0-03

GENERAL WIRING NOTES:

(800X

(1000X)

(1200X)

1600X

1. FOR 2-WIRE SYSTEMS USE Y AS SUFFIX, SIMILAR TO X FOR THE 3-WIRE SYSTEM.

. THE USE OF ALUMINUM WIRES HAVE TO BE APPROVED BY THE ENGINEER AND OWNER PRIOR TO BID, NO ALUMINUM WIRES ALLOWED FOR 100A AND LESS.

AL (3) 3"C. EA/W 3#350KCMIL + 1#3/0G.

CU (2) 4"C. EA/W 3#600KCMIL +

AL (3) 4"C. EA/W 3#500KCMIL + 1#3/0G.

CU (3) 3"C. EA/W 3#400KCMIL +

CU (3) 4°C. EA/W 3#600KCMIL + 1#3/0G.

AL (4) 4"C. EA/W 3#500KCMIL + 1#250KCMIL G.

CU (4) 4"C. EA/W 3#600KCMIL +

AL (5) 4"C. EA/W 3#600KCMIL + 1#350KCMIL G.

(3) 4"C. EA/W 3#600KCMIL +

ENGINEER

LIGHTING FIXTURE SCHEDULE:

- LED RECESSED HIGH LUMEN 2'X4' TROFFER, 2.375" DEEP SHALLOW HOUSING, GRID CEILING MOUNTED, HIGH ANGLE LIGHTING DISTRIBUTION, CURVED LINEAR PRISM CENTER LENS WITH LOW GLARE, 120-277V, 0-10V DIMMING, 32W, 4000LM, 3500K, .
 ORACLE #OVHP-LED-4000L-DIM10-MVOLT-35K-85 OR APPROVED EQUAL.
- "AE" SAME AS "A" EXCEPT WITH BUILT-IN EMERGENCY BATTERY BACK-UP, MIN. 14W TO PROVIDE 1400LM FOR 90 MINUTES.
- LED COVE LIGHT CONTINUOUS ROW PER ARCHITECTURAL DETAILS, EXTRUDED ALUMINUM HOUSING, 1.6"W X 1.4"H X L CLEAR POLYCARBONATE LENS, STAINLAESS STEEL FASTENERS, HIGH LUMEN PACKAGE PROVIDING 916 LM/FT, 3500K, 10 W/FT, 0-10V DIMMING, 277V. ECOLAL TROV #L35-I-__-10-35-90-MULT-120-LDCM-PL-120-277-010V-GR OR APPROVED FOLIAL
- LED SURFACE MOUNTED STRIP FIXTURE, (SURFACE MOUNTED ON CEILINGS AND PENDANT MOUNTED IN OPEN CEILING AREAS), 4' LONG SMALL PROFILE, 22 GAUGE CONSTRUCTION WITH WHITE FINISH, 120–277V INPUT VOLTAGE, 35W, 0–10V DIMMING AND 4000LM AT 3500K. LITHONIA #CDS-L48-MVOLT-DM-35-80CRI-WH OR APPROVED EQUAL.
- "CE" SAME AS "C" EXCEPT WITH REMOTE EMERGENCY BATTERY BACK-UP, MIN. 14W TO PROVIDE 1400LM FOR 90 MINUTES.
- LED RECESSED DOWNLIGHT, 6" APERTURE, CLEAR SPECULAR LOW IRIDESCENT ALZK FINISH REFLECTOR AND WHITE TRIM, 120-277V INPUT VOLTAGE, 0-10V DIMMING CAPABILITY, 20W, 1500 LM WITH 3500°K. MAXILUME #HH6LED-1500L-MVOLT-35K-HH6-6501 OR APPROVED EQUAL.
- "D1" SAME AS TYPE "D" EXCEPT WET LOCATION SHOWER RATED LIGHTING FIXTURE
- "D2" SAME AS TYPE "D" EXCEPT 46W, 4000 LM.
- "DE" SAME AS TYPE "D" WITH BUILT-IN EMERGENCY BATTERY BACK-UP, MIN. 10W TO PROVIDE 1000LM FOR 90 MINUTES.
- "EA" LED EMERGENCY WALL MOUNTED BATTERY LIGHTING UNIT, 12V NI—CAD BATTERY WITH (2)—6W LED LAMPS, WHITE FINISH.
 LIGHTALARMS OR APPROVED EQUAL.
- LED WALL MOUNTED 4' LONG, HOUSING IS ROLL FORMED FROM CODE-GAUGE STEEL, DECORATIVE DIE-CAST END, FINISHED EDGES AND UNIFORM LIGHT DISTRIBUTION. 120-277V, 0-10V DIMMING DRIVER AND 19W, 2000 LUMENS. FIXTURE DIMS TO APPROXIMATELY 10% LIGHT OUTPUT WHEN UNOCCUPIED. LITHONIA #WL4-20L-EZB-LP835-DIM10 OR APPROVED EQUAL.
- "FE" SAME AS "F" EXCEPT WITH UILT-IN EMERGENCY BATTERY BACK-UP, MIN. 14W TO PROVIDE 1400LM FOR 90 MINUTES.
- IN GRADE 10" LED WALL WASH LIGHT, FLUSH WITH TOP OF FINISHED GRADE, BRUSHED STAINLESS STEEL, 3000K COLOR TEMP. 120-277V INPUT VOLTAGE, 20W, FLOOD DISTRIBUTION WITH FLAT LENS FROSTED. HYDREL # PDX10-BSS-18LED-WHT30K-MVOLT-FL-FLCSR OR APPROVED EQUAL
- LED HIGH BAY FIXTURE, UL WET LOCATION LISTED AND DLC QUALIFIED, 13" DIAMETER, BLACK FINISH, CLEAR LENS, 19000 LUMENS, 4000°K, 150W, UNIVERSAL VOLTAGE DRIVER, 0-10V DIMMING. ORACLE #ORHB1-LED-19000L-MVOLT-40K-WD-BK OR APPROVED EQUAL.
- LED DECORATIVE PENDANT MOUNTED LIGHTING FIXTURE, DIE-CAST ALUMINUM HOUSING, ALUMINUM REFLECTOR, BLACK EXTERIOR AND WHITE INTERIOR REFLECTOR FINISH OR AS DIRECTED BY ARCHITEÇT/OWNER, FROSTED LENS HIGH LUM120V 0-10V DIMMING, 97W, 9697LM.

 DELRAY 'LUMA PENDANT' #IL793-K-W-H APPROVED EQUAL
- "IE" SAME AS "I" EXCEPT WITH EMERGENCY BATTERY BACK-UP, MIN. 14W TO PROVIDE 1400LM FOR 90
- LED WALL MOUNTED AT 16'AFF OR AS DIRECTED BY ARCHITECT, LUMINAIRE, WET LOCATION LISTED, ALUMINUM HOUSING, GOOSENECK MOUNTING STYLE, FINISHED SELECTED BY ARCHITECT/OWNER, 120V 0-10V DIMBING, 24W 3000LM. MBVA14-M024LDD-W-41-UNV SERIES OR APPROVED EQUAL
- LED DECORATIVE PENDANT MOUNTED LIGHTING FIXTURE, 0-10V DIMMING. 120V AND MAX. 30W. FINISHED SELECTED BY ARCHITECT/OWNER.
 BARN LIGHT ELECTRIC CO, 'WILCOX' SERIES: BLE-C-DBW12-100-SBK-100-SBK-NA-NA-NA-LED27-3500K-FL OR APPROVED EQUAL.
- LED WALL MOUNTED LUMINAIRE, WET LOCATION LISTED, ALUMINUM HOUSING, ALUMINUM DOOR FRAME WITH FLAT CLEAR POLYCARBONATE LENS, FULLY GASKETED, SHARP CUT-OFF WITH MEDIUM THROW DISTRIBUTION, 120V ELECTRONIC BALLAST, 42W TRT LAMP, BUILT-IN PHOTOCELL, BRONZE FINISH, MOUNT AT 10'-0" AFF OR AS DIRECTED BY ARCHITECT.
 LITHONIA #WST-LED-P2-40K-VF-MVOLT-PE-DDBXD OR APPROVED EQUAL.
- LED WALL MOUNTED LUMINAIRE, WET LOCATION LISTED, ALUMINUM HOUSING, ALUMINUM DOOR FRAME WITH FLAT CLEAR POLYCARBONATE LENS, FULLY GASKETED, SHARP CUT-OFF WITH MEDIUM THROW DISTRIBUTION, 120V ELECTRONIC BALLAST, 42W TRT LAMP, BUILT-IN PHOTOCELL AND EMERGENCY BALLAST, BRONZE FINISH, MOUNT AT 10'-0" AFF OR AS DIRECTED BY ARCHITECT. LITHONIA #WST-LED-P2-40K-VF-MVOLT-PE-E7WH-DDBXD OR APPROVED EQUAL.
- "M" (LED DECORATIVE TRACK LIGHTING FIXTURE, 4FT LONG TRACK, SINGLE CIRCUIT, BLACK FINISH, CONE TRACK HEAD, BLACK FINISH, UNIVERSAL NARROW FLOOD AND FLOOR DISTRIBUTION, 120V, 10W LED, 800 LUMENS, INTEGRATED DIMMING DRIVER. PROVIDE ALL MOUNTING HARDWARE, CONNECTORS, POWER SUPPLIES, ETC. AS REQUIRED, COORDINATE WITH ARCHITECT FOR MOUNTING TYPE AND HEIGHTS.

 JUNO TRAC-MASTER #T4FT-BL AND #R600L-G2-PDIM-UNF-BL SERIES OR APPROVED EQUAL.
- LED UNDER CABINET LIGHTING FIXTURE, 9", 18", 24, 36", 48" LONG, PROVIDE FOR CONTINUOUS ROW AS INDICATED ON PLANS, FROSTED LENS, ALUMINUM FRAME 120–277V. HPF ELECTRONIC DIMMING DRIVER, MAX. 7W/FT, 330LM/FT.
 HALO HU10 #HU1024D930P OR APPROVED EQUAL.
- LED OUTDOOR WALL MOUNTED LIGHTING FIXTURE, 30.8" LONG, WET LOCATION RATED, ALUMINUM HOUSING, MULLION MOUNTABLE FULL CUT-OFF, 120-277V HPF ELECTRONIC DRIVER LOW TEMPERATURE RATED, 20W LED AND REMOTE EMERGENCY BATTERY PACK 1000LM FOR 90 MIN, LOCATE BATTERY INDOOR ABOVE ACCESSIBLE CEILING.

 LUMINAIRE LED 'BLADE' SERIES #BLD-24IN-20W-MVOLT-EMB2OR OR APPROVED EQUAL.

 LED EXIT SIGN, SINGLE FACE, POLYCARBONATE HOUSING CONSTRUCTION, UNIVERSAL DIRECTIONAL ARROW KNOCKOUTS, FULLY OVERLAPPING LIGHT SEAL 6" HIGH RED LETTERS 25 EAR LIFE LED LAMPS, 277 VOLT INPUT, 6 VOLT SEALED MAINTENANCE-FREE BATTERY 90 MINUN LIGHTALARMS #QLXN500-R OR APPROVED EQUAL.
- "X1" SAME AS "X" EXCEPT COMBO UNIT WITH (2)—SIDE MOUNTED HEADS AND 24W EXTRA BATTERY REMOTE CAPACITY.

 LIGHTALARMS #GR624M—R—U—2—LD1 OR APPROVED EQUAL.
- SAME AS "X" EXCEPT EDGE LIT COMBO UNIT WITH (2)-HIGH OUTPUT LED HEADS, VERIFY EXACT LIGHTALARMS #8NYC3RM-2HO OR APPROVED EQUAL.

| LIGHTING | CONTROL | MATRIX S | CHEDITIE | |
|----------|----------|----------|----------|--|
| LIGITING | CONTINUE | | | |

| LIGHTING CONTROL TAG | ROOM/SPACE TYPE | CONTROLS | AUTOMATIC LIGHTING CONTROL | LOCAL CONTROL | MANUAL ON | PARTIAL AUTO ON | BI-LEVEL | DAYL SIDE LIGHT | | AUTOMATIC PARTIAL OFF (H APPLIES) | AUTOMATIC FULL OFF | SCHEDULED FULL OFF | NOTES |
|-------------------------|--|------------------|-----------------------------------|------------------|--------------|--------------------|----------|--------------------|---|--------------------------------------|-----------------------|-----------------------|---|
| BASED ON ASHRAE 90. | 1-2013 TABLE 9.6.1 - CONTROL FUNCTIONS | | | a | b | С | d | e | f | g | h | i | |
| LC1 | COMMUNITY/ KITCHEN/ LAUNDRY/ OFFICE | LOCAL/OS/ DIM | OCCUPANCY SENSOR | YES | YES | | YES | * | | NO | YES | | * DAYLIGHT SENSORS AS REQUIRE |
| LC2 | FITNESS ROOM/ LIBRARY/ COMPUTER ROOM | LOCAL/OS/ DIM | OCCUPANCY SENSOR | YES | YES | | YES | * | | NO | YES | | * DAYLIGHT SENSORS AS REQUIRE |
| LC3 | CORRIDOR | LOCAL | RELAY PANEL TIMER (TIME CLOCK) | YES | NO | NO | NO | | | YES | | YES | REMOTE LOCAL CONTROLS FOR TH SAFETY OF THE RESIDENTS |
| LC4 | STAIRS | PARTIAL DIM | OCCUPANCY SENSOR | YES | NO | NO | YES | | | YES | NO | | OCC. SENSOR TO DIMM STAIR LIGHTING FIXTURES TO 50% |
| LC5 | UTILITY ROOM (ELEC./MECH./IT) | LOCAL | NONE | YES | YES | NO | NO | | | NO | NO | NO | |
| LC6 | STORAGE/ EQUIPMENT ROOM | LOCAL/OS | OCCUPANCY SENSOR | YES | YES | | NO | | | NO | YES | | |
| LC7 | LOBBY/ RECEPTION/ SEATING | LOCAL/DIM | RELAY PANEL TIMER (TIME CLOCK) | YES | NO | NO | NO | * | | NO | | YES | * DAYLIGHT SENSORS AS REQUIRE |
| LC8 | RESTROOM/TRASH ROOM | LOCAL/OS | OCCUPANCY SENSOR | YES | NO | NO | NO | | | NO | YES | | |
| | | | | | | | | | | | | | |
| LIGHTING CONTROL | · | LOCAL/OS | OCCUPANCY SENSOR | YES | NO | NO | NO | | | NO | YES | | |

- CONTRACTOR TO PROVIDE MOTION SENSORS, DAYLIGHT SENSORS, ROOM CONTROLLERS, AND ACCESSORIES AS REQUIRED FOR A FULLY OPERATIONAL INSTALLATION PER 2015 MICHIGAN ENERGY CODE. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO REVIEW MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO ROUGH—IN. PROVIDE ADDITIONAL ROOM CONTROLLERS/POWER PACKS AND ASSOCIATED WIRING FOR MULTIPLE SWITCH LEG LOCATIONS. SEE PLANS FOR EXACT SWITCH LEGS WITH—IN EACH AREA OR ROOM. ELECTRICAL CONTRACTOR SHALL PROVIDE LIGHTING CONTROL MANUFACTURER'S DEVICE LAYOUT AS PART OF SHOP DRAWINGS SUBMITTALS.
- ELECTRICAL CONTRACTOR IS TO INCLUDE THE SCOPE OF A LIGHTING CONTROLS DESIGNER/INSTALLER AS SUBCONTRACTOR TO ELECTRICAL CONTRACTOR TO PROVIDE FINAL DESIGN, DOCUMENTATION, PROGRAMMING, AND INSTALLATION OF THE LIGHTING CONTROLS. CONTRACT DOCUMENTS INCLUDE INTENDED FUNCTIONALITY ONLY.
- TO PREVENT FALSE ACTIVATION, MOUNT CEILING MOUNT SENSORS AWAY FROM DIFFUSERS AND THE PATH OF STRONG AIR TURBULENCE A MINIMUM OF FOUR FEET FOR STANDARD SENSITIVITY AND SIX FEET FOR MAXIMUM SENSITIVITY.
- PROVIDE THE QUANTITY OF ROOM CONTROLLERS AND POWER PACKS NEEDED TO CONTROL SWITCH LEGS AND VOLTAGES INDICATED.
- UNLESS OTHERWISE INDICATED, ADJUST MOTION SENSOR TIME TO TURN OFF CONTROLLED LIGHTING AFTER 20 MINUTES. INCLUDE TESTING BY AN INDEPENDENT THIRD PARTY TESTING AGENCY OR INDEPENDENT COMMISSIONING AGENT AS REQUIRED BY THE MICHIGAN ENERGY CODE (ASHRAE 90.1-2013). TEST, CERTIFY AND PROVIDE DOCUMENTATION OF LIGHTING CONTROL DEVICES AND CONTROL SYSTEMS TO ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS, THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND ANSI/ASHRAE/IES STANDARD 90.1-2013, SECTION 9.4.3 FUNCTION TESTING).
- INTEGRATE CONTROLS FOR UNDERCABINET LIGHTING TO PROVIDE AS MANUAL ON/AUTOMATIC OFF BY SAME SENSOR(S) SERVING GENERAL LIGHTING IN SPACE/ROOM.
- 10. IN ROOMS WITH PARTIAL ON CONTROL, PROGRAM ASSOCIATED SWITCH FOR FULL ON AND MANUAL OFF IN ADDITION TO AUTOMATIC OFF VIA OCCUPANCY SENSOR. 1. FOR AUTOMATIC DAYLIGHT RESPONSIVE CONTROLS SET DAYLIGHT SENSOR TO MAINTAIN THE SAME LIGHTING LEVELS AS THE LEVELS OUTSIDE THE DAYLIGHT AREA.

CONDUIT & WIRE SCHEDULE (600V & BELOW)

WIRE TAG | CU/AL |

4-WIRE SYSTEM

(20) | CU |3/4"C. 4#12 + 1#12G.

25) | CU |3/4"C. 4#10 + 1#10G.

(30) | CU |3/4"C. 4#10 + 1#10G.

(35) | CU |3/4"C. 4#8 + 1#10G.

40) | CU | 3/4"C. 4#8 + 1#10G.

55) | CU | 3/4"C. 4#6 + 1#10G.

60) | CU |1 1/4"C. 4#4 + 1#10G.

(70) | CU |1 1/4"C. 4#4 + 1#8G.

85) | CU |1 1/4"C. 4#3 + 1#8G.

100

(110

(125

150

CU |1 1/4"C. 4#2 + 1#8G.

AL | 2"C. 4#1/0 + 1#6G.

CU |1 1/2"C. 4#1 + 1#6G.

AL | 2"C. 4#10 + 1#4G.

CU $|2^{\circ}C.4|/0 + 1|6G.$

AL |2°C. 4#2/0 + 1#4G.

CU 2"C. 4#1/0 + 1#6G.

CU (3) 4"C. EA/W 4#600KCMIL

(4) 4"C. EA/W 4#500KCMIL +

(5) 4"C. EA/W 4#600KCMIL +

(4) 4"C. EA/W 4#600KCMIL

+ 1#3/0G.

CU

1#250KCMIL G.

+ 1#4/0G.

(1200)

(1600)

(50) | CU |1"C. 3#6 + 1#10G.

CONDUIT & WIRE

3-WIRE SYSTEM

CU |3/4"C. 3#12 + 1#12G.

CU |3/4°C. 3#10 + 1#10G.

CU | 3/4"C. 3#10 + 1#10G.

CU |3/4"C. 3#8 + 1#10G.

CU 3/4"C. 3#8 + 1#10G.

CU | 1"C. 3#6 + 1#10G.

CU | 3/4"C. 3#6 + 1#10G.

CU | 1 1/4"C. 3#4 + 1#10G.

CU | 1 1/4"C. 3#4 + 1#8G.

CU | 1 1/4"C. 3#3 + 1#8G.

CU | 1 1/4"C. 3#2 + 1#8G.

AL |2"C. 3#1/0 + 1#6G.

CU | 1 1/2"C. 3#1 + 1#6G.

AL | 2"C. 3#10 + 1#4G.

CU $|2^{\circ}C. 3\#1/0 + 1\#6G.$

AL $|2^{\circ}C. 3\#2/0 + 1\#4G.$

CU $|2^{\circ}C. 3\#1/0 + 1\#6G.$

CONDUIT & WIRE

WIRE TAG

20X

25X

30X

35X

50X

55X

60X

70X

85X

100X

(110X)

(125X)

150X

PARTNERS

PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

Statement of Intellectual Property

F 586.469.3607

herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



KEY PLAN

OWNER

Green Oak Charter Township

PROJECT NAME

Green Oak Fire Station No. 81

9384 Whitmore Lake Road Brighton, MI 48116

PROJECT NO.

19-129

ISSUES / REVISIONS

| CCD #4 | 09-01-2020 |
|--------|------------|
| | |
| | _ |
| | |
| | |
| | |
| | |

DRAWN BY

NH

CHECKED BY ΕK

APPROVED BY

SHEET NAME WIRE AND LIGHTING FIXTURE SCHEDULES

AND CONTROL MATRIX

SHEET NO. E0-03

AL $|2^{\circ}C. 3\#3/0 + 1\#4G.$ AL $|2^{\circ}C.4#3/0 + 1#4G.$ CU 2"C. 4#2/0 + 1#6G. CU |2°C. 3#2/0 + 1#6G175X 175 AL | 2 1/2"C. 3#4/0 + 1#4G. AL | 2 1/2"C. 4#4/0 + 1#4G. CU 2"C. 4#3/0 + 1#6G. CU | 2°C. 3#3/0 + 1#6G. (200X) (200 AL | 3"C. 3#250KCMIL + 1#4G. AL 3"C. 4#250KCMIL + 1#4G. CU |2 1/2"C. 4#4/0 + 1#4G. CU | 2 1/2"C. 3#4/0 + 1#4G. (225X) 225 AL 3"C. 3#300KCMIL + 1#2G. AL 3"C. 4#300KCMIL + 1#2G. CU | 3"C. 3#250KCMIL + 1#4G. CU | 3"C. 4#250KCMIL + 1#4G. (250X) (250 AL 3"C. 3#350KCMIL + 1#2G. AL 3"C. 4#350KCMIL + 1#2G. CU 3"C. 4#350KCMIL + 1#4G. CU 3"C. 3#350KCMIL + 1#4G. 300X (300 AL 4"C. 3#500KCMIL + 1#2G. AL 4"C. 4#500KCMIL + 1#2G. CU 4"C. 3#500KCMIL + 1#3G. CU 4"C. 4#500KCMIL + 1#3G. 350X AL (2) 2 1/2°C. EA/W 4#4/0 (2) 2 1/2°C. EA/W 3#4/0 + 1#1G. CU 4"C. 3#600KCMIL + 1#3G. CU 4"C. 4#600KCMIL + 1#3G. 400X AL (2) 3"C. EA/W 4#250KCMIL (2) 3"C. EA/W 3#250KCMIL CU (2) 2 1/2"C. EA/W 3#4/0 CU (2) 2 1/2"C. EA/W 4#4/0 + 1#2G. AL (2) 3"C. EA/W 4#300KCMIL + 1#2G. 450X (2) 3"C. EA/W 3#300KCMIL + 1#1/0G. + 1#1/0G. CU (2) 3"C. EA/W 4#250KCMIL (2) 3"C. EA/W 3#250KCMIL CU + 1#2G. (2) 3"C. EA/W 3#350KCMIL (2) 3"C. EA/W 4#350KCMIL + 1#1/0G. + 1#1/0G. CU (2) 3"C. EA/W 4#350KCMIL (2) 3"C. EA/W 3#350KCMIL 600X (2) 4"C. EA/W 4#500KCMIL (2) 4"C. EA/W 3#500KCMIL CU (2) 4"C. EA/W 4#500KCMIL (2) 4"C. EA/W 3#500KCMIL + 1#1/0G. + 1#1/0G. (700X) AL (3) 3"C. EA/W 4#350KCMIL AL (3) 3"C. EA/W 3#350KCMIL + 1#3/0G. + 1#3/0G. CU (2) 4"C. EA/W 4#600KCMIL CU (2) 4"C. EA/W 3#600KCMIL + + 1#1/0G.

AL (3) 4"C. EA/W 4#500KCMIL (800X) 800 AL (3) 4"C. EA/W 3#500KCMIL + 1#3/0G. + 1#3/0G. CU (3) 3"C. EA/W 4#400KCMIL CU (3) 3"C. EA/W 3#400KCMIL + + 1#2/0G. (1000X) (1000) AL (3) 4"C. EA/W 4#600KCMIL (3) 4"C. EA/W 3#600KCMIL +

GENERAL WIRING NOTES:

(1200X)

1600X

1. FOR 2-WIRE SYSTEMS USE Y AS SUFFIX, SIMILAR TO X FOR THE 3-WIRE SYSTEM.

CU (3) 4°C. EA/W 3#600KCMIL + 1#3/0G.

AL (4) 4"C. EA/W 3#500KCMIL + 1#250KCMIL G.

CU (4) 4"C. EA/W 3#600KCMIL +

AL (5) 4"C. EA/W 3#600KCMIL + 1#350KCMIL G.

. THE USE OF ALUMINUM WIRES HAVE TO BE APPROVED BY THE ENGINEER AND OWNER PRIOR TO BID, NO ALUMINUM WIRES ALLOWED FOR 100A AND LESS.

LIGHTING FIXTURE SCHEDULE:

- "A" LED RECESSED HIGH LUMEN 2'X4' TROFFER, 2.375" DEEP SHALLOW HOUSING, GRID CEILING MOUNTED, HIGH ANGLE LIGHTING DISTRIBUTION, CURVED LINEAR PRISM CENTER LENS WITH LOW GLARE, 120-277V, 0-10V DIMMING, 32W, 4000LM, 3500K, .
 ORACLE #OVHP-LED-4000L-DIM10-MVOLT-35K-85 OR APPROVED EQUAL.
- "AE" SAME AS "A" EXCEPT WITH BUILT-IN EMERGENCY BATTERY BACK-UP, MIN. 14W TO PROVIDE 1400LM FOR 90 MINUTES.

 "A1" LED RECESSED LAY-IN 2'X4' FLAT PANEL LIGHTING FIXTURE, LOW PROFILE, WHIT FINISH, ALUMINUM FRAME, SATIN LENS, DAMP LOCATION IP5X RATED, 120-277V, 0-10V DIMMING DRIVER, 6000LM, 52W. LITHONIA #CPANL-2X4-60KN SERIES OR APPROVED EQUAL.
- Naie" Same as type "ai" except with emergency battery pack, 10w to provide 1000lm for 90 MINUTES.
- "B" LED COVE LIGHT CONTINUOUS ROW PER ARCHITECTURAL DETAILS, EXTRUDED ALUMINUM HOUSING, 1.6"W X 1.4"H X L CLEAR POLYCARBONATE LENS, STAINLAESS STEEL FASTENERS, HIGH LUMEN PACKAGE PROVIDING 916 LM/FT, 3500K, 10 W/FT, 0-10V DIMMING, 277V. ECOSENSE TROV #L35-I-__-10-35-90-MULT-120-LDCM-PL-120-277-010V-GR OR APPROVED FOLIAL
- "C" LED SURFACE MOUNTED STRIP FIXTURE, (SURFACE MOUNTED ON CEILINGS AND PENDANT MOUNTED IN OPEN CEILING AREAS), 4' LONG SMALL PROFILE, 22 GAUGE CONSTRUCTION WITH WHITE FINISH, 120–277V INPUT VOLTAGE, 35W, 0–10V DIMMING AND 4000LM AT 3500K. LITHONIA #CDS-L48-MVOLT-DM-35-80CRI-WH OR APPROVED EQUAL.
- "CE" SAME AS "C" EXCEPT WITH REMOTE EMERGENCY BATTERY BACK-UP, MIN. 14W TO PROVIDE 1400LM FOR 90 MINUTES.
- "D" LED RECESSED DOWNLIGHT, 6" APERTURE, CLEAR SPECULAR LOW IRIDESCENT ALZK FINISH REFLECTOR AND WHITE TRIM, 120-277V INPUT VOLTAGE, 0-10V DIMMING CAPABILITY, 20W, 1500 LM WITH 3500°K.

 MAXILUME #HH6LED-1500L-MVOLT-35K-HH6-6501 OR APPROVED EQUAL.
- "D1" SAME AS TYPE "D" EXCEPT WET LOCATION SHOWER RATED LIGHTING FIXTURE.
- "D2" SAME AS TYPE "D" EXCEPT 46W, 4000 LM.
- "DE" SAME AS TYPE "D" WITH BUILT-IN EMERGENCY BATTERY BACK-UP, MIN. 10W TO PROVIDE 1000LM FOR 90 MINUTES.
- "EA" LED EMERGENCY WALL MOUNTED BATTERY LIGHTING UNIT, 12V NI—CAD BATTERY WITH (2)—6W LED LAMPS, WHITE FINISH.
 LIGHTALARMS OR APPROVED EQUAL.
- "F" LED WALL MOUNTED 4' LONG, HOUSING IS ROLL FORMED FROM CODE-GAUGE STEEL, DECORATIVE DIE-CAST END, FINISHED EDGES AND UNIFORM LIGHT DISTRIBUTION. 120-277V, 0-10V DIMMING DRIVER AND 19W, 2000 LUMENS. FIXTURE DIMS TO APPROXIMATELY 10% LIGHT OUTPUT WHEN UNOCCUPIED. LITHONIA #WL4-20L-EZB-LP835-DIM10 OR APPROVED EQUAL.
- "FE" SAME AS "F" EXCEPT WITH UILT-IN EMERGENCY BATTERY BACK-UP, MIN. 14W TO PROVIDE 1400LM FOR 90 MINUTES.
- "G" IN GRADE 10" LED WALL WASH LIGHT, FLUSH WITH TOP OF FINISHED GRADE, BRUSHED STAINLESS STEEL, 3000K COLOR TEMP. 120-277V INPUT VOLTAGE, 20W, FLOOD DISTRIBUTION WITH FLAT LENS FROSTED.

 HYDREL # PDX10-BSS-18LED-WHT30K-MVOLT-FL-FLCSR OR APPROVED EQUAL
- "H" LED HIGH BAY FIXTURE, UL WET LOCATION LISTED AND DLC QUALIFIED, 13" DIAMETER, BLACK FINISH, CLEAR LENS, 19000 LUMENS, 4000°K, 150W, UNIVERSAL VOLTAGE DRIVER, 0-10V DIMMING. ORACLE #ORHB1-LED-19000L-MVOLT-40K-WD-BK OR APPROVED EQUAL.
- "I" LED DECORATIVE PENDANT MOUNTED LIGHTING FIXTURE, DIE-CAST ALUMINUM HOUSING, ALUMINUM REFLECTOR, BLACK EXTERIOR AND WHITE INTERIOR REFLECTOR FINISH OR AS DIRECTED BY ARCHITECT/OWNER, FROSTED LENS HIGH LUM120V 0-10V DIMMING, 97W, 9697LM.

 DELRAY 'LUMA PENDANT' #IL793-K-W-H APPROVED EQUAL
- "IE" SAME AS "I" EXCEPT WITH EMERGENCY BATTERY BACK-UP, MIN. 14W TO PROVIDE 1400LM FOR 90
- "J" LED WALL MOUNTED AT 16'AFF OR AS DIRECTED BY ARCHITECT, LUMINAIRE, WET LOCATION LISTED, ALUMINUM HOUSING, GOOSENECK MOUNTING STYLE, FINISHED SELECTED BY ARCHITECT/OWNER, 120V 0-10V DIMMING, 24W 3000LM.

 MBVA14-M024LDD-W-41-UNV SERIES OR APPROVED EQUAL
- "K" LED DECORATIVE PENDANT MOUNTED LIGHTING FIXTURE, 0-10V DIMMING. 120V AND MAX. 30W. FINISHED SELECTED BY ARCHITECT/OWNER. BARN LIGHT ELECTRIC CO, 'WILCOX' SERIES: BLE-C-DBW12-100-SBK-100-SBK-NA-NA-NA-LED27-3500K-FL OR APPROVED EQUAL.
- "L" LED WALL MOUNTED LUMINAIRE, WET LOCATION LISTED, ALUMINUM HOUSING, ALUMINUM DOOR FRAME WITH FLAT CLEAR POLYCARBONATE LENS, FULLY GASKETED, SHARP CUT-OFF WITH MEDIUM THROW DISTRIBUTION, 120V ELECTRONIC BALLAST, 42W TRT LAMP, BUILT-IN PHOTOCELL, BRONZE FINISH, MOUNT AT 10'-0" AFF OR AS DIRECTED BY ARCHITECT.

 LITHONIA #WST-LED-P2-40K-VF-MVOLT-PE-DDBXD OR APPROVED EQUAL.
- "LE" LED WALL MOUNTED LUMINAIRE, WET LOCATION LISTED, ALUMINUM HOUSING, ALUMINUM DOOR FRAME WITH FLAT CLEAR POLYCARBONATE LENS, FULLY GASKETED, SHARP CUT-OFF WITH MEDIUM THROW DISTRIBUTION, 120V ELECTRONIC BALLAST, 42W TRT LAMP, BUILT-IN PHOTOCELL AND EMERGENCY BALLAST, BRONZE FINISH, MOUNT AT 10'-0" AFF OR AS DIRECTED BY ARCHITECT. LITHONIA #WST-LED-P2-40K-VF-MVOLT-PE-E7WH-DDBXD OR APPROVED EQUAL.
- "M" LED DECORATIVE TRACK LIGHTING FIXTURE, 4FT LONG TRACK, SINGLE CIRCUIT, BLACK FINISH, CONE TRACK HEAD, BLACK FINISH, UNIVERSAL NARROW FLOOD AND FLOOR DISTRIBUTION, 120V, 10W LED, 800 LUMENS, INTEGRATED DIMMING DRIVER. PROVIDE ALL MOUNTING HARDWARE, CONNECTORS, POWER SUPPLIES, ETC. AS REQUIRED, COORDINATE WITH ARCHITECT FOR MOUNTING TYPE AND HEIGHTS. JUNO 'TRAC-MASTER' #T4FT-BL AND #R600L-G2-PDIM-UNF-BL SERIES OR APPROVED EQUAL.
- "N" LED UNDER CABINET LIGHTING FIXTURE, 9", 18", 24, 36", 48" LONG, PROVIDE FOR CONTINUOUS ROW AS INDICATED ON PLANS, FROSTED LENS, ALUMINUM FRAME 120-277V. HPF ELECTRONIC DIMMING DRIVER, MAX. 7W/FT, 330LM/FT.
 HALO HU10 #HU1024D930P OR APPROVED EQUAL.
- "OE" LED OUTDOOR WALL MOUNTED LIGHTING FIXTURE, 30.8" LONG, WET LOCATION RATED, ALUMINUM HOUSING, MULLION MOUNTABLE FULL CUT-OFF, 120-277V HPF ELECTRONIC DRIVER LOW TEMPERATURE RATED, 20W LED AND REMOTE EMERGENCY BATTERY PACK 1000LM FOR 90 MIN, LOCATE BATTERY INDOOR ABOVE ACCESSIBLE CEILING.

 LUMINAIRE LED 'BLADE' SERIES #BLD-24IN-20W-MVOLT-EMB20R OR APPROVED EQUAL.
- "PE" LED SURFACE MOUNTED 4' LONG WET LOCATION RATED LIGHTING FIXTURE, POLYCARBONATE HOUSING, 120V DRIVER, 0-10V DIMMING, 24W, 4000LM WITH 3500°K AND BUILT-IN EMERGENCY BATTERY PACK OF 10W.
 LITHONIA #FEM-L48-PPCL-120-GZ10-35K-E10WMCP OR APPROVED EQUAL.
- X" LED EXIT SIGN, SINGLE FACE, POLYCARBONATE HOUSING CONSTRUCTION, UNIVERSAL DIRECTIONAL ARROW KNOCKOUTS, FULLY OVERLAPPING LIGHT SEAL 6" HIGH RED LETTERS 25 YEAR LIFE LED LAMPS, 277 VOLT INPUT, 6 VOLT SEALED MAINTENANCE-FREE BATTERY 90 MINUTE. LIGHTALARMS #QLXN500-R OR APPROVED EQUAL.
- "X1" SAME AS "X" EXCEPT COMBO UNIT WITH (2)—SIDE MOUNTED HEADS AND 24W EXTRA BATTERY REMOTE CAPACITY.
 LIGHTALARMS #GR624M—R—U—2—LD1 OR APPROVED EQUAL.
- "X2" SAME AS "X" EXCEPT EDGE LIT COMBO UNIT WITH (2)—HIGH OUTPUT LED HEADS, VERIFY EXACT MOUNTING.
 LIGHTALARMS #8NYC3RM—2HO OR APPROVED EQUAL.

| | | | LIGHTING | CONT | ROL | MATF | RIX SC | CHEDU | JLE | | | | |
|-------------------------|--|------------------|-----------------------------------|------------------|--------------|--------------------|----------|--------------------|-------------------|--------------------------------------|-----------------------|-----------------------|---|
| LIGHTING CONTROL TAG | ROOM/SPACE TYPE | CONTROLS | AUTOMATIC LIGHTING CONTROL | LOCAL CONTROL | MANUAL ON | PARTIAL AUTO ON | BI-LEVEL | DAYL SIDE LIGHT | IGHT TOP LIGHT | AUTOMATIC PARTIAL OFF (H APPLIES) | AUTOMATIC FULL OFF | SCHEDULED FULL OFF | NOTES |
| BASED ON ASHRAE 90. | 1-2013 TABLE 9.6.1 - CONTROL FUNCTIONS | | | а | b | С | d | е | f | ` g | h | i | |
| LC1 | COMMUNITY/ KITCHEN/ LAUNDRY/ OFFICE | LOCAL/OS/ DIM | OCCUPANCY SENSOR | YES | YES | | YES | * | | NO | YES | | * DAYLIGHT SENSORS AS REQUIRED |
| LC2 | FITNESS ROOM/ LIBRARY/ COMPUTER ROOM | LOCAL/OS/ DIM | OCCUPANCY SENSOR | YES | YES | | YES | * | | NO | YES | | * DAYLIGHT SENSORS AS REQUIRED |
| LC3 | CORRIDOR | LOCAL | RELAY PANEL TIMER (TIME CLOCK) | YES | NO | NO | NO | | | YES | | YES | REMOTE LOCAL CONTROLS FOR THE SAFETY OF THE RESIDENTS |
| LC4 | STAIRS | PARTIAL DIM | OCCUPANCY SENSOR | YES | NO | NO | YES | | | YES | NO | | OCC. SENSOR TO DIMM STAIR LIGHTING FIXTURES TO 50% |
| LC5 | UTILITY ROOM (ELEC./MECH./IT) | LOCAL | NONE | YES | YES | NO | NO | | | NO | NO | NO | |
| LC6 | STORAGE/ EQUIPMENT ROOM | LOCAL/OS | OCCUPANCY SENSOR | YES | YES | | NO | | | NO | YES | | |
| LC7 | LOBBY/ RECEPTION/ SEATING | LOCAL/DIM | RELAY PANEL TIMER (TIME CLOCK) | YES | NO | NO | NO | * | | NO | | YES | * DAYLIGHT SENSORS AS REQUIRED |
| LC8 | RESTROOM/TRASH ROOM | LOCAL/OS | OCCUPANCY SENSOR | YES | NO | NO | NO | | | NO | YES | | |
| | | | | | | | | | | | | | |
| LIGHTING CONTROL | NOTES: | | | • | • | | • | | | | • | | |

1. CONTRACTOR TO PROVIDE MOTION SENSORS, DAYLIGHT SENSORS, ROOM CONTROLLERS, AND ACCESSORIES AS REQUIRED FOR A FULLY OPERATIONAL INSTALLATION PER 2015 MICHIGAN ENERGY CODE. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO REVIEW MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO ROUGH—IN. PROVIDE ADDITIONAL ROOM CONTROLLERS/POWER PACKS AND ASSOCIATED WIRING FOR MULTIPLE SWITCH LEG LOCATIONS. SEE PLANS FOR EXACT SWITCH LEGS WITH—IN EACH AREA OR ROOM. ELECTRICAL CONTRACTOR SHALL PROVIDE LIGHTING CONTROL MANUFACTURER'S DEVICE LAYOUT AS PART OF SHOP DRAWINGS SUBMITTALS.

2. ELECTRICAL CONTRACTOR IS TO INCLUDE THE SCOPE OF A LIGHTING CONTROLS DESIGNER/INSTALLER AS SUBCONTRACTOR TO ELECTRICAL CONTRACTOR TO PROVIDE FINAL DESIGN, DOCUMENTATION, PROGRAMMING, AND INSTALLATION OF THE LIGHTING CONTROLS. CONTRACT DOCUMENTS INCLUDE INTENDED FUNCTIONALITY ONLY.

- DOCUMENTS INCLUDE INTENDED FUNCTIONALITY ONLY.

 3. TO PREVENT FALSE ACTIVATION, MOUNT CEILING MOUNT SENSORS AWAY FROM DIFFUSERS AND THE PATH OF STRONG AIR TURBULENCE A MINIMUM OF FOUR FEET FOR STANDARD SENSITIVITY AND SIX FEET FOR MAXIMUM SENSITIVITY.
- 4. LOCATE AND AIM SENSORS IN THE CORRECT LOCATION REQUIRED FOR COMPLETE AND PROPER VOLUMETRIC COVERAGE WITHIN THE RANGE OF COVERAGE(S) OF CONTROLLED AREAS PER THE MANUFACTURER'S RECOMMENDATIONS. ROOMS SHALL HAVE ONE HUNDRED (100%) PERCENT COVERAGE TO COMPLETELY COVER THE CONTROLLED AREA TO ACCOMMODATE ALL OCCUPANCY HABITS OF SINGLE OR MULTIPLE OCCUPANTS AT ANY LOCATION WITHIN THE ROOM(S).
- PROVIDE THE QUANTITY OF ROOM CONTROLLERS AND POWER PACKS NEEDED TO CONTROL SWITCH LEGS AND VOLTAGES INDICATED.
 UNLESS OTHERWISE INDICATED, ADJUST MOTION SENSOR TIME TO TURN OFF CONTROLLED LIGHTING AFTER 20 MINUTES.
- 7. INCLUDE TESTING BY AN INDEPENDENT THIRD PARTY TESTING AGENCY OR INDEPENDENT COMMISSIONING AGENT AS REQUIRED BY THE MICHIGAN ENERGY CODE (ASHRAE 90.1-2013). TEST, CERTIFY AND PROVIDE DOCUMENTATION OF LIGHTING CONTROL DEVICES AND CONTROL SYSTEMS TO ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS, THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND ANSI/ASHRAE/IES STANDARD 90.1-2013, SECTION 9.4.3 FUNCTION TESTING).
- 8. PROVIDE DAY LIGHT SENSORS WHERE LIGHTING FIXTURES FALL WITHIN TOP/SIDE LIGHTED AREAS FOR BOTH PRIMARY AND SECONDARY ZONES AS DEFINED BY ASHRAE 90.1-2013, SECTION 9.4.1.1-e AND SECTION 9.4.1.1-f.
- 9. INTEGRATE CONTROLS FOR UNDERCABINET LIGHTING TO PROVIDE AS MANUAL ON/AUTOMATIC OFF BY SAME SENSOR(S) SERVING GENERAL LIGHTING IN SPACE/ROOM.

 10. IN ROOMS WITH PARTIAL ON CONTROL, PROGRAM ASSOCIATED SWITCH FOR FULL ON AND MANUAL OFF IN ADDITION TO AUTOMATIC OFF VIA OCCUPANCY SENSOR.
- 11. FOR AUTOMATIC DAYLIGHT RESPONSIVE CONTROLS SET DAYLIGHT SENSOR TO MAINTAIN THE SAME LIGHTING LEVELS AS THE LEVELS OUTSIDE THE DAYLIGHT AREA.

| TES | |
|------------------------|------|
| SORS AS REQUIRED | WIDE |
| SORS AS REQUIRED | WIRE |
| ONTROLS FOR THE | (20) |
| DIMM STAIR S TO 50% | (25) |
| | 30) |
| | 35) |
| SORS AS REQUIRED | 40> |
| | |

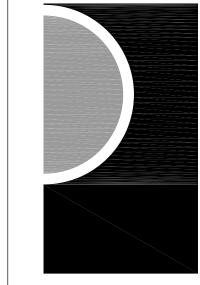
| WIRE TAG | CU/AL | CONDUIT & WIRE | WIRE TAG | CU/AL | CONDUIT & WIRE |
|------------|---------------------------------------|--|----------|-------|---|
| 20X | CU | | 20 | CU | |
| | | 3/4°C. 3#12 + 1#12G. | | | 3/4"C. 4#12 + 1#12G. |
| (25X) | CU | 3/4°C. 3#10 + 1#10G. | 25 | CU | 3/4"C. 4#10 + 1#10G. |
| 30X | CU | 3/4°C. 3#10 + 1#10G. | 30 | CU | 3/4"C. 4#10 + 1#10G. |
| <u>35X</u> | CU | 3/4°C. 3#8 + 1#10G. | 35 | CU | 3/4°C. 4#8 + 1#10G. |
| <u>40X</u> | CU | 3/4°C. 3#8 + 1#10G. | 40 | CU | 3/4"C. 4#8 + 1#10G. |
| 50X | CU | 1"C. 3#6 + 1#10G. | 50 | CU | 1"C. 3#6 + 1#10G. |
| 55X | CU | 3/4°C. 3#6 + 1#10G. | 55 | CU | 3/4"C. 4#6 + 1#10G. |
| 60X | CU | 1 1/4°C. 3#4 + 1#10G. | 60 | CU | 1 1/4°C. 4#4 + 1#10G. |
| 70X | CU | 1 1/4°C. 3#4 + 1#8G. | 70 | CU | 1 1/4°C. 4#4 + 1#8G. |
| 85X | CU | 1 1/4"C. 3#3 + 1#8G. | 85 | CU | 1 1/4"C. 4#3 + 1#8G. |
| (100X) | CU | 1 1/4"C. 3#2 + 1#8G. | 100 | CU | 1 1/4"C. 4#2 + 1#8G. |
| 100% | AL | 2°C. 3#1/0 + 1#6G. | 100 | AL | 2°C. 4#1/0 + 1#6G. |
| (140)/ | CU | 1 1/2°C. 3#1 + 1#6G. | (110) | CU | 1 1/2"C. 4#1 + 1#6G. |
| (110X) | AL | 2"C. 3#10 + 1#4G. | 110 | AL | 2"C. 4#10 + 1#4G. |
| | CU | 2"C. 3#1/0 + 1#6G. | | CU | 2"C. 4#1/0 + 1#6G. |
| (125X) | AL | 2"C. 3#2/0 + 1#4G. | 125 | AL | 2°C. 4#2/0 + 1#4G. |
| | CU | 2"C. 3#1/0 + 1#6G. | | CU | 2"C. 4#1/0 + 1#6G. |
| 150X | AL | 2°C. 3#3/0 + 1#4G. | 150 | AL | 2"C. 4#3/0 + 1#4G. |
| | CU | 2°C. 3#2/0 + 1#6G. | | CU | 2°C. 4#2/0 + 1#6G. |
| 175X | AL | | 175 | AL | . , |
| | | 2 1/2"C. 3#4/0 + 1#4G. | | | 2 1/2°C. 4#4/0 + 1#4G. |
| 200X | CU | 2"C. 3#3/0 + 1#6G. | 200 | CU | 2"C. 4#3/0 + 1#6G. |
| | AL | 3"C. 3#250KCMIL + 1#4G. | | AL | 3"C. 4#250KCMIL + 1#4G. |
| 225X | CU | 2 1/2"C. 3#4/0 + 1#4G. | 225 | CU | 2 1/2"C. 4#4/0 + 1#4G. |
| | AL | 3"C. 3#300KCMIL + 1#2G. | | AL | 3"C. 4#300KCMIL + 1#2G. |
| 250X | CU | 3"C. 3#250KCMIL + 1#4G. | 250 | CU | 3"C. 4#250KCMIL + 1#4G. |
| | AL | 3"C. 3#350KCMIL + 1#2G. | | AL | 3"C. 4#350KCMIL + 1#2G. |
| 300X | CU | 3"C. 3#350KCMIL + 1#4G. | 300 | CU | 3"C. 4#350KCMIL + 1#4G. |
| | AL | 4"C. 3#500KCMIL + 1#2G. | | AL | 4"C. 4#500KCMIL + 1#2G. |
| 350X | CU | 4"C. 3#500KCMIL + 1#3G. | 350 | CU | 4"C. 4#500KCMIL + 1#3G. |
| | AL | (2) 2 1/2"C. EA/W 3#4/0 + 1#1G. | | AL | (2) 2 1/2"C. EA/W 4#4/0 + 1#1G. |
| (400X) | CU | 4"C. 3#600KCMIL + 1#3G. | 400 | CU | 4"C. 4#600KCMIL + 1#3G. |
| | AL | (2) 3"C. EA/W 3#250KCMIL + 1#1G. | | AL | (2) 3"C. EA/W 4#250KCMIL + 1#1G. |
| (450X) | CU | (2) 2 1/2"C. EA/W 3#4/0 + 1#2G. | 450 | CU | (2) 2 1/2"C. EA/W 4#4/0 + 1#2G. |
| | AL | (2) 3"C. EA/W 3#300KCMIL + 1#1/0G. | | AL | (2) 3"C. EA/W 4#300KCMIL + 1#1/0G. |
| (500X) | CU | (2) 3"C. EA/W 3#250KCMIL + 1#2G. | 500 | CU | (2) 3"C. EA/W 4#250KCMIL + 1#2G. |
| | AL | (2) 3"C. EA/W 3#350KCMIL + 1#1/0G. | | AL | (2) 3"C. EA/W 4#350KCMIL + 1#1/0G. |
| (600X) | CU | (2) 3"C. EA/W 3#350KCMIL + 1#1G. | 600 | CU | (2) 3"C. EA/W 4#350KCMIL + 1#1G. |
| UUUA) | AL | (2) 4"C. EA/W 3#500KCMIL + 1#2/0G. | | AL | (2) 4"C. EA/W 4#500KCMIL + 1#2/0G. |
| 7004 | CU | (2) 4°C. EA/W 3#500KCMIL + 1#1/0G. | 722 | CU | (2) 4"C. EA/W 4#500KCMIL + 1#1/0G. |
| (700X) | AL | (3) 3"C. EA/W 3#350KCMIL + 1#3/0G. | 700 | AL | (3) 3"C. EA/W 4#350KCMIL + 1#3/0G. |
| | CU | (2) 4"C. EA/W 3#600KCMIL + 1#1/0G. | | CU | (2) 4"C. EA/W 4#600KCMIL |
| (800X) | AL | (3) 4"C. EA/W 3#500KCMIL + 1#3/0G. | 800 | AL | + 1#1/0G. (3) 4"C. EA/W 4#500KCMIL |
| | CU | (3) 3"C. EA/W 3#400KCMIL + 1#2/0G. | | CU | + 1#3/0G. (3) 3"C. EA/W 4#400KCMIL |
| 1000X | AL | 1#2/0G. (3) 4"C. EA/W 3#600KCMIL + 1#4/0G. | 1000 | AL | + 1#2/0G. (3) 4"C. EA/W 4#600KCMIL |
| | CU | (3) 4"C. EA/W 3#600KCMIL + | | CU | + 1#4/0G. (3) 4"C. EA/W 4#600KCMIL |
| 1200X | AL | î#3/0G. " (4) 4"C. EA/W 3#500KCMIL + 1#250KCMIL G. | 1200 | AL | + 1#3/0G. (4) 4"C. EA/W 4#500KCMIL + |
| | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | 1#250KCMIL G. (4) 4"C. EA/W 3#600KCMIL + | | | 1#250KCMIL G. (4) 4"C. EA/W 4#600KCMIL |
| | CU | 1#4/0G. | | CU | , " |

CONDUIT & WIRE SCHEDULE

(600V & BELOW)

- GENERAL WIRING NOTES:
- 1. FOR 2-WIRE SYSTEMS USE Y AS SUFFIX, SIMILAR TO X FOR THE 3-WIRE SYSTEM.
- 2. THE USE OF ALUMINUM WIRES HAVE TO BE APPROVED BY THE ENGINEER AND OWNER PRIOR TO BID, NO ALUMINUM WIRES ALLOWED FOR 100A AND LESS.

PARTNERS



PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

P 586.469.3600 F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



KEY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

ISSUES / REVISIONS

18-122A

CCD #4 09-01-2020
PR-01 09-18-2020

DRAWN BY

NH

CHECKED BY EK

CHEET NAME

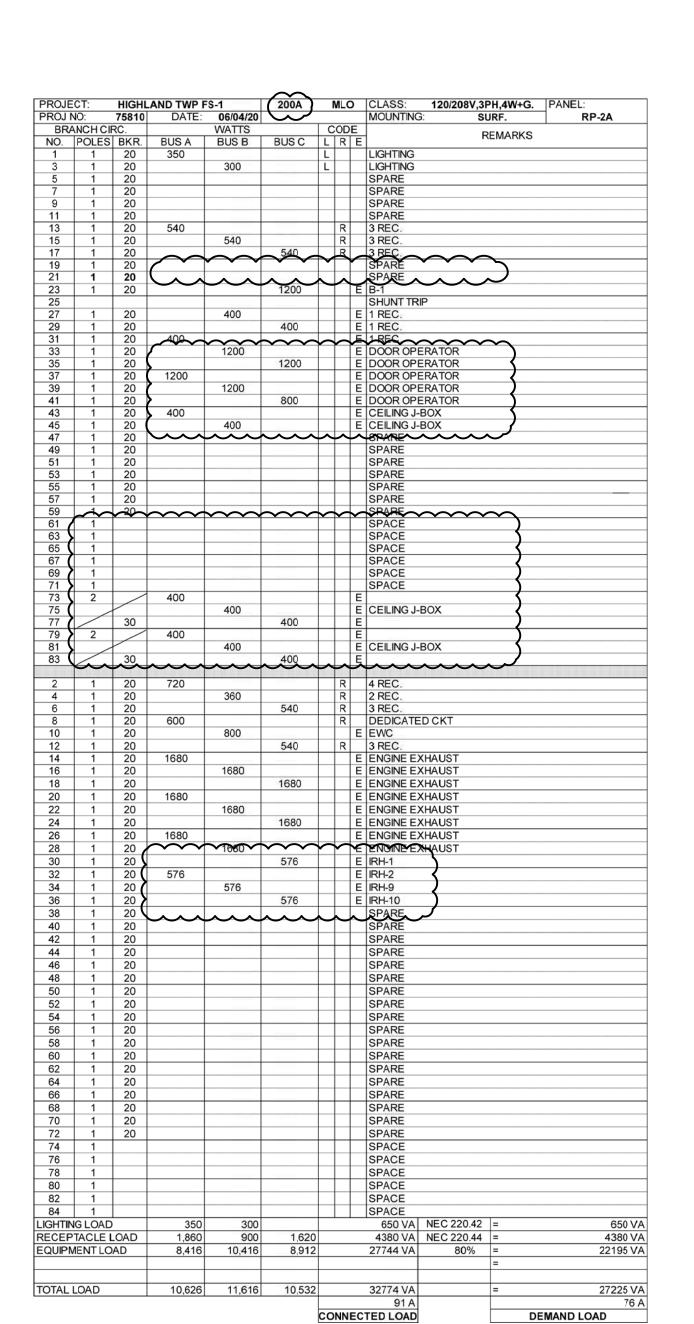
APPROVED BY

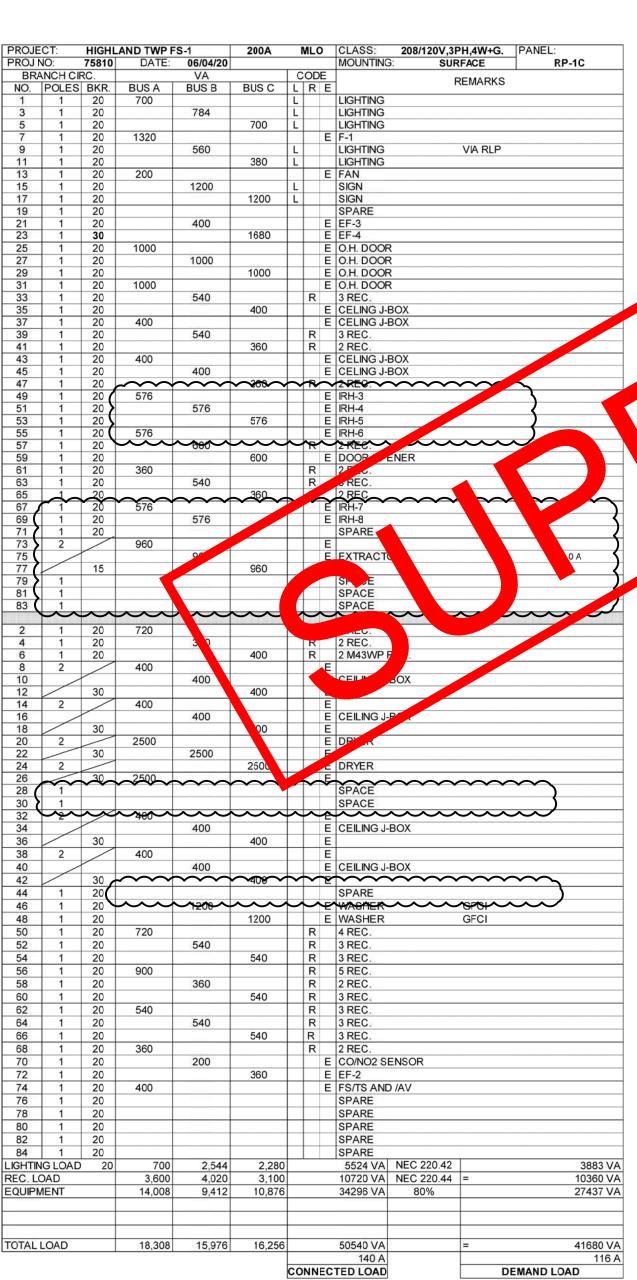
WIRE AND LIGHTING
FIXTURE SCHEDULES
AND CONTROL MATRIX

SHEET NO. **E0-03**

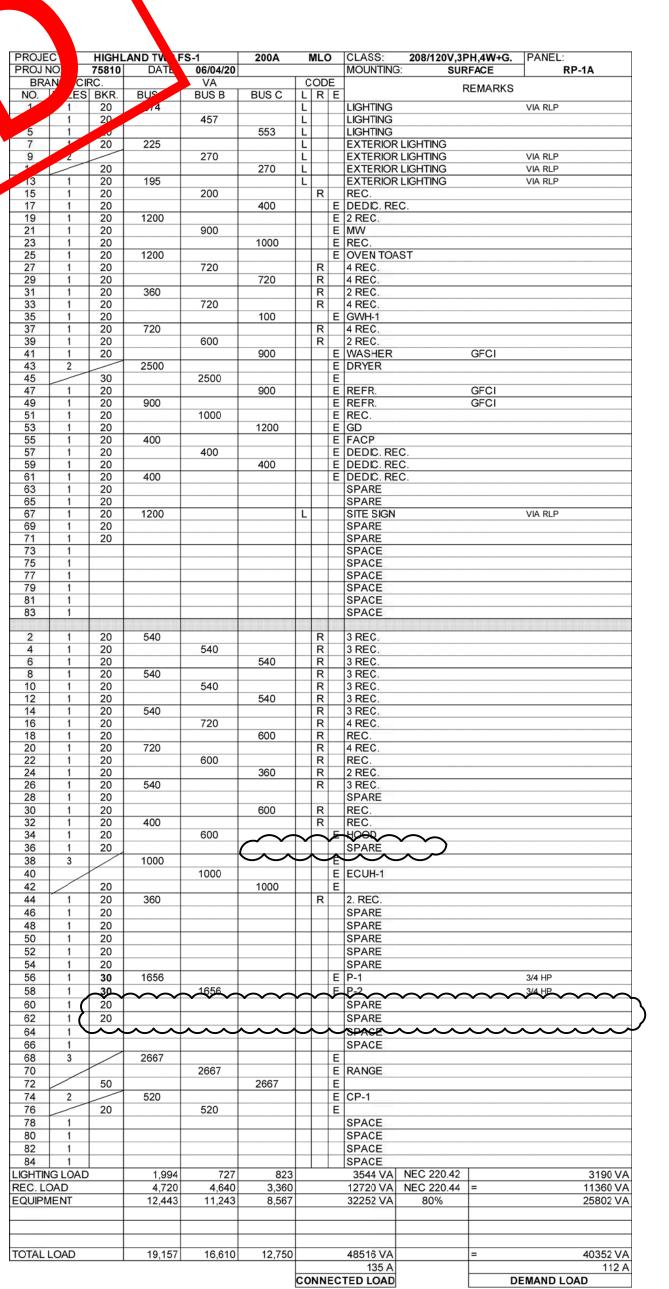
| PROJE PROJ | | 75810 | AND TWP F. DATE: | 06/04/20 | 200A | | MLO | | CLASS: MOUNTING | 208/120V,3 | PH,4W+G. RFACE | PANEL: PP-GT |
|---------------|---------|--------|---------------------|----------|--------|----------|----------|----------|--------------------|------------|-------------------|-----------------|
| | ANCH CI | | DATE | VA | | | ODE | | MOONTING | | | PP-GI |
| NO. | POLES | | BUS A | BUS B | BUS C | H | R | <u>-</u> | | | REMARKS | |
| 1 | 3 | DIKIN. | 3325 | D00 D | D00 C | - | | Ë | | | | |
| 3 | | | | 3325 | | | | | HP-1 | | | 32.6 MCA |
| 5 | | 50 | | | 3325 | | | Ε | | | | |
| 7 | 3 | | 2244 | | | | | Ε | | | | |
| 9 | | | | 2244 | | | | | HP-2 | | | 22.0 MCA |
| 11 | | 25 | | | 2244 | | | Е | | | | |
| 13 | 3 | | 2244 | | | | | E | | | | |
| 15 | | | | 2244 | | | | | HP-3 | | | 22.0 MCA |
| 17 | | 25 | 2011 | | 2244 | | | Ē | | | | |
| 19 21 | 3 | | 2244 | 2244 | | | | E | LID 4 | | | 22.0 MCA |
| 23 | | 25 | | 2244 | 2244 | | | E | HP-4 | | | 22.0 MCA |
| 25 | 3 | 25 | 2244 | | 2244 | | | ᄐ | | | | |
| 27 | - | | 2244 | 2244 | | | | | HP-5 | | | 22.0 MCA |
| 29 | | 25 | | 2277 | 2244 | | | Ē | 111 0 | | | 22.0 10071 |
| 31 | 3 | | 2948 | | | | | Ē | | | | |
| 33 | | | | 2948 | | | | E | HP-6 | | | 28.9 MCA |
| 35 | | 30 | | | 2948 | | | Е | | | | |
| 37 | 1 | | | | | | | | SPACE | | | |
| 39 | 1 | | | | | | | | SPACE | | | |
| 41 | 1 | | | | | | | | SPACE | | | |
| | ļ , | | 2400 | | | | | _ | | | | |
| 2 | 3 | | 2100 | 2100 | | | | Ē | D.F. | | 5 HP | |
| 6 | | 30 | | 2100 | 2100 | | | E | P-5 | | ס חר | |
| 8 | 3 | 30 | 2100 | | 2100 | \vdash | | E | | | | |
| 10 | " | | 2100 | 2100 | | | | | P-6 | | 5 HP | |
| 12 | | 30 | | 2.00 | 2100 | | | Ē | | | 0111 | |
| 14 | 1 | | | | | | \Box | _ | SPACE | | | |
| 16 | 1 | | | | | | | | SPACE | | | |
| 18 | 1 | | | | | | | | SPACE | | | |
| 20 | 1 | | | | | | | | SPACE | | | |
| 22 | 1 | | | | | | | | SPACE | | | |
| 24 | 1 | | | | | | \vdash | | SPACE | | | |
| 26 | 1 | | | | | | | | SPACE | | | |
| 28 30 | 1 | | | | | | | | SPACE | | | |
| 32 | 1 | 20 | | | | | \vdash | _ | SPACE SPARE | | | |
| 34 | 1 | 20 | | | | | | | SPARE | | | |
| 36 | 1 | 20 | | | | | | | SPARE | | | |
| 38 | 1 | 20 | | | | \vdash | \vdash | | SPARE | | | |
| 40 | 1 | 20 | | | | | \vdash | | SPARE | | | |
| 42 | 1 | 20 | | | | | | | SPARE | | | |
| | NG LOAD | | | | | Г | | | | NEC 220.42 | | |
| REC. L | | | | | | | | | | NEC 220.44 | | |
| EQUIPI | | | 19,449 | 19,449 | 19,449 | | | | 58347 VA | 80% | | 4667 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| TOTAL | LOAD | | 19,449 | 19,449 | 19,449 | | | | 58347 VA | jc | = | 4667 |
| | | | | | | | | | 162 A | | | 1 |
| | | | | | | | | | TED LOAD | | D | |

| | | | MAIN DISTRIBUTI | | | |
|----------|---------|--------------|--------------------|--|--|--|
| | | | 120/208V, 3PH,4W | +G, 800A/3P MAIN | | |
| POSITION | CIRCUIT | BREAKER | EQUIPMENT | CONNECTED LOAD | DEMAND LOAD | FEEDER SIZE (COPPER) |
| | FRAME | TRIP | | (KVA) | (KVA) | (SEE RISER FOR AL) |
| 1 | 200A/3P | 200 A | PP-GT | 58.3 | 46.7 | 2"C, 4#3/0 + 1#6G |
| 2 | 200A/3P | 200 A | RP-1A | 48.5 | 40.4 | 2"C, 4#3/0 + 1#6G |
| 3 | 200A/3P | 200 A | RP-1B | 42.0 | 32.6 | 2"C, 4#3/0 + 1#6G |
| 4 | 200A/3P | 200 A | RP-1C | 52.2 | 44.1 | 2"C, 4#3/0 + 1#6G |
| 5 | 200A/3P | 200 A | RP-2A | 32.8 | 27.2 | 2"C, 4#3/0 + 1#6G |
| 6 | 30A/3P | 20 A | ERV-1 14.8 M | CA 4.5 | 3.6 | 3/4"C, 3#12 + 1#12G |
| 8 | 30A/3P | 30 A | EF-1 2.01 | _{HP} 2.8 | 2.2 | 3/4"C, 3#10 + 1#10G |
| 9 | 30A/2P | √15 ♦ | ACGU 1 13-0 M | A 23 ~~ | ~~ ¹⁸ ~~ | 3/4"C, 3#12 + 1#12G |
| 10 | 60A/3P | | SPARE | | | |
| 10 | 30A/3P | 25 A | DU-1 6.0k | M THE STATE OF THE | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ |
| 11 | 30A/3P | 20 A | ECUH-1 5.0k | W 5.0 | 4.0 | 3/4"C, 3#12 + 1#12G |
| 12 | 30A/3P | 20 A | ECUH-2 5.0k | W 5.0 | 4.0 | 3/4"C, 3#12 + 1#12G |
| 13 | 30A/3P | | SPARE | | | |
| 14 | 60A/3P | | SPARE | | | |
| 15 | 30A/3P | | SPARE | | | |
| 16 | 3P | | SPACE | | | |
| 17 | 3P | | SPACE | | | |
| 18 | 3P | | SPACE | | | |
| | | | TOTAL DEMAND LOAD: | 260 KVA | 212 KVA | |
| | | | | 721 A | 588 A | |

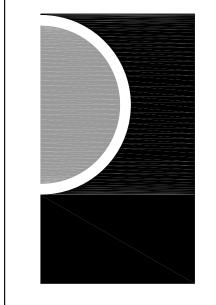












PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

F 586.469.3607

CONSULTANT



KEY PLAN

O/W/VIED

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

CONSTRUCTION

| SCHEMATIC DESIGN | 01-28-2020 |
|----------------------|------------|
| BIDDING-CONSTRUCTION | 03-27-2020 |

05-04-2020

CCD #1 06-03-2020

DRAWN BY

CHECKED BY

APPROVED BY

ΞK

SHEET NAME

ELECTRICAL PANEL SCHEDULES

SHEET NO. E0-04

| PROJE | | | AND TWP F | S-1 | 200A | | MLO |) | CLASS: | 208/120V,3F | | PANEL: |
|----------|----------|-------|-----------|----------|--------|----------|----------|--------|----------------|-------------|---------|------------|
| PROJ | | 75810 | DATE: | 06/15/20 | | | | | MOUNTING | SUR | RFACE | PP-GT |
| | ANCH CI | | | VA | | С | ODI | | | F | REMARKS | |
| NO. | POLES | BKR. | BUS A | BUS B | BUS C | L | R | | | | | |
| 1 | 3 | | 3325 | | | | | E | | | | |
| 3 | | 1 | | 3325 | | | | | HP-1 | | | 32.6 MCA |
| 5 | | 50 | 0011 | | 3325 | _ | | E | | | | |
| 7 | 3 | | 2244 | 0044 | | | | E | LID O | | | |
| 9 | | 25 | | 2244 | 2244 | | | | HP-2 | | | 22.0 MCA |
| 11 13 | 3 | 25 | 2244 | | 2244 | | | E E | | | | |
| 15 | 3 | | 2244 | 2244 | | | | | HP-3 | | | 22.0 MCA |
| 17 | | 25 | | 2277 | 2244 | | | Ē | 1111 -3 | | | ZZ.O WOA |
| 19 | 3 | 25 | 2244 | | 2277 | | | E | | | | |
| 21 | | | 2277 | 2244 | | | | | HP-4 | | | 22.0 MCA |
| 23 | | 25 | | | 2244 | | | Ē | | | | ZZ.O WIO/ |
| 25 | 3 | | 2244 | | | | | Ē | | | | |
| 27 | | | | 2244 | | | | | HP-5 | | | 22.0 MCA |
| 29 | | 25 | | | 2244 | | | Ē | | | | |
| 31 | 3 | | 2948 | | | | | E | | | | |
| 33 | | | | 2948 | | | | | HP-6 | | | 28.9 MCA |
| 35 | | 30 | | | 2948 | | | Е | | | | |
| 37 | 1 | | | | | | | | SPACE | | | |
| 39 | 1 | | | | | | | | SPACE | | | |
| 41 | 1 | | | | | | | | SPACE | | | |
| | | | | | | | | | | | | |
| 2 | 3 | | 2100 | | | | | Е | | | | |
| 4 | | | | 2100 | | | | | P-5 | | 5 HP | |
| 6 | | 30 | | | 2100 | | | Ε | | | | |
| 8 | 3 | | 2100 | | | | | E | | | | |
| 10 | | 1 | | 2100 | | | | | P-6 | | 5 HP | |
| 12 | | 30 | | | 2100 | _ | Н | Ε | 00405 | | | |
| 14 16 | 1 | | | | | | \vdash | | SPACE | | | |
| | 1 | | | | | | | | SPACE | | | |
| 18 20 | 1 | | | | | | H | | SPACE SPACE | | | |
| 22 | 1 | | | | | | \vdash | | SPACE | | | |
| 24 | 1 | | | | | | | | SPACE | | | |
| 26 | 1 | | | | | | \vdash | | SPACE | | | |
| 28 | 1 | | | | | | | | SPACE | | | |
| 30 | 1 | | | | | | | | SPACE | | | |
| 32 | 1 | 20 | | | | | | | SPARE | | | |
| 34 | 1 | 20 | | | | | | | SPARE | | | |
| 36 | 1 | 20 | | | | | \Box | | SPARE | | | |
| 38 | 1 | 20 | | | | \vdash | \vdash | | SPARE | | | |
| 40 | 1 | 20 | | | | | \vdash | | SPARE | | | |
| 42 | 1 | 20 | | | | | | | SPARE | | | |
| | NG LOAD | | | | | \vdash | | | 01 / INL | NEC 220.42 | | |
| REC. L | | | | | | \vdash | | | | NEC 220.44 | = | |
| EQUIP! | | | 19,449 | 19,449 | 19,449 | \vdash | | | 58347 VA | 80% | f- | 46678 |
| _ עטוויו | V: | | 13,443 | 13,443 | 13,443 | \vdash | | | 30371 VA | 00 /0 | 1 | 40070 |
| | | | | | | \vdash | | | | | 1 | |
| | | | | | | _ | | | | | | |
| TOTA: | 1045 | | 40.440 | 40.440 | 40.440 | <u> </u> | | | E00471/4 | | 1 | 10070 |
| TOTAL | LUAD | | 19,449 | 19,449 | 19,449 | <u> </u> | | | 58347 VA | | = | 46678 |
| | | | | | | <u>_</u> | | | 162 A | | | 13 |
| | | | | | | CO | NNE | -C | TED LOAD | | 0 | EMAND LOAD |
| | | | | | | | | | | | | |

| | | | MAIN DISTRIE 120/208V, 3PH, | | | | |
|------------|-----------|---------|--------------------------------|--------|---------------|-------------|---------------------|
| | CIRCUIT E | BREAKER | | | ONNECTED LOAD | DEMAND LOAD | FEEDER SIZE (COPP |
| POSITION - | FRAME | TRIP | -EQUIPMENT | | (KVA) | (KVA) | (SEE RISER FOR A |
| 1 | 200A/3P | 200 A | PP-GT | | 58.3 | 46.7 | 2"C, 4#3/0 + 1#6G |
| 2 | 200A/3P | 200 A | RP-1A | | 48.6 | 40.4 | 2"C, 4#3/0 + 1#6G |
| 3 | 200A/3P | 200 A | RP-1B | | 42.0 | 32.6 | 2"C, 4#3/0 + 1#6G |
| 4 | 200A/3P | 200 A | RP-1C | | 52.2 | 44.1 | 2"C, 4#3/0 + 1#6G |
| 5 | 200A/3P | 200 A | RP-2A | | 32.8 | 27.2 | 2"C, 4#3/0 + 1#6G |
| 6 | 30A/3P | 20 A | ERV-1 14.8 | 8 MCA | 4.5 | 3.6 | 3/4"C, 3#12 + 1#120 |
| 8 | 30A/3P | 30 A | EF-1 | 2.0 HP | 2.8 | 2.2 | 3/4"C, 3#10 + 1#100 |
| 9 | 30A/2P | 15 A | ACCU-1 13.0 | 0 MCA | 2.3 | 1.8 | 3/4"C, 3#12 + 1#120 |
| 10 | 60A/3P | | SPARE | | | | |
| 10 | 30A/3P | 25 A | DU-1 | 6.0KW | 6.0 | 4.8 | 3/4"C, 3#10 + 1#100 |
| 11 | 30A/3P | 20 A | ECUH-1 | 5.0KW | 5.0 | 4.0 | 3/4"C, 3#12 + 1#120 |
| 12 | 30A/3P | 20 A | ECUH-2 | 5.0KW | 5.0 | 4.0 | 3/4"C, 3#12 + 1#120 |
| 13 | 30A/3P | | SPARE | | | | |
| 14 | 60A/3P | | SPARE | | | | |
| 15 | 30A/3P | | SPARE | | | | |
| 16 | 3P | | SPACE | | | | |
| 17 | 3P | | SPACE | | | | |
| 18 | 3P | | SPACE | | | | |
| | | | TOTAL DEMAND LOAD: | | 260 KVA | 212 KVA | |

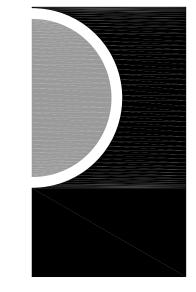
| NO. II 3 | NCH CIF POLES 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | BKR. 20 20 20 20 20 20 20 20 20 20 20 20 20 | DATE: BUS A 350 540 400 400 | 96/15/20 WATTS BUS B 300 540 400 1200 | 540 1200 400 | C L L | OD R R R R R | E | MOUNTING: SURF. RP-2A REMARKS LIGHTING LIGHTING SPARE SPARE SPARE SPARE 3 REC. 3 REC. 3 REC. SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE |
|--|---|---|--------------------------------|---------------------------------------|--------------------|--|-----------------------------|----------|--|
| NO. 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 63 | POLES 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | BKR. 20 20 20 20 20 20 20 20 20 20 20 20 20 | 350 540 400 1200 | 540 400 | 540 1200 400 | L L | RRR | E | LIGHTING LIGHTING SPARE SPARE SPARE SPARE 3 REC. 3 REC. 3 REC. SPARE SPARE SPARE |
| 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 55 57 59 61 63 | | 20 20 20 20 20 20 20 20 20 20 | 350 540 400 1200 | 300 540 400 | 540 1200 400 | Ĺ | RR | | LIGHTING SPARE SPARE SPARE SPARE SPARE 3 REC. 3 REC. 3 REC. SPARE SPARE SPARE |
| 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 | 540 400 1200 | 540 400 1200 | 1200 | - | R | E | LIGHTING SPARE SPARE SPARE SPARE SPARE 3 REC. 3 REC. 3 REC. SPARE SPARE SPARE |
| 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 | 400 | 540 400 1200 | 1200 | | R | E | SPARE SPARE SPARE SPARE SPARE 3 REC. 3 REC. SPARE SPARE SPARE SPARE SPARE B-1 |
| 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 400 | 400 | 1200 | | R | E | SPARE SPARE 3 REC. 3 REC. 3 REC. SPARE SPARE SPARE B-1 |
| 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 400 | 400 | 1200 | | R | E | SPARE 3 REC. 3 REC. 3 REC. SPARE SPARE B-1 |
| 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 400 | 400 | 1200 | | R | E | 3 REC. 3 REC. 3 REC. SPARE SPARE B-1 |
| 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 400 | 400 | 1200 | | R | E | 3 REC. 3 REC. SPARE SPARE B-1 |
| 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 1200 | 400 | 1200 | | | E | 3 REC. SPARE SPARE B-1 |
| 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 1200 | 1200 | 1200 | | | E | SPARE SPARE B-1 |
| 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 1200 | 1200 | 400 | | | Е | SPARE B-1 |
| 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 1200 | 1200 | 400 | | | Ε | B-1 |
| 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 1200 | 1200 | 400 | | | - | |
| 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 1200 | 1200 | | | | | SHUNT TRIP |
| 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 1200 | | | | | | 1 REC. |
| 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 1200 | | 1200 | | | | 1 REC. |
| 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 | | | 1200 | | | E | 1 REC. |
| 37 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 | | 1200 | 1200 | | | | DOOR OPERATOR |
| 39 41 43 45 47 49 51 53 55 57 59 61 63 | 1 | 20 20 20 20 20 20 20 20 20 20 | | 1200 | | | | | DOOR OPERATOR DOOR OPERATOR |
| 41 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 | 400 | 1200 | | | | | DOOR OPERATOR DOOR OPERATOR |
| 43 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 | 400 | | 800 | \vdash | | | DOOR OPERATOR DOOR OPERATOR |
| 45 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 | | | 550 | H | | | CEILING J-BOX |
| 47 49 51 53 55 57 59 61 63 | 1 1 1 1 1 1 1 | 20 20 20 20 20 | | 400 | | Н | | | CEILING J-BOX |
| 51 53 55 57 59 61 63 | 1 1 1 1 1 | 20 20 | | | | | | | SPARE |
| 53 55 57 59 61 63 | 1 1 1 1 | 20 | | | | | | | SPARE |
| 55 57 59 61 63 | 1 1 1 | | | | | Ш | | | SPARE |
| 57 59 61 63 | 1 1 | | | | | Ш | | <u> </u> | SPARE |
| 59 61 63 | 1 | 20 | | | | \square | | L | SPARE |
| 61 63 | 1 | 20 | | | | $\vdash \vdash$ | | - | SPARE SPARE |
| 63 | | 20 | | | | $\vdash \vdash$ | | <u> </u> | SPACE |
| | 1 | | | | | \vdash | | | SPACE |
| 65 | 1 | | | | | | | | SPACE |
| 67 | 1 | | | | | | | | SPACE |
| 69 | 1 | | | | | | | | SPACE |
| 71 | 1 | | | | | | | | SPACE |
| 73 | 2 | | 400 | | | Ш | | Е | |
| 75 | | | | 400 | 100 | | | E | CEILING J-BOX |
| 77 | <u> </u> | 30 | 100 | | 400 | H | | E | |
| 79 81 | 2 | | 400 | 400 | | | | E | CEILING J-BOX |
| 83 | | 30 | | 400 | 400 | \vdash | | E | CEILING 3-DOX |
| - 00 | | 00 | | | 700 | | | _ | |
| 2 | 1 | 20 | 720 | | | | R | | 4 REC. |
| 4 | 1 | 20 | | 360 | | | R | | 2 REC. |
| 6 | 1 | 20 | | | 540 | | R | | 3 REC. |
| 8 | 1 | 20 | 600 | | | | R | | DEDICATED CKT |
| 10 | 1 | 20 | | 800 | F 40 | Н | _ | E | EWC |
| 12 14 | 1 | 20 20 | 1680 | | 540 | | R | _ | 3 REC. ENGINE EXHAUST |
| 16 | 1 | 20 | 1000 | 1680 | | Н | | | ENGINE EXHAUST |
| 18 | 1 | 20 | | 1000 | 1680 | | | | ENGINE EXHAUST |
| 20 | 1 | 20 | 1680 | | | | | | ENGINE EXHAUST |
| 22 | 1 | 20 | | 1680 | | | | | ENGINE EXHAUST |
| 24 | 1 | 20 | | | 1680 | | | | ENGINE EXHAUST |
| 26 | 1 | 20 | 1680 | | | | | Е | ENGINE EXHAUST |
| 28 | 1 | 20 | | 1680 | | | | | ENGINE EXHAUST |
| 30 | 1 | 20 | | | 576 | Ш | | | IRH-1 |
| 32 | 1 | 20 | 576 | | | Ш | | | IRH-2 |
| 34 | 1 | 20 | | 576 | | Ш | | | IRH-9 |
| 36 | 1 | 20 | | | 576 | Ш | | Е | IRH-10 |
| 38 | 11 | 20 | | | | Ш | | | SPARE |
| 40 | 1 | 20 | | | | Ш | | L | SPARE |
| 42 | 1 | 20 | | | | Н | | _ | SPARE SPARE |
| 44 | 1 | 20 | | | | \vdash | | _ | SPARE |
| 46 | 1 | 20 | | | | H | | | SPARE SDARE |
| 48 50 | 1 | 20 20 | + | | | $\vdash \vdash$ | | - | SPARE SPARE |
| 52 | 1 | 20 | | | | Н | | - | SPARE |
| 54 | 1 | 20 | | | | Н | | | SPARE |
| 56 | 1 | 20 | | | | H | | | SPARE |
| 58 | 1 | 20 | | | | П | | | SPARE |
| 60 | 1 | 20 | | | | П | | | SPARE |
| 62 | 1 | 20 | 1 | | | П | | | SPARE |
| 64 | 1 | 20 | | | | | | | SPARE |
| 66 | 1 | 20 | | | | | | | SPARE |
| 68 | 1 | 20 | | | | | | | SPARE |
| 70 | 1 | 20 | | | | | | | SPARE |
| 72 | 1 | 20 | | | | Ш | | oxdot | SPARE |
| 74 | 1 | | | | | Ш | | | SPACE |
| 76 | 1 | | | | | Ш | | <u> </u> | SPACE |
| 78 | 1 | | | | | Ш | | | SPACE |
| 80 | 1 | | | | | Ш | | L | SPACE |
| 82 | 1 | | | | | Ш | | L | SPACE |
| 84 | 1 | | | | | Ш | | | SPACE |
| IGHTING | | 045 | 350 | 300 | | <u> </u> | | | 650 VA NEC 220.42 = 650 VA |
| RECEPT | | | 1,860 | 900 | 1,620 | | | | 4380 VA NEC 220.44 = 4380 V |
| EQUIPMI | ENI LO | MD | 8,416 | 10,416 | 8,912 | - | | | 27744 VA 80% = 22195 V |
| | | + | + | + | | | | | |

| NO. 1 3 | NO: | 75810 | DATE: | 06/15/20 | | _ | <u> </u> | _ | MOUNTING: SURFACE RP-1C |
|---|---|---|-----------------------------------|---|--|---------------------------------------|-----------------|-------------|--|
| 1 | ANCH CI | KU. | DI IC A | VA | BUS C | _ | OD D | | REMARKS |
| | POLES | 20 | BUS A 700 | BUS B | BUS C | L | K | Ε | LIGHTING |
| 3 | 1 | | 700 | 704 | | | | | |
| | 11 | 20 | | 784 | 700 | L | | | LIGHTING |
| 5 | 1 | 20 | 4000 | | 700 | L | | _ | LIGHTING |
| 7 | 1 | 20 | 1320 | | | | | E | F-1 |
| 9 | 1 | 20 | | 560 | | L | | | LIGHTING VIA RLP |
| 11 | 1 | 20 | | | 380 | L | | | LIGHTING |
| 13 | 1 | 20 | 200 | | | | | Е | FAN |
| 15 | 1 | 20 | | 1200 | | L | | | SIGN |
| 17 | 1 | 20 | | | 1200 | L | | | SIGN |
| 19 | 1 | 20 | | | | | | | SPARE |
| 21 | 1 | 20 | | 400 | | | | | EF-3 |
| 23 | 1 | 30 | | | 1680 | | | | EF-4 |
| 25 | 1 | 20 | 1000 | | | | | | O.H. DOOR |
| 27 | 1 | 20 | | 1000 | | | | | O.H. DOOR |
| 29 | 1 | 20 | | | 1000 | | | Ε | O.H. DOOR |
| 31 | 1 | 20 | 1000 | | | | | Ε | O.H. DOOR |
| 33 | 1 | 20 | | 540 | | | R | | 3 REC. |
| 35 | 1 | 20 | | | 400 | | | Е | CELING J-BOX |
| 37 | 1 | 20 | 400 | | | | | | CELING J-BOX |
| 39 | 1 | 20 | | 540 | | | R | | 3 REC. |
| 41 | 1 | 20 | | | 360 | | R | | 2 REC. |
| 43 | 1 | 20 | 400 | | | | | | CELING J-BOX |
| 45 | 1 | 20 | | 400 | | | | | CELING J-BOX |
| 47 | 1 | 20 | | 400 | 360 | | R | | 2 REC. |
| 49 | 1 | 20 | 576 | | 500 | Н | 1/ | | RH-3 |
| | | | 0/0 | E70 | | H | | | IRH-3 IRH-4 |
| 51 | 1 | 20 | | 576 | F70 | Щ | | | |
| 53 | 1 | 20 | | | 576 | Щ | | E | IRH-5 |
| 55 | 1 | 20 | 576 | | | Ш | _ | | RH-6 |
| 57 | 1 | 20 | | 600 | | | R | | 2 REC |
| 59 | 1 | 20 | | | 600 | Ш | | Ε | |
| 61 | 1 | 20 | 360 | | | ╚ | R | | 2 REC. |
| 63 | 1 | 20 | | 540 | | | | | 3 REC. |
| 65 | 1 | 20 | | | 360 | | R | | 2 REC. |
| 67 | 1 | 20 | 576 | | | | Ė | | IRH-7 |
| 69 | 1 | 20 | 0.0 | 576 | | | | F | IRH-2 |
| 71 | 1 | 20 | | 0.0 | | | | _ | ST |
| 73 | 2 | 20 | 960 | | | | | Е | |
| 75 | | | 960 | 060 | | | | 듣 | (TDACTOR |
| | | | | 960 | ~~~~~ | | | ΕÞ | (TRACTOR) A |
| 77 | \sim | √1 §_ | ~~~ | ~~~ | 960~ | ~ | \ | - | |
| 79 | 3 | | 3667 | | | | | Е | |
| 81 (| | | | 3667 | | | | | SCDA |
| 83 🕻 | | 60 | | | 36 7 | | | Ε | |
| | \sim | \sim | \sim | \sim | \sim | \ | \ | 〈 | |
| 2 | 1 | 20 | 720 | | | | R | | 4 RE |
| 4 | 1 | 20 | | 360 | | | R | | 2 REC. |
| 6 | 1 | 20 | | | 400 | | R | | 2 M43WP REC. |
| 8 | 2 | | 400 | | | 1 | | Ε | |
| 10 | | | | 400 | | | | | CEILING J-BOX |
| 12 | | 30 | | | 400 | | | Е | |
| 14 | 2 | | 400 | | | | ` | E | |
| 16 | | | | 400 | | | | | CEILIN J-BOX |
| 18 | | 30 | | 100 | 400 | | | | OLI, U BOX |
| 20 | 2 | - 00 | 2500 | | 400 | | | Ē | RYER |
| 22 | - | 30 | 2300 | 2500 | | | | E | DITIEN |
| 24 | 2 | 30 | | 2300 | 2500 | | | | DRYER |
| 26 | - | 30 | 2500 | | 2500 | | | E | DRIER |
| | | 30 | 2500 | | | | | | 00405 |
| 28 | 1 | | | | | | | | SPACE |
| 30 | 1 | | | | | | | | SPACE |
| 32 | 2 | | 400 | | | | | Е | |
| 34 | | | | 400 | | | | | CEILING J-BOX |
| 36 | | 30 | | | 400 | L∃ | | Е | |
| 38 | 2 | | 400 | | _ | П | | Е | |
| | | | · - | 400 | | | | | CEILING J-BOX |
| 40 | | 30 | | | 400 | | | E | |
| | 1 | 20 | | | -500 | H | | ┢ | SPARE |
| 42 | 1 | 20 | | 1200 | | \vdash | | - | |
| 42 44 | 1 1 | /// | | 1200 | | | | | WASHER GFCI |
| 42 44 46 | _ | | | | 4000 | - | | | WACLED OFC! |
| 42 44 46 48 | 1 | 20 | | | 1200 | | | | WASHER GFCI |
| 42 44 46 48 50 | 1 | 20 20 | 720 | | 1200 | | R | | 4 REC. |
| 42 44 46 48 50 52 | 1 | 20 | 720 | 540 | 1200 | | R | | 4 REC. 3 REC. |
| 42 44 46 48 50 | 1 | 20 20 | 720 | 540 | 1200 540 | | | | 4 REC. 3 REC. 3 REC. |
| 42 44 46 48 50 52 54 | 1 1 1 | 20 20 20 | 720 900 | 540 | | | R | | 4 REC. 3 REC. 3 REC. |
| 42 44 46 48 50 52 54 56 | 1 1 1 1 | 20 20 20 20 20 20 | | | | | R R R | E | 4 REC. 3 REC. 3 REC. 5 REC. |
| 42 44 46 48 50 52 54 56 58 | 1 1 1 1 1 | 20 20 20 20 20 20 20 | | 540 360 | 540 | | R R R | E | 4 REC. 3 REC. 3 REC. 5 REC. 2 REC. |
| 42 44 46 48 50 52 54 56 58 60 | 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 | 900 | | | | R R R R | E | 4 REC. 3 REC. 3 REC. 5 REC. 2 REC. 3 REC. |
| 42 44 46 48 50 52 54 56 58 60 62 | 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 | | 360 | 540 | | R R R R R | E | 4 REC. 3 REC. 3 REC. 5 REC. 2 REC. 3 REC. 3 REC. |
| 42 44 46 48 50 52 54 56 58 60 62 64 | 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 | 900 | | 540 540 | | | E | 4 REC. 3 REC. 3 REC. 5 REC. 2 REC. 3 REC. 3 REC. 3 REC. |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 | 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 | 900 | 360 | 540 | | X X X X X X X X | E | 4 REC. 3 REC. 3 REC. 5 REC. 2 REC. 3 REC. 3 REC. 3 REC. 3 REC. 3 REC. 3 REC. |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 | 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 | 900 | 360 | 540 540 | | | E | 4 REC. 3 REC. 5 REC. 2 REC. 3 REC. 3 REC. 3 REC. 3 REC. 2 REC. 2 REC. 3 REC. 3 REC. |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 | 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 | 900 | 360 | 540 540 | | X X X X X X X X | E | 4 REC. 3 REC. 3 REC. 5 REC. 2 REC. 3 REC. 3 REC. 3 REC. 3 REC. 3 REC. 3 REC. |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 | 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 900 | 360 540 | 540 540 | | X X X X X X X X | E | 4 REC. 3 REC. 3 REC. 5 REC. 2 REC. 3 REC. 3 REC. 3 REC. 2 REC. 2 REC. CO/NO2 SENSOR |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 900 540 360 | 360 540 | 540 540 540 | | X X X X X X X X | E | 4 REC. 3 REC. 3 REC. 5 REC. 2 REC. 3 REC. 3 REC. 3 REC. 2 REC. 2 REC. CO/NO2 SENSOR EF-2 |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 900 | 360 540 | 540 540 540 | | X X X X X X X X | E | 4 REC. 3 REC. 3 REC. 5 REC. 2 REC. 3 REC. 3 REC. 3 REC. 2 REC. CO/NO2 SENSOR EF-2 FS/TS AND /AV |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 900 540 360 | 360 540 | 540 540 540 | | X X X X X X X X | E | 4 REC. 3 REC. 3 REC. 5 REC. 2 REC. 3 REC. 3 REC. 3 REC. 2 REC. CO/NO2 SENSOR EF-2 FS/TS AND /AV SPARE |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 900 540 360 | 360 540 | 540 540 540 | | X X X X X X X X | E | 4 REC. 3 REC. 3 REC. 5 REC. 2 REC. 2 REC. 3 REC. 3 REC. 2 REC. CO/NO2 SENSOR EF-2 FS/TS AND /AV SPARE SPARE |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 900 540 360 | 360 540 | 540 540 540 | | X X X X X X X X | EEE | 4 REC. 3 REC. 3 REC. 5 REC. 2 REC. 2 REC. 3 REC. 3 REC. 3 REC. 2 REC. CO/NO2 SENSOR EF-2 FS/TS AND /AV SPARE SPARE SPARE |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 900 540 360 | 360 540 | 540 540 540 | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | X X X X X X X X | EEE | 4 REC. 3 REC. 3 REC. 5 REC. 2 REC. 2 REC. 3 REC. 3 REC. 2 REC. CO/NO2 SENSOR EF-2 FS/TS AND /AV SPARE SPARE |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 900 540 360 | 360 540 200 | 540 540 540 360 | \ | X X X X X X X X | E E E | 4 REC. 3 REC. 3 REC. 5 REC. 2 REC. 2 REC. 3 REC. 3 REC. 3 REC. 2 REC. CO/NO2 SENSOR EF-2 FS/TS AND /AV SPARE SPARE SPARE |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 900 540 360 400 | 360 540 200 | 540 540 540 360 | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | X X X X X X X X | EEE | 4 REC. 3 REC. 3 REC. 5 REC. 2 REC. 2 REC. 3 REC. 3 REC. 3 REC. 2 REC. CO/NO2 SENSOR EF-2 FS/TS AND /AV SPARE SPARE SPARE SPARE |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 900 540 360 400 | 360 540 200 2912 | 540 540 540 360 2912 2,280 | | X X X X X X X X | E E E | 4 REC. 3 REC. 3 REC. 5 REC. 5 REC. 2 REC. 3 REC. 3 REC. 3 REC. 3 REC. 2 REC. CO/NO2 SENSOR EF-2 FS/TS AND /AV SPARE SPARE SPARE SPARE AIR COMPRESSOR 5524 VA NEC 220.42 3 REC. 3 |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 LIGHTIN | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 900 540 360 400 3,600 | 360 540 200 2912 2,544 4,020 | 540 540 540 360 2912 2,280 3,100 | | X X X X X X X X | E E E | 4 REC. 3 REC. 3 REC. 5 REC. 5 REC. 2 REC. 3 REC. 3 REC. 3 REC. 3 REC. 2 REC. CO/NO2 SENSOR EF-2 FS/TS AND /AV SPARE SPARE SPARE SPARE SPARE AIR COMPRESSOR 5524 VA NEC 220.42 3883 NOT20 VA NEC 220.44 = 10360 N |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 LIGHTIN | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 900 540 360 400 | 360 540 200 2912 | 540 540 540 360 2912 2,280 | | X X X X X X X X | E E E | 4 REC. 3 REC. 3 REC. 5 REC. 5 REC. 2 REC. 3 REC. 3 REC. 3 REC. 3 REC. 2 REC. CO/NO2 SENSOR EF-2 FS/TS AND /AV SPARE SPARE SPARE SPARE SPARE AIR COMPRESSOR 5524 VA NEC 220.42 3883 10720 VA NEC 220.44 = 10360 |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 LIGHTIN | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 900 540 360 400 3,600 | 360 540 200 2912 2,544 4,020 | 540 540 540 360 2912 2,280 3,100 | | X X X X X X X X | E E E | 4 REC. 3 REC. 3 REC. 5 REC. 5 REC. 2 REC. 3 REC. 3 REC. 3 REC. 3 REC. 2 REC. CO/NO2 SENSOR EF-2 FS/TS AND /AV SPARE SPARE SPARE SPARE SPARE AIR COMPRESSOR 5524 VA NEC 220.42 3883 10720 VA NEC 220.44 = 10360 |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 LIGHTIN | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 900 540 360 400 3,600 | 360 540 200 2912 2,544 4,020 | 540 540 540 360 2912 2,280 3,100 | | X X X X X X X X | E E E | 4 REC. 3 REC. 3 REC. 5 REC. 5 REC. 2 REC. 3 REC. 3 REC. 3 REC. 3 REC. 2 REC. CO/NO2 SENSOR EF-2 FS/TS AND /AV SPARE SPARE SPARE SPARE SPARE AIR COMPRESSOR 5524 VA NEC 220.42 3883 NOT20 VA NEC 220.44 = 10360 N |
| 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 20 20 20 20 20 20 20 20 20 20 20 20 20 2 | 900 540 360 400 3,600 | 360 540 200 2912 2,544 4,020 | 540 540 540 360 2912 2,280 3,100 | | X X X X X X X X | E E E | 4 REC. 3 REC. 3 REC. 5 REC. 5 REC. 2 REC. 3 REC. 3 REC. 3 REC. 3 REC. 2 REC. CO/NO2 SENSOR EF-2 FS/TS AND /AV SPARE SPARE SPARE SPARE SPARE AIR COMPRESSOR 5524 VA NEC 220.42 3883 VA 10720 VA NEC 220.44 = 10360 VA |

| PROJE PROJ N | NO: | 75810 | AND TWP F | 06/15/20 | 200A | | LO | | CLASS: | 208/120 3: | | PH,4W+G. FACE | PANEL. | R. 3 | |
|-----------------|----------|------------|----------------|---|----------------|-----------------|--------------|----|----------------------|---------------|----------|------------------|--------|---------------|----------------|
| BRA | ANCH CIF | RC. | | VA | DUIC C | CC | DE | | | | <u> </u> | | | | |
| NO. | POLES | | BUS A | BUS B | BUS C | L | | 4 | LICHTING | | | | | $\overline{}$ | |
| 3 | 1 | 20 20 | 600 | 679 | | | + | | LIGHTING LIGHTING | | | • | | $\overline{}$ | |
| 5 | 1 | 20 | | 5.5 | | L | \dashv | | LIGHTING | | | VIA RLP | | | |
| 7 | 1 | 20 | 500 | | - | L | # | | LIGHT | | 1 | (IA RLP | | | |
| 9 | 1 | 20 | | | | | | | 0 | | | | | | |
| 11 | 1 | 20 | | | | \perp | | | ARE | | | | | | |
| 13 | 1 | 20 | 400 | | | L | | | RAFFIC L | IGHI | | | | | |
| 15 17 | 1 | 20 20 | | | 1 | | - | | ARE | .JN | | VIA | | | |
| 19 | 1 | 20 | 720 | | | | R | - | 5 | JOIN | | VIA | | | |
| 21 | 1 | ∠0 | 120 | 540 | | | R | | 3 R. | | | | | | |
| 23 | | 20 | | | 1080 | F | R | | 6 RE | | | | | | |
| 25 | 1 | 20 | 1200 | | | | | | DOOR | RAT | | | | | |
| 000 | 1 | 20 | | 1200 | | 1 | | 4 | OOR C | JR | | | | | |
| 29 31 | 1 | 20 | 540 | | 720 | | R R | -) | REC. | | | | | | |
| 33 | 1 | 2 | 340 | 0 | | | R | 4 | REC. | | | | | | |
| 35 | 1 | 20 | | , in the second | | | | 1 | 4 REC. | | | | | | |
| 37 | | 20 | 900 | | | | 1 | | 5 REC. | | | | | | |
| 30 | 1 | 20 | | | | | R | | 5 RF | | | | | | |
| 40 | 1 | 20 | | | 720 | \coprod | R | | .≟C. | | | | | | |
| 43 | 1 | 20 | | 1000 | | | R | | 3 REC. 6 REC. | | | | | | |
| 45 7 | | 20 | | 1080 | 540 | | R | | 3 REC. | | | | | | |
| | | 20 | 540 | | U-1U | | R | | 3 REC. | | | | | | |
| | 1 | 20 | | 540 | | F | R | | 3 REC. | | | | | | |
| 5. | 1 | 20 | | | 1080 | | R | | 4 REC. | | | | | | |
| 55 | 1 | | 100 | 100 | | | | | STF-1 | | | | | | |
| 57 | 1 | ∠ 0 | | 400 | 400 | \vdash | | | PA SYSTE | | | | | | |
| 59 61 | 1 | 20 20 | | | 400 | \vdash | + | | RADIO SYS |) I E IVÍ | | | | | |
| 63 | 1 | 20 | | | | \vdash | + | | SPARE | | | | | | |
| 65 | 1 | _0 | | | | | | | SPARE | | | | | | |
| 67 | | | | | | | T | | SPACE | | | | | | |
| 69 | 1 | | | | | | | | SPACE | | | | | | |
| 72 | 1 | | | | | \vdash | + | | SPACE | | | | | | |
| 73 75 | 1 | | | | | \vdash | + | | SPACE SPACE | | | | | | |
| 77 | 1 | | | | | \vdash | + | | SPACE | | | | | | |
| 79 | 1 | | | | | \Box † | T | | SPACE | | | | | | |
| 81 | 1 | | | | | | | | SPACE | | | | | | |
| 83 | 1 | | | | | | | | SPACE | | | | | | |
| 2 | 1 | 20 | 900 | | | Η. | R | | 5 REC. | | | | | | |
| 4 | 1 | 20 | 900 | 400 | | | R R | | 2 REC. | | | | | | |
| 6 | 1 | 20 | | Ŧ00 | 1000 | | | | PROJECTO | OR . | | | | | |
| 8 | 1 | 20 | 720 | | | | R | | 4 REC. | | | | | | |
| 10 | 1 | 20 | | 1080 | | F | R | | 6 REC. | | | | | | |
| 12 | 1 | 20 | 000 | | 1080 | | R | | 6 REC. | | | | | | |
| 14 16 | 1 | 20 20 | 900 | 540 | | | R R | | 5 REC. 3 REC. | | | | | | |
| 18 | 1 | 20 | | 540 | 900 | | R R | | 5 REC. | | | | | | |
| 20 | 1 | 20 | 1000 | | | Ħ' | | Е | COFFEE | | | | | | |
| 22 | 1 | 20 | | 1000 | | | | Εĺ | COFFEE | | | | | | |
| 24 | 1 | 20 | | | 720 | | R | | 4 REC. | | | | | | |
| 26 | 1 | 20 | 540 | 1000 | | | R | | 3 REC. TBB | | | | | | |
| 28 30 | 1 | 20 20 | | 1000 | 1000 | \vdash | | | TBB | | | | | | |
| 32 | 1 | 20 | 400 | | 1000 | Η, | R | - | 2 REC. | | | | | | |
| 34 | 1 | 20 | | 800 | | | R | | 2 REC. | | | | | | |
| 36 | 1 | 20 | | | 900 | | | Εĺ | EWC | | | | | | |
| 38 | 1 | 20 | 600 | | | | | | EQUIPMEN | | | | | | |
| 40 | 1 | 20 | | 900 | | | | | EQUIPMEN | JT | | | | | |
| 42 | 1 | 20 | 000 | | 800 | $\vdash \vdash$ | | | REF. | т | | | | | |
| 44 | 1 | 20 20 | 600 | 000 | | \vdash | | | EQUIPMEN EQUIPMEN | | | | | | |
| 46 48 | 2 | 20 | | 900 | 1125 | \vdash | | | EBB-1 | N I | | | | | |
| 50 | | 20 | 1125 | | 1140 | + | | E | רטט- ו | | | | | | |
| 52 | 2 | | | 1125 | | | | _ | EBB-1 | | | | | | |
| 54 | | 20 | | | 1125 | | | E | | | | | | | |
| 56 | 1 | 20 | | | | | T | _ | SPARE | | | | | | |
| 58 | 1 | 20 | | | | | | | SPARE | | | | | | |
| 60 | 1 | 20 | | | | $\vdash \vdash$ | \downarrow | | SPARE | | | | | | |
| 62 | 1 | 20 | | | | \vdash | + | _ | SPARE | | | | | | |
| 64 66 | 1 | 20 20 | | | | \vdash | + | | SPARE SPARE | | | | | | |
| 68 | 1 | 20 | | | | \vdash | + | | SPARE SPARE | | | | | | |
| 70 | 1 | 20 | | | | \vdash | \dashv | | SPARE | | | | | | |
| 72 | 1 | 20 | | | | | _ | | SPARE | | | | | | |
| 74 | 1 | | | | | | 1 | | SPACE | | | | | | |
| 76 | 1 | | | | | | | | SPACE | | | | | | |
| 78 | 1 | | | | | | \prod | | SPACE | | | | | | |
| 80 | 1 | | | | | | | | SPACE | | | | | | |
| 82 | 1 | | | | | \vdash | \perp | | SPACE | | | | | | |
| 84 | 1 | | 4.500 | 670 | 4.005 | | | | SPACE | NEC 220 | 1/12 | 1 | | 004 | 12 \ / ^ |
| EC. LO | IG LOAD | | 1,500 6,700 | 679 6,420 | 1,685 7,560 | | | | 3864 VA 20680 VA | NEC 220 | | l= | | | 02 VA 10 VA |
| QUIPN | | | 4,625 | 6,525 | 6,350 | | | | 17500 VA | 80% | .++ | - | | | 00 VA |
| IV | | | 1,520 | 0,020 | 5,555 | | | | 555 771 | 0070 | | | | . +00 | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | _ | _ |
| OTAL I | LOAD | | 12,825 | 13,624 | 15,595 | | | | 42044 VA 117 A | | | = | | 3264 | 12 VA 91 A |

| PROJ | T: | ა810 | AND TWP I | 06/15/20 | 200A | | MLC | | CLASS: MOUNTING | 208/120V,3F SUR | PH,4W+G. RFACE | PANEL: RP-1A |
|--|---------------------------------------|----------|-----------------|-----------------|----------------|----------|----------|----|----------------------|---------------------------|-------------------|----------------------|
| BR/ NO. | A POLES | RC. | JUS A | VA BUS B | BUS C | L | OD R | | | F | REMARKS | |
| 1 | 1 | 20 | 374 | | D00 0 | L | | | LIGHTING | | | VIA RLP |
| 3 5 | 1 | 20 20 | | 457 | 553 | L | | | LIGHTING LIGHTING | | | |
| 7 | 1 | 20 | 225 | | 000 | L | | | | LIGHTING | | |
| 11 | 2 | 00 | | 270 | 070 | L | | | | LIGHTING | | VIA RLP |
| 11 13 | 1 | 20 20 | 195 | | 270 | L | | | EXTERIOR | LIGHTING | | VIA RLP VIA RLP |
| 15 | 1 | 20 | 100 | 200 | | | R | | REC. | | | VIVE |
| 17 | 1 | 20 | | | 400 | | | | DEDIC. RE | C. | | |
| 19 21 | 1 | 20 20 | 1200 | 900 | | | | 늗 | 2 REC. MW | | | |
| 23 | 1 | 20 | | 900 | 1000 | | | | REC. | | | |
| 25 | 1 | 20 | 1200 | | | | | | OVEN TO | AST | | |
| 27 29 | 1 | 20 | | 720 | 720 | | R | | 4 REC. 4 REC. | | | |
| 31 | 1 | 20 20 | 360 | | 720 | | R R | | 2 REC. | | | |
| 33 | 1 | 20 | 000 | 720 | | | R | | 4 REC. | | | |
| 35 | 1 | 20 | 700 | | 100 | | _ | Ε | GWH-1 | | | |
| 37 39 | 1 | 20 20 | 720 | 600 | | | R R | | 4 REC. 2 REC. | | | |
| 41 | 1 | 20 | | 000 | 900 | | 11 | Е | WASHER | | GFCI | |
| 43 | 2 | | 2500 | | | | | Е | DRYER | | | |
| 45 | 1 | 30 | | 2500 | 000 | | | E | חברה | | OFO! | |
| 47 49 | 1 | 20 20 | 900 | | 900 | H | | | REFR. REFR. | | GFCI GFCI | |
| 51 | 1 | 20 | 900 | 1000 | | | | E | REC. | | 0, 01 | |
| 53 | 1 | 20 | | | 1200 | | | Е | GD | | | |
| 55 | 1 | 20 | 400 | 400 | | | | | FACP | .0 | | |
| 57 59 | 1 | 20 20 | | 400 | 400 | | | | DEDIC. RE | | | |
| 61 | - | ×20× | ~400~ | | | \vdash | \vdash | | DEDIC. RE | | $\overline{\sim}$ | |
| 63 (| 1 | 20 | | 100 | | | | | GAS SHU | T-OFF | | } |
| 65 67 | | 20 | 1200 | | ~~~ | Ļ | U | | SHUNT TH | | | ///A DLD |
| 69 | 1 1 | 20 | 1200 | | | Τ | \vdash | - | SPARE | | | VIA RLP |
| 71 | 1 | 20 | | | | | | | SPARE | | | |
| 73 | 1 | | | | | | | | SPACE | | | |
| 75 77 | 1 | | | | | | | | SPACE SPACE | | | |
| 79 | 1 | | | | | | | | SPACE | | | |
| 81 | 1 | | | | | | | | SPACE | | | |
| 83 | 1 | | | | | | | | SPACE | | | |
| 2 | 1 | 20 | 540 | | | | В | | 3 REC. | | | |
| <u>2</u> 4 | 1 1 | 20 | 340 | 540 | | | R R | | 3 REC. | | | |
| 6 | 1 | 20 | | | 540 | | R | | 3 REC. | | | |
| 8 | 1 | 20 | 540 | | _ | | R | | 3 REC. | _ | _ | |
| 10 | 1 | 20 | | 540 | E40 | | R | | 3 REC. | | | |
| 12 14 | 1 | 20 20 | 540 | | 540 | H | R R | | 3 REC. | | | |
| 16 | 1 | 20 | 010 | 720 | | | R | | 4 REC. | | | |
| 18 | 1 | 20 | | | 600 | | R | | REC. | | | |
| 20 22 | 1 | 20 20 | 720 | 600 | | | R R | _ | 4 REC. REC. | | | |
| 24 | 1 | 20 | | 000 | 360 | | R | _ | 2 REC. | | | |
| 26 | 1 | 20 | 540 | | | | R | | 3 REC. | | | |
| 28 | 1 | 20 | | | | | | | SPARE | | | |
| 30 | 1 | 20 | 400 | | 600 | H | R | | REC. | | | |
| 32 34 | 1 | 20 20 | 400 | 600 | | | R | F | REC. HOOD | | | |
| 36 | 1 | 20 | | 550 | | | | | SPARE | | | |
| 38 | 3 | | 1000 | | | | | Е | | | | |
| 40 | | | | 1000 | 4 | | | E | ECUH-1 | | | |
| 42 | 1 | 20 | 360 | | 1000 | \vdash | Г | Е | 2 DEC | | | |
| 44 46 | 1 | 20 20 | 360 | | | | R | | 2. REC. SPARE | | | |
| 48 | 1 | 20 | | | | | | | SPARE | | | |
| 50 | 1 | 20 | | | | | | | SPARE | | | |
| 52 | 1 | 20 | | | | | | | SPARE | | | |
| 54 | 1 | 20 | 1656 | | | H | | г | SPARE | | | 2/4 UD |
| 56 58 | 1 | 30 30 | 1050 | 1656 | | | | | P-1 P-2 | | | 3/4 HP 3/4 HP |
| 60 | 1 | 20 | | 1000 | | | | | SPARE | | | O/ T II |
| 62 | 1 | 20 | | | | Н | | | SPARE | | | |
| 64 | 1 | _ | | | | | | | SPACE | | | |
| 66 | 1 | | | | | | | | SPACE | | | |
| 68 | 3 | | 2667 | 20 | | | | Шι | DA110= | | | |
| 70 72 | + | 50 | | 2667 | 2667 | | \vdash | E | RANGE | | | |
| | 2 | 50 | 520 | | 2667 | H | | | CP-1 | | | |
| | + - | 20 | J2U | 520 | | | | E | J1 -1 | | | |
| 74 | | | | | | | | | SPACE | | | |
| | 1 | | | | | | | | SPACE | | | |
| 74 76 | 1 | | | | | | | | SPACE | | | |
| 74 76 78 80 82 | 1 | | | | | ı | | | SPACE | NEC 220.42 | | |
| 74 76 78 80 82 84 | 1 1 1 | | | | | | | | | ハーし フンロイン | | |
| 74 76 78 80 82 84 | 1 1 1 NG LOAD | | 1,994 | 727 | 823 3 360 | | | | 3544 VA | | | 3190 VA |
| 74 76 78 80 82 84 IGHTIN | 1 1 1 NG LOAD | | 4,720 | 4,640 | 3,360 | | | | 12720 VA | NEC 220.44 | = | 11360 VA |
| 74 76 78 80 82 84 IGHTIN | 1 1 1 NG LOAD | | | | | | | | | | = | 11360 VA |
| 74 76 78 80 82 84 IGHTIN | 1 1 1 NG LOAD | | 4,720 | 4,640 | 3,360 | | | | 12720 VA | NEC 220.44 | = | |
| 74 76 78 80 82 84 GHTIN EC. LO | 1 1 1 NG LOAD OAD MENT | | 4,720 12,443 | 4,640 11,343 | 3,360 8,567 | | | | 12720 VA 32352 VA | NEC 220.44 | = | 11360 VA 25882 VA |
| 74 76 78 80 82 84 IGHTIN EC. LO | 1 1 1 NG LOAD | | 4,720 | 4,640 | 3,360 | | | | 12720 VA | NEC 220.44 | = | 11360 VA |





PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600 F 586.469.3607

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019



Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

01-28-2020 03-27-2020 SCHEMATIC DESIGN BIDDING-CONSTRUCTION

| CONSTRUCTION | 05-04-2020 |
|--------------|------------|
| CCD #1 | 06-03-2020 |
| CCD #2 | 06-16-2020 |

DRAWN BY NH

CHECKED BY

APPROVED BY

SHEET NAME

ELECTRICAL PANEL SCHEDULES

SHEET NO. E0-04

| PROJE PROJ I | | 75810 | .AND TWP F DATE: | S-1 09/18/20 | 200A | | MLC |) | CLASS: MOUNTING | 208/120V,3F | PH,4W+G. | PANEL: PP-GT |
|-----------------|----------------|----------|---------------------|-----------------|--------|----------|-------------|-----|--------------------|-------------|----------|-----------------|
| | ANCH CI | | DATE. | VA | | <u></u> | OD | F | IVICOINTING | | | 1 FF-01 |
| NO. | POLES | | BUS A | BUS B | BUS C | L | R | E | | F | REMARKS | |
| 1 | 3 | | 3325 | | | | | Е | | | | |
| 3 | | | | 3325 | | | | Е | HP-1 | | | 32.6 MCA |
| 5 | | 50 | | | 3325 | | | Е | | | | |
| 7 | 3 | | 2244 | | | | | Е | | | | |
| 9 | | | | 2244 | | | | Е | HP-2 | | | 22.0 MCA |
| 11 | | 25 | | | 2244 | | | Е | | | | |
| 13 | 3 | | 2244 | | | | | Е | | | | |
| 15 | | | | 2244 | | | | | HP-3 | | | 22.0 MCA |
| 17 | | 25 | | | 2244 | | | E | | | | |
| 19 | 3 | | 2244 | | | | | E | | | | |
| 21 | _/ | 1 | | 2244 | 0044 | | | 늗 | HP-4 | | | 22.0 MCA |
| 23 | | 25 | 0044 | | 2244 | | | E | | | | |
| 25 | 3 | | 2244 | 0044 | | | | E | LID 5 | | | 00.01101 |
| 27 | -/ | 25 | | 2244 | 2244 | | | | HP-5 | | | 22.0 MCA |
| 29 31 | 3 | 25 | 2948 | | 2244 | H | \vdash | E | | | | |
| 33 | + ° _ | | 2940 | 2948 | | | \vdash | 듣 | HP-6 | | | 28.9 MCA |
| 35 | - | 30 | | 2940 | 2948 | | | Ē | 1111-0 | | | 20.9 WCA |
| 37 | 1 | 30 | | | 2340 | | H | _ | SPACE | | | |
| 39 | 1 | | | | | | | | SPACE | | | |
| 41 | † i | | | | | | | | SPACE | | | |
| | | | | | | | | | 0.7.02 | | | |
| 2 | 3 | | 2100 | | | | | Е | | | | |
| 4 | | | | 2100 | | | | | P-5 | | 5 HP | |
| 6 | | 30 | | | 2100 | | | Е | | | | |
| 8 | 3 | | 2100 | | | | | Е | | | | |
| 10 | | | | 2100 | | | | | P-6 | | 5 HP | |
| 12 | | 30 | | | 2100 | | | Е | | | | |
| 14 | 1 | | | | | | | | SPACE | | | |
| 16 | 1 | | | | | | | | SPACE | | | |
| 18 | 1 | | | | | | | | SPACE | | | |
| 20 | 1 | | | | | | | | SPACE | | | |
| 22 | 1 | | | | | Ш | | | SPACE | | | |
| 24 | 1 | \vdash | | | | Ш | Ш | | SPACE | | | |
| 26 | 1 | | | | | | \square | | SPACE | | | |
| 28 | 1 | | | | | Ш | \square | | SPACE | | | |
| 30 | 1 | | | | | H | Н | | SPACE | | | |
| 32 | 1 | 20 | | | | Ш | \square | | SPARE | | | |
| 34 | 1 | 20 | | | | | \vdash | | SPARE | | | |
| 36 | 1 | 20 | | | | | Н | | SPARE | | | |
| 38 | 1 | 20 | | | | Ш | \sqcup | | SPARE | | | |
| 40 | 1 | 20 | | | | Ш | \sqcup | | SPARE | | | |
| 42 | 1 | 20 | | | | Ш | | | SPARE | NEO 000 40 | 1 | |
| | NG LOAD |) | | | | <u> </u> | | | | NEC 220.42 | | |
| REC. L | | | 40.445 | 40.445 | 40.445 | <u> </u> | | | 500.453.45 | NEC 220.44 | = | 100=5 |
| EQUIPI | VIENI | | 19,449 | 19,449 | 19,449 | <u> </u> | | | 58347 VA | 80% | | 46678 |
| | | | | | | | | | | | ļ | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| TOTAL | LOAD | | 19,449 | 19,449 | 19,449 | | | | 58347 VA | | = | 46678 |
| | | | | | | | | | 162 A | | | 130 |
| | | | | | | СО | <u>NN</u> I | EC. | TED LOAD | | DI | EMAND LOAD |
| | | | | | | | | | | | | |

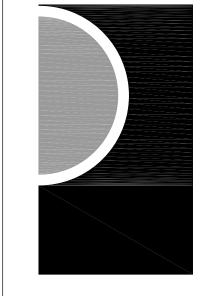
| | | | | MAIN DISTRIBUTION 120/208V, 3PH,4W+G | | | |
|----------|-----------|---------|-------------|---|------------------|------------------|---------------------|
| POSITION | CIRCUIT E | BREAKER | - EQUIPMENT | | CONNECTED LOAD | DEMAND LOAD | FEEDER SIZE (COPPE |
| | FRAME | TRIP | | | (KVA) | (KVA) | (SEE RISER FOR AL) |
| 1 | 200A/3P | 200 A | PP-GT | | 58.3 | 46.7 | 2"C, 4#3/0 + 1#6G |
| 2 | 200A/3P | 200 A | RP-1A | | 48.5 | 40.4 | 2"C, 4#3/0 + 1#6G |
| 3 | 200A/3P | 200 A | RP-1B | | 42.0 | 32.6 | 2"C, 4#3/0 + 1#6G |
| 4 | 200A/3P | 200 A | RP-1C | | 52.2 | 44.1 | 2"C, 4#3/0 + 1#6G |
| 5 | 200A/3P | 200 A | RP-2A | | 32.8 | 27.2 | 2"C, 4#3/0 + 1#6G |
| 6 | 30A/3P | 20 A | ERV-1 | 14.8 MCA | 4.5 | 3.6 | 3/4"C, 3#12 + 1#12G |
| 8 | 30A/3P | 30 A | EF-1 | 2.0 HP | 2.8 | 2.2 | 3/4"C, 3#10 + 1#10G |
| 9 | 30A/2P | 15 A | ACCU-1 | 13.0 MCA | 2.3 | 1.8 | 3/4"C, 3#12 + 1#12G |
| 10 | 60A/3P | | SPARE | | | | |
| 10 | 30A/3P | 25 A | DU-1 | 6.0KW | 6.0 | 4.8 | 3/4"C, 3#10 + 1#10G |
| 11 | 30A/3P | 20 A | ECUH-1 | 5.0KW | 5.0 | 4.0 | 3/4"C, 3#12 + 1#12G |
| 12 | 30A/3P | 20 A | ECUH-2 | 5.0KW | 5.0 | 4.0 | 3/4"C, 3#12 + 1#12G |
| 13 | 30A/3P | | SPARE | | | | |
| 14 | 60A/3P | | SPARE | | | | |
| 15 | 30A/3P | | SPARE | | | | |
| 16 | 3P | | SPACE | | | | |
| 17 | 3P | | SPACE | | _ | | |
| 18 | 3P | | SPACE | | | | |
| | | | TOTAL DEI | MAND LOAD: | 250 KVA 693 A | 204 KVA 565 A | |

| ROJE ROJ N | | HIGHL 75810 | AND TWP F DATE: | S-1 09/18/20 | 200A | ı | MLC |) | CLASS: 120/208V,3PH,4W+G. PANEL: MOUNTING: FLUSH RP-2A |
|---------------------|--------------------|----------------|--------------------|-----------------|----------------|---|--------|----|--|
| BRA | NCH CI | RC. | | WATTS | | С | OD | | REMARKS |
| NO. 1 | POLES 1 | BKR. | BUS A 350 | BUS B | BUS C | L | R | Е | LIGHTING |
| 3 | 1 | 20 | 000 | 300 | | Ĺ | | | LIGHTING |
| 5 7 | 1 | 20 20 | | | | | | | SPARE SPARE |
| 9 | 1 | 20 | | | | | | | SPARE |
| 11 | 1 | 20 | | | | | | | SPARE |
| 13 15 | 1 | 20 20 | 540 | 540 | | | R R | | 3 REC. 3 REC. |
| 17 | 1 | 20 | | 340 | 540 | | R | | 3 REC. |
| 19 | 1 | 20 | | | | | | | SPARE |
| 21 | 1 | 20 20 | | | 1200 | | | _ | SPARE B-1 |
| 25 | ' | 20 | | | 1200 | | | _ | SHUNT TRIP |
| 27 | 1 | 20 | | 400 | | | | | 1 REC. |
| 29 31 | 1 | 20 20 | 400 | | 400 | | | | 1 REC. 1 REC. |
| 33 | 1 | 20 | 400 | 1200 | | | | | DOOR OPERATOR |
| 35 | 1 | 20 | | | 1200 | | | | DOOR OPERATOR |
| 37 39 | 1 | 20 20 | 1200 | 1200 | | | | | DOOR OPERATOR DOOR OPERATOR |
| 41 | 1 | 20 | | 1200 | 800 | | | | DOOR OPERATOR |
| 43 | 1 | 20 | 400 | | - | | | Е | CEILING J-BOX |
| 45 47 | 1 | 20 20 | | 400 | | | | Е | CEILING J-BOX SPARE |
| 47 | 1 | 20 | | | | | | | SPARE |
| 51 | 1 | 20 | | | | | | | SPARE |
| 53 | 1 | 20 | | | | | | | SPARE |
| 55 57 | 1 | 20 20 | | | | | | | SPARE SPARE |
| 59 | 1 | 20 | | | | | | | SPARE |
| 61 | 1 | | | | | | | | SPACE |
| 63 65 | 1 | | | | | | | | SPACE SPACE |
| 67 | 1 | | | | | | | | SPACE |
| 69 | 1 | | | | | | | | SPACE SPACE |
| 71 73 | 3 | | 400 | | | | | Е | SPACE |
| 75 | | | | 400 | | | | Е | CEILING J-BOX |
| 77 | | 30 | 400 | | 400 | | | Еι | |
| 79 81 | 3 | | 400 | 400 | | | | EE | CEILING J-BOX |
| 83 | | 30 | | .00 | 400 | | | E | |
| 0 | | 00 | 700 | | | | _ | | 4.050 |
| 4 | 1 | 20 20 | 720 | 360 | | | R R | | 4 REC. 2 REC. |
| 6 | 1 | 20 | | 000 | 540 | | R | | 3 REC. |
| 8 | 1 | 20 | 600 | 000 | | | R | l | DEDICATED CKT |
| 10 12 | 1 | 20 20 | | 800 | 540 | | R | ╘ | EWC 3 REC. |
| 14 | 1 | 20 | 1680 | | 040 | | | | ENGINE EXHAUST |
| 16 | 1 | 20 | | 1680 | | | | | ENGINE EXHAUST |
| 18 20 | 1 | 20 20 | 1680 | | 1680 | | | | ENGINE EXHAUST ENGINE EXHAUST |
| 22 | 1 | 20 | 1000 | 1680 | | | | | ENGINE EXHAUST |
| 24 | 1 | 20 | | | 1680 | | | Е | ENGINE EXHAUST |
| 26 | 1 | 20 | 1680 | 4000 | | | | | ENGINE EXHAUST |
| 28 30 | 1 | 20 20 | | 1680 | 576 | | | | ENGINE EXHAUST IRH-1 |
| 32 | 1 | 20 | 576 | | 0.0 | | | | IRH-2 |
| 34 | 1 | 20 | | 576 | | | | Е | IRH-9 |
| 36 | 1 | 20 | | | 576 | | | Е | IRH-10 |
| 38 40 | 1 | 20 20 | | | | | | | SPARE SPARE |
| 42 | 1 | 20 | | | | | | | SPARE |
| 44 | 1 | 20 | | | | | | | SPARE |
| 46 48 | 1 | 20 | | | | | | | SPARE SDARE |
| 48 50 | 1 | 20 20 | | | | | | | SPARE SPARE |
| 52 | 1 | 20 | | | | | | | SPARE |
| 54 | 1 | 20 | | | | | | | SPARE |
| 56 | 1 | 20 | | | | | | | SPARE |
| 58 60 | 1 | 20 20 | | | | | | | SPARE SPARE |
| 62 | 1 | 20 | | | | | | | SPARE |
| 64 | 1 | 20 | | | | | | | SPARE |
| 66 68 | 1 | 20 20 | | | | | | | SPARE SPARE |
| 70 | 1 | 20 | | | | | | | SPARE |
| 72 | 1 | 20 | | | | | | | SPARE |
| 74 | 1 | | | | | | | | SPACE |
| 76 70 | 1 | | | | | | | | SPACE |
| 78 80 | 1 | | | | | | | | SPACE SPACE |
| 82 | 1 | | | | | | | | SPACE |
| 84 | 1 | | | | | | | | SPACE |
| | IG LOAD | | 350 | 300 | 4.000 | | | | 650 VA NEC 220.42 = 650 V 4380 VA NEC 220.44 = 4380 V |
| | TACLE L MENT LO | | 1,860 8,416 | 900 10,416 | 1,620 8,912 | | | | 4380 VA NEC 220.44 = 4380 V 27744 VA 80% = 22195 V |
| | | | 5, | . 5, . 10 | 5,512 | | | | = |
| | | | | | | | | | |
| | LOAD | | 10,626 | 11,616 | 10,532 | | | | 32774 VA = 27225 V |

| PROJE PROJ I | CT· | НІСПІ | AND TWP F | S-1 | 200A | | VILC | _ | CLASS: 208/ | 120V.3PF | 1 4W±C | PANEL: | |
|------------------------------------|----------|----------|-----------|-------------|---------------|----------|---------|---|-------------------------------|----------|--------------|---------|-------------------|
| DD. | VO: | 75810 | DATE: | 09/18/20 | 200A | | | | MOUNTING: | SURF | , - | | RP-1C |
| NO. | NCH CIF | | BUS A | VA BUS B | BUS C | | OD R | | | RE | EMARKS | | |
| 1 1 | 1 | 20 | 700 | БООБ | BUS C | L | К | | LIGHTING | | | | |
| 3 | 1 | 20 | | 784 | | L | | | LIGHTING | | | | |
| 5 7 | 1 | 20 20 | 1320 | | 700 | L | | Е | LIGHTING F-1 | | | | |
| 9 | 1 | 20 | .020 | 560 | | L | | | LIGHTING | \ | VIA RLP | | |
| 11 13 | 1 | 20 20 | 200 | | 380 | L | | Е | <u>LIGHTING</u> FAN | | | | |
| 15 | 1 | 20 | 200 | 1200 | | L | | | SIGN | | | | |
| 17 | 1 | 20 | | | | | (| | SPARE | | | | |
| 19 21 | 1 | 20 20 | | 400 | | | | E | SPÂRE EF-3 | | | | |
| 23 | 1 | 30 | | 400 | 1680 | | | | EF-4 | | | | |
| 25 | 1 | 20 | 1000 | 4000 | | | | | O.H. DOOR | | | | |
| 27 29 | 1 | 20 20 | | 1000 | 1000 | | | | O.H. DOOR O.H. DOOR | | | | |
| 31 | 1 | 20 | 1000 | | | | | | O.H. DOOR | | | | |
| 33 35 | 1 | 20 | | 540 | 400 | | R | _ | 3 REC. CELING J-BOX | | | | |
| 37 | 1 | 20 20 | 400 | | 400 | | | | CELING J-BOX | | | | |
| 39 | 1 | 20 | | 540 | | | R | | 3 REC. | | | | |
| 41 43 | 1 | 20 20 | 400 | | 360 | | R | F | 2 REC. CELING J-BOX | | | | |
| 45 | 1 | 20 | 400 | 400 | | | | | CELING J-BOX | | | | |
| 47 | 1 | 20 | | - | 360 | | R | | 2 REC. | | | | |
| 49 51 | 1 | 20 20 | 576 | 576 | | \vdash | | | IRH-3 IRH-4 | | | | |
| 53 | 1 | 20 | | 310 | 576 | | | | IRH-5 | | | | |
| 55 | 1 | 20 | 576 | | | | | | IRH-6 | | | | |
| 57 59 | 1 | 20 20 | | 600 | 600 | | R | F | 2 REC. DOOR OPENER | | | | |
| 61 | 1 | 20 | 360 | | 000 | | R | _ | 2 REC. | | | | |
| 63 | 1 | 20 | | 540 | 000 | | R | | 3 REC. | | | | |
| 65 67 | 1 | 20 20 | 576 | | 360 | | R | F | 2 REC. IRH-7 | | | | |
| 69 | 1 | 20 | 310 | 576 | | | | | IRH-8 | | | | |
| 71 | 1 | 20 | | | | | | | SPARE | | | | |
| 73 75 | 3 | | 960 | 960 | | | | E | EXTRACTOR | | | | 8.0 A |
| 77 | | 15 | | 900 | 960 | | | E | EXTRACTOR | | | | 6.0 A |
| 79 | 3 | | 3667 | | | | | Е | | | | | |
| 81 83 | | 60 | | 3667 | 3667 | | | E | SCBA | | | | |
| 03 | | 00 | | | 3007 | | | | | | | | |
| 2 | 1 | 20 | 720 | | | | R | | 4 REC. | | | | |
| <u>4</u> 6 | 1 | 20 20 | | 360 | 400 | | R R | | 2 REC. 2 M43WP REC. | | | | |
| 8 | 3 | 20 | 400 | | 400 | | K | Е | Z W43WF REG. | | | | |
| 10 | | | | 400 | | | | | CEILING J-BOX | | | | |
| 12 14 | 3 | 30 | 400 | | 400 | | | E | | | | | |
| 16 | 3 | | 400 | 400 | | | | | CEILING J-BOX | | | | |
| 18 | | 30 | | | 400 | | | Е | | | | | |
| 20 22 | 2 | 30 | 2500 | 2500 | | | | E | DRYER | | | | |
| 24 | 2 | 00 | | 2300 | 2500 | | | E | DRYER | | | | |
| 26 | | 30 | 2500 | | | | | E | | | | | |
| 28 30 | 1 | | | | | | | | SPACE SPACE | | | | |
| 32 | 3 | | 400 | | | | | Е | OI NOL | | | | |
| 34 | | | | 400 | 400 | | | E | CEILING J-BOX | | | | |
| 36 38 | 3 | 30 | 400 | | 400 | | | E | | | | | |
| 40 | | | 400 | 400 | | | | E | CEILING J-BOX | | | | |
| 42 | | 30 | | | 400 | | | E | | | | | |
| 44 | 1 | 20 | | 1200 | | | | Г | SPARE | | GECI | | |
| 46 48 | 1 | 20 20 | | 1200 | 1200 | | | | WASHER WASHER | | GFCI GFCI | | |
| 50 | 1 | 20 | 720 | | .=•• | | R | | 4 REC. | | | | |
| 52 | 1 | 20 | | 540 | | | R | | 3 REC. | | | | |
| 54 56 | 1 | 20 20 | 900 | | 540 | | R R | | 3 REC. 5 REC. | | | | |
| 58 | 1 | 20 | 300 | 360 | | | R | | 2 REC. | | | | |
| 60 | 1 | 20 | | | 540 | | R | | 3 REC. | | | | |
| 62 | 1 | 20 | 540 | E40 | | | R | | 3 REC. | | | | |
| 64 66 | 1 | 20 20 | | 540 | 540 | | R R | | 3 REC. 3 REC. | | | | |
| 68 | 1 | 20 | 360 | | | | R | | 2 REC. | | | | |
| 70 | 1 | 20 | | 200 | | | | | CO/NO2 SENSOR | | | | |
| 72 74 | 1 | 20 20 | 400 | | 360 | | | | EF-2 FS/TS AND /AV | | | | |
| 76 | 1 | 20 | 400 | | | | | | SPARE | | | | |
| 78 | 1 | 20 | | | | | | | SPARE | | | | |
| 80 | 1 | 20 | | | | | | | SPARE | | | | |
| | 2 | | | 2912 | 0010 | | | | AIR COMPRESSO |)R | | | |
| 82 | IG I OAD | 60 20 | 700 | 2,544 | 2912 1,080 | | | Е | 4324 VA NEC 2 | 220.42 | | | 3463 VA |
| 84 | NO LUAD | 20 | 3,600 | 4,020 | 3,100 | | | | | | = | | 10360 VA |
| 84 LIGHTIN | DAD | | | | | | | | |)% | | | 40896 VA |
| 84 LIGHTIN REC. LO | | | 17,675 | 15,991 | 17,455 | | | | * | | | | 40090 VA |
| 84 LIGHTIN REC. LO | | | 17,675 | 15,991 | 17,455 | | | | | | | | 40090 VA |
| 84 LIGHTIN REC. LO | | | 17,675 | 15,991 | 17,455 | | | | | | | | 40090 VA |
| 84 LIGHTIN REC. LO EQUIPN | /ENT | | 21,975 | 15,991 | 21,635 | | | | | | = | | 54719 VA |
| | /ENT | | | | 21,635 | | | | 66164 VA 184 A 'ED LOAD | | | EMAND L | 54719 VA 152 A |

| PROJE PROJ N | | HIGHL 75810 | AND TWP I | S-1 09/18/20 | 200A | | VIL(| <u> </u> | CLASS: | 208/120V,3PI SURF | , | PANEL: RP-1B |
|--------------------|---------------|----------------|------------------|-----------------|----------------|--------|--------|---------------|----------------------|----------------------|----------|-------------------|
| BRA | NCH CIF | RC. | | VA | _ | _ | OD | | | | EMARKS | 15 |
| NO. 1 | POLES 1 | BKR. | BUS A 600 | BUS B | BUS C | L L | R | Е | LIGHTING | 111 | INIAIRIO | |
| 3 | 1 | 20 | 000 | 679 | | L | | | LIGHTING | | | |
| 5 | 1 | 20 | | | 485 | L | | | LIGHTING | | VIA RLP | |
| 7 9 | 1 | 20 20 | 540 | | | (| _ | | LIGHTING SRARE | | VIA RLP | |
| 11 | 1 | 20 | | | 1200 | L | | Ľ | SIGN | | VÍA RĽP | |
| 13 15 | 1 | 20 20 | 400 | | | Ł | _ | ightharpoonup | TRAFFIC LI | GHT8 | | |
| 17 | 1 | 20 | | | 1200 | L | | | REC. FOR S | SIGN | VIA RLP | |
| 19 | 1 | 20 | 720 | 5.10 | | | R | | 5 REC. | | | |
| 21 23 | 1 | 20 20 | | 540 | 1080 | | R R | | 3 REC. 6 REC. | | | |
| 25 | 1 | 20 | | | 1000 | | | | SPARE | | | |
| 27 29 | 1 | 20 20 | | | 720 | | R | | SPARE 4 REC. | | | |
| 31 | 1 | 20 | 540 | | 720 | | R | | 3 REC. | | | |
| 33 | 1 | 20 | | 900 | 700 | | R | | 5 REC. | | | |
| 35 37 | 1 | 20 | 900 | | 720 | | R R | | 4 REC. 5 REC. | | | |
| 39 | 1 | 20 | | 540 | | | R | | 5 REC. | | | |
| 41 43 | 1 | 20 20 | 540 | | 720 | | R R | | 4 REC. | | | |
| 45 | 1 | 20 | U 7 U | 1080 | | | R | | 6 REC. | | | |
| 47 | 1 | 20 | E40 | | 540 | | R | | 3 REC. | | | |
| 49 51 | 1 | 20 20 | 540 | 540 | | | R R | | 3 REC. 3 REC. | | | |
| 53 | 1 | 20 | | - | 1080 | | R | | 4 REC. | | | |
| 55 57 | 1 | 20 20 | 100 | 400 | | | | | STF-1 PA SYSTEN | Л | | |
| 59 | 1 | 20 | | 130 | 400 | | | | RADIO SYS | | | |
| 61 63 | 1 | 20 20 | | | | | | | SPARE SPARE | | | |
| 65 | 1 | 20 | | | | | | | SPARE | | | |
| 67 | 1 | | | | | | | | SPACE | | | |
| 69 71 | 1 | | | | | | | | SPACE SPACE | | | |
| 73 | 1 | | | | | | | | SPACE | | | |
| 75 77 | 1 | | | | | | | _ | SPACE SPACE | | | |
| 79 | 1 | | | | | | | | SPACE | | | |
| 81 83 | 1 | | | | | | | | SPACE SPACE | | | |
| ంక | 1 | | | | | | | | SFACE | | | |
| 2 | 1 | 20 | 900 | 400 | | | R | | 5 REC. | | | |
| 4 6 | 1 | 20 20 | | 400 | 1000 | | R | | 2 REC. PROJECTO |)R | | |
| 8 | 1 | 20 | 720 | | .000 | | R | Ė | 4 REC. | | | |
| 10 12 | 1 | 20 20 | | 1080 | 1080 | | R R | | 6 REC. 6 REC. | | | |
| 14 | 1 | 20 | 900 | | 1000 | | R | | 5 REC. | | | |
| 16 | 1 | 20 | | 540 | 000 | | R | | 3 REC. | | | |
| 18 20 | 1 | 20 20 | 1000 | | 900 | | R | | 5 REC. COFFEE | | | |
| 22 | 1 | 20 | | 1000 | | | _ | Е | COFFEE | | | |
| 24 26 | 1 | 20 20 | 540 | | 720 | | R R | | 4 REC. 3 REC. | | | |
| 28 | 1 | 20 | | 1000 | | | | Е | TBB | | | |
| 30 32 | 1 | 20 20 | 400 | | 1000 | | R | | TBB 2 REC. | | | |
| 34 | 1 | 20 | 400 | 800 | | | R | | 2 REC. | | | |
| 36 | 1 | 20 | | | 900 | | | Е | EWC | _ | | |
| 38 40 | 1 | 20 20 | 600 | 900 | | | | | EQUIPMEN EQUIPMEN | | | |
| 42 | 1 | 20 | | 330 | 800 | | | Е | REF. | | | |
| 44 | 1 | 20 | 600 | | | | | Е | EQUIPMEN | | | |
| 46 48 | 1 2 | 20 | | 900 | 1125 | | | | EQUIPMEN EBB-1 | I | | |
| 50 | | 20 | 1125 | | 20 | | | Е | | | | |
| 52 | 2 | | | 1125 | 4405 | | | | EBB-1 | | | |
| 54 56 | 1 | 20 20 | | | 1125 | | | Е | SPARE | | | |
| 58 | 1 | 20 | | | | | | | SPARE | | | |
| 60 | 1 | 20 | | | | | | _ | SPARE | | | |
| 62 64 | 1 | 20 20 | | | | | | | SPARE SPARE | | | |
| 66 | 1 | 20 | | | _ | | | | SPARE | | | |
| 68 70 | 1 | 20 20 | | | | | | | SPARE SPARE | | | |
| 70 | 1 | 20 | | | | | | | SPARE | | | |
| 74 | 1 | | | | | | | | SPACE | | | |
| 76 | 1 | | | | | | | | SPACE | | | |
| 78 80 | 1 | | | | | | | | SPACE SPACE | | | |
| 82 | 1 | | | | | | | | SPACE | | | |
| 84 LICHTIN | 1 | | 4.540 | 070 | 0.005 | | | | SPACE | NEC 220 42 | | 07001 |
| LIGHTIN REC. LO | G LOAD DAD | | 1,540 6,700 | 679 6,420 | 2,885 7,560 | | | | 5104 VA 20680 VA | NEC 220.42 : | = | 3736 V 15340 V |
| EQUIPN | | | 3,425 | 5,325 | 6,350 | | | | 15100 VA | 80% | | 12080 V |
| | | | | | | | | | | | | |
| | | | | | | | | | + | | | |
| TOTAL I | OAD | | 11,665 | 12,424 | 16,795 | | | | 40884 VA | | = | 31156 V |
| | | | | | 10,100 | | | | 114 A | | | 87 |

| PROJE | | | AND TWP F | | 200A | | ИLC |) | CLASS: | 208/120V,3 | | PANEL: |
|---------------------|----------------|----------|-----------|-----------------------|--------|----------|--------|----------|----------------------|------------|--------------|---------|
| PROJ N | IO: NCH CIF | 75810 | DATE: | 09/18/20 VA | | | OD | _ | MOUNTING | SUI | RFACE | RP-1A |
| | POLES | | BUS A | BUS B | BUS C | | | E | • | I | REMARKS | |
| 1 | 1 | 20 | 374 | | | L | | | LIGHTING | | | VIA RLP |
| 3 | 1 | 20 | | 457 | 550 | L | | | LIGHTING | | | |
| 5 7 | 1 | 20 20 | 225 | | 553 | L | | | LIGHTING EXTERIOR | LIGHTING | | |
| 9 | 2 | | 220 | 270 | | L | | | EXTERIOR | | | VIA RLP |
| 11 | | 20 | | | 270 | L | | | EXTERIOR | | | VIA RLP |
| 13 | 1 | 20 | 195 | 222 | | L | _ | | EXTERIOR | LIGHTING | | VIA RLP |
| 15 17 | 1 | 20 20 | | 200 | 400 | | R | F | REC. DEDIC. RE | :C | | |
| 19 | 1 | 20 | 1200 | | 400 | | | | 2 REC. | .0. | | |
| 21 | 1 | 20 | | 900 | | | | | MW | | | |
| 23 | 1 | 20 | 4000 | | 1000 | | | | REC. | 0.7 | | |
| 25 27 | 1 | 20 20 | 1200 | 720 | | | R | | OVEN TOA 4 REC. | ASI | | |
| 29 | 1 | 20 | | 720 | 720 | | R | | 4 REC. | | | |
| 31 | 1 | 20 | 360 | | - | | R | | 2 REC. | | | |
| 33 | 1 | 20 | | 720 | | | R | | 4 REC. | | | |
| 35 37 | 1 | 20 20 | 720 | | 100 | | R | | GWH-1 4 REC. | | | |
| 39 | 1 | 20 | 720 | 600 | | | R | | 2 REC. | | | |
| 41 | 1 | 20 | | 000 | 900 | | | | WASHER | | GFCI | |
| 43 | 2 | | 2500 | | | | | | DRYER | | | |
| 45 | | 30 | | 2500 | 000 | Ш | | E | | | CECI | |
| 47 49 | 1 | 20 20 | 900 | | 900 | Н | | | REFR. REFR. | | GFCI GFCI | |
| 51 | 1 | 20 | 500 | 1000 | | | | | REC. | | J. J. | |
| 53 | 1 | 20 | | | 1200 | | | Ε | GD | | | |
| 55 | 1 | 20 | 400 | 400 | | | | | FACP | ·C | | |
| 57 59 | 1 | 20 20 | | 400 | 400 | \vdash | | | DEDIC. RE | | | |
| 61 | 1 | 20 | 400 | | 700 | H | | | DEDIC. RE | | | |
| 63 | 1 | 20 | | 100 | | | | | GAS SHUT | T-OFF | | |
| 65 | | | | | | | | | SHUNT TR | | | |
| 67 69 | 1 | 20 | 1200 | | | L | | | SITE SIGN SPARE | | | VIA RLP |
| 71 | 1 | 20 20 | | | | | | | SPARE | | | |
| 73 | 1 | 20 | | | | | | | SPACE | | | |
| 75 | 1 | | | | | | | | SPACE | | | |
| 77 | 1 | | | | | | | | SPACE | | | |
| 79 81 | 1 | | | | | | | | SPACE SPACE | | | |
| 83 | 1 | | | | | | | | SPACE | | | |
| | | | | | | | | | | | | |
| 2 | 1 | 20 | 540 | | | | R | | 3 REC. | | | |
| 6 | 1 | 20 20 | | 540 | 540 | | R | | 3 REC. 3 REC. | | | |
| 8 | 1 | 20 | 540 | | 340 | | R | | 3 REC. | | | |
| 10 | 1 | 20 | 0.0 | 540 | | | R | | 3 REC. | | | |
| 12 | 1 | 20 | | | 540 | | R | | 3 REC. | | | |
| 14 16 | 1 | 20 20 | 540 | 720 | | | R R | | 3 REC. 4 REC. | | | |
| 18 | 1 | 20 | | 720 | 600 | | R | | REC. | | | |
| 20 | 1 | 20 | 720 | | | | R | | 4 REC. | | | |
| 22 | 1 | 20 | | 600 | | | R | | REC. | | | |
| 24 | 1 | 20 | F.40 | | 360 | | R | | 2 REC. | | | |
| 26 28 | 1 | 20 20 | 540 | | | | R | | 3 REC. SPARE | | | |
| 30 | 1 | 20 | | | 600 | | R | | REC. | | | |
| 32 | 1 | 20 | 400 | | | | R | | REC. | | | |
| 34 | 1 | 20 | | 600 | | | | E | HOOD | | | |
| 36 38 | 3 | 20 | 1000 | | | \vdash | | E | SPARE | | | |
| 40 | 3 | | 1000 | 1000 | | \vdash | | | ECUH-1 | | | |
| 42 | | 20 | | 1000 | 1000 | | | E | | | | |
| 44 | 1 | 20 | 360 | | | | R | | 2. REC. | | | |
| 46 | 1 | 20 | | | | | | | SPARE | | | |
| 48 | 1 | 20 | | | | | | _ | SPARE | | | |
| 50 52 | 1 | 20 20 | | | | \vdash | | _ | SPARE SPARE | | | |
| 54 | 1 | 20 | | | | | | | SPARE | | | |
| 56 | 1 | 30 | 1656 | | | | | Е | P-1 | | | 3/4 HP |
| 58 | 1 | 30 | | 1656 | | | | | P-2 | | | 3/4 HP |
| 60 | 1 | 20 | | | | | | | SPARE | | | |
| 62 | 1 | 20 | | | | | | | SPARE | | | |
| 64 | 1 | | | | | | | <u> </u> | SPACE | | | |
| 66 68 | 3 | | 2667 | | | | | E | SPACE | | | |
| 70 | | | 2007 | 2667 | | | | | RANGE | | | |
| 72 | | 50 | | _557 | 2667 | \vdash | | E | | | | |
| 74 | 2 | | 520 | | | | | Е | CP-1 | | | |
| 76 | | 20 | | 520 | | | | Е | | | | |
| 78 | 1 | | | | | Ш | | <u> </u> | SPACE | | | |
| 80 | 1 | | | | | \vdash | _ | \vdash | SPACE | | | |
| 82 84 | 1 | | | | | | | | SPACE SPACE | | | |
| | G LOAD | | 1,994 | 727 | 823 | H | | l | 3544 VA | NEC 220.42 | | 3190 V |
| REC. LC | | | 4,720 | 4,640 | 3,360 | | | | 12720 VA | NEC 220.44 | = | 11360 V |
| QUIPM | IENT | | 12,443 | 11,343 | 8,567 | | | | 32352 VA | 80% | | 25882 V |
| | | | | | | | | | | | | |
| | | | | | | _ | | | | | | |
| OTAL L | OAD | | 19,157 | 16,710 | 12,750 | | | | 48616 VA | | <u> </u> | 40432 V |
| () I \(\D \) \(\) | | | | | | | | | | | | |



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

F 586.469.3607

CONSULTANT



KEY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

CD #1 06-03-2020 CD #2 06-16-2020

DRAWN BY

NH

CHECKED BY

APPROVED BY

SHEET NAME

ELECTRICAL PANEL SCHEDULES

SHEET NO. **E0-04**

| chedule | | | | | | | | |
|---------|-------|--------------|---|--|--------------|-----------------|--------------------|-------|
| Symbol | Label | Manufacturer | Catalog Number | Description | Lamp | Number Lamps | Lumens Per Lamp | VOLT |
| 7 | "SA" | ANP LIGHTING | BVA2401-P117LD4-T3-4 SERIES MVOLT | DECORATIVE POLE-POST MOUNTS; FINISH AND POLE/POST TO BE SELECTED BY ARCHITECT | 117W LED | 1 | 13,707LM | MVOL |
| | "SA1" | ANP LIGHTING | BVA2401-P117LD4-T3-4 SERIES MVOLT TWIN MOUNTED AT 90° | SAME AS TYPE "SA" EXCEPT TWIN UNIT WITH TWO LUMINAIRES | (2)-117W LED | 2 | 13,707LM | MVOL |
| | "SB" | HYDREL | TPS2 SERIES | OUTDOOR ARCHITECTURA LJ-BOX MOUNTED FLOOD LIGHT, SPOT DISTRIBUTION | 64W LED | 1 | 4,100LM | MVOLT |

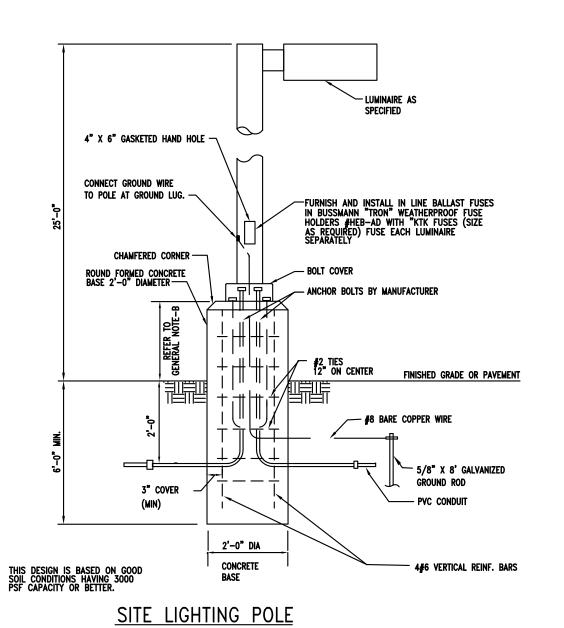


GENERAL SITE PLAN NOTES:

- A. REFER TO SHEET E0.001 FOR ELECTRICAL LEGEND.
- B. LOCATE SITE LIGHTING POLES MIN. 3' BEHIND THE CURB NEXT TO DRIVE WAYS AND PARKING (VEHICLE TRAFFIC AREAS). 6" CONCRETE BASE SHALL BE USED THEN, IN LIEU OF THE 3'-0" SHOWN ON THE SITE LIGHTING POLE DETAIL THIS SHEET, COORDINATE WITH ARCHITECT/OWNER.

KEYED NOTES:

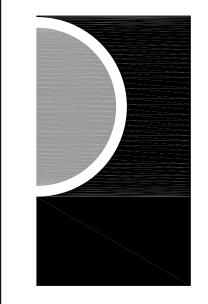
- EXACT LOCATION FOR UTILITY TRANSFORMER TO BE VERIFIED WITH UTILITY CO. AND ARCHITECT/OWNER. MAINTAIN THE REQUIRED CLEARANCES AROUND THE EQUIPMENT AND AWAY FROM THE BUILDING.
- ELECTRICAL CONTRACTOR SHALL PROVIDE BASE BID PRICE FOR FURNISHING AND INSTALLING ELECTRICAL AND TELEPHONE/CABLE TV UNDERGROUND SERVICE RUNS AS INDICATED ON THE SITE PLAN. THE EXACT SERVICE POINT IS TO BE DETERMINED BY THE UTILITY COMPANIES. PROVIDE ADDITIONAL ADD AND DEDUCT PER LINEAR FOOT UNIT PRICES FOR SERVICE RUN LENGTHS GREATER THAN AND LESS THAN THE LENGTHS SHOWN.
- 3 EXACT LOCATIONS AND QUANTITIES OF FLAG POLES SHALL BE COORDINATED WITH CIVIL AND ARCHITECT/OWNER, PROVIDE ONE FLOOD LIGHT FOR EACH FLAG POLE.
- PROVIDE WP J-BOXES MOUNTED ON 6" AFG CONCRETE BASE ON DEDICATED GFCI BRANCH BREAKER FOR SITE SIGNS, EXACT LOCATIONS AND QUANTITIES TO BE COORDINATED WITH CIVIL AND ARCHITECT/OWNER.
- PROVIDE POWER, RACEWAYS AND WP BOXES FOR ACCESS CONTROL AND SECURITY SYSTEM DEVICES. EXACT LOCATIONS AND REQUIREMENTS TO BE COORDINATED WITH SYSTEM PROVIDER AND ARCHITECT/OWNER. PROVIDE 2°C IN ADDITION TO THE POWER CONDUIT FOR LOW VOLTAGE WIRING AND PROVIDE ADDITIONAL CONDUITS FOR INTERWIRING WITH DOORS AND MOTORIZED GATES AS REQUIRED.
- EXACT LOCATION AND REQUIREMENTS FOR BUILDING EQUIPMENT (COMPACTOR, MOTORIZED GATES, ETC.) TO BE COORDINATED WITH ARCHTIECT/OWNER. INFORMATION INDICATED IN DOCUMENTS IS FOR REFERENCE ONLY.



DETAIL - TYPE "SA"&"SA1"

NOT TO SCALE

PARTNERS



PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is

protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

P 586.469.3600 F 586.469.3607

CONSULTANT



KEY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

| ISSUES / REVISIONS | |
|----------------------|------------|
| SCHEMATIC DESIGN | 01-28-2020 |
| BIDDING-CONSTRUCTION | 03-27-2020 |
| ADDENDUM # 1 | 04-20-2020 |
| CONSTRUCTION | 05-04-2020 |
| | |

DRAWN BY

CHECKED BY

IEGNED BI

APPROVED BY

SHEET NAME

ELECTRICAL SITE PLAN

SHEET NO. E1-00

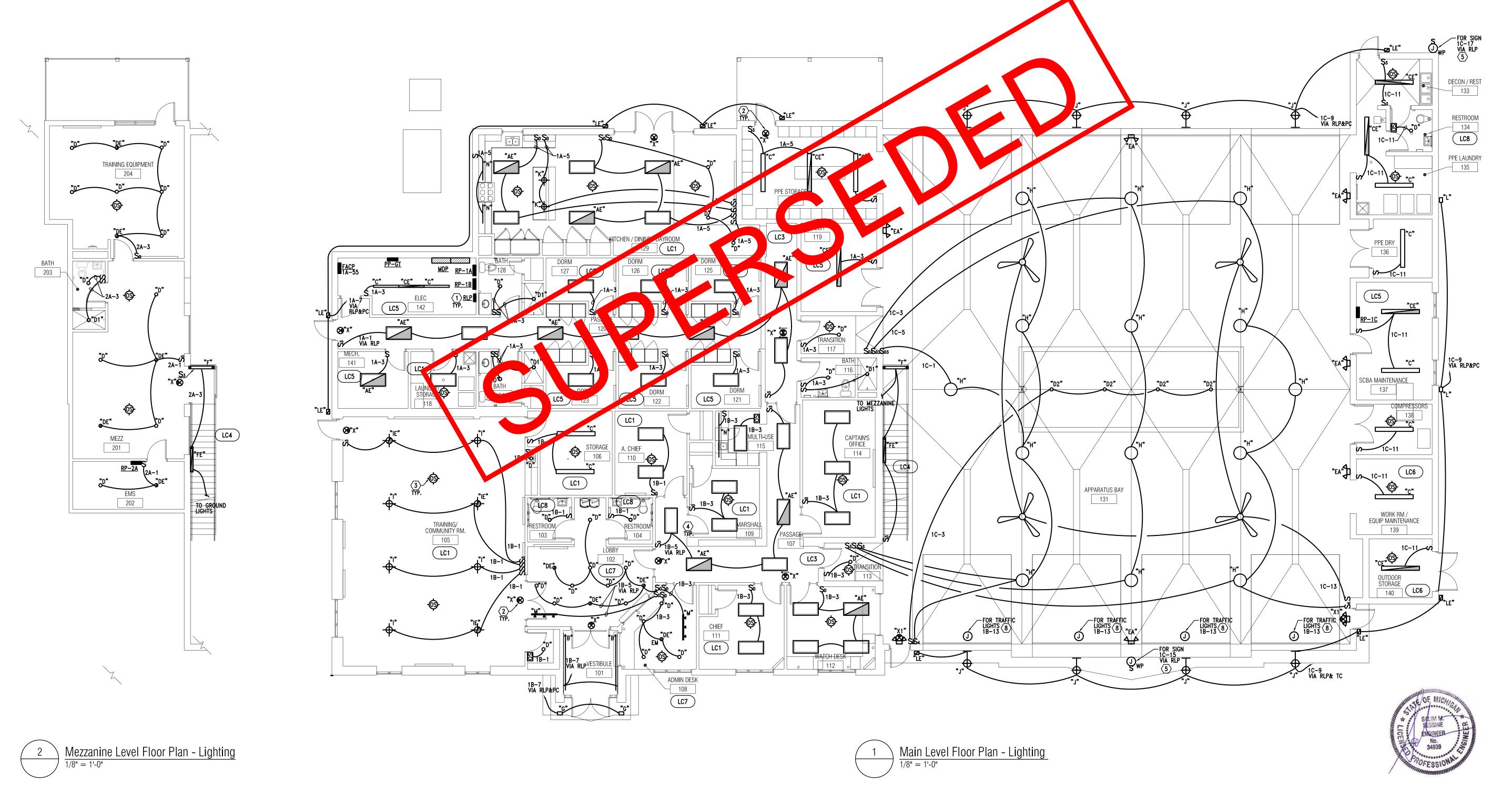


KEYED LIGHTING NOTES:

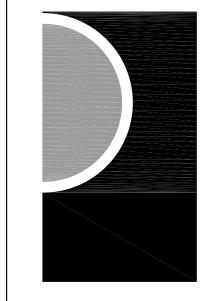
- PROVIDE RELAY PANELS OVERRIDE SWITCHES. LOCATIONS SHALL BE COORDINATED WITH ARCHITECT/OWNER.
- all exit lights, built-in emergency battery units and fixtures with built-in emergency battery back-up shall be wired to room or area normal lighting circuit ahead of local and automatic lighting control.
- PROVIDE OCCUPANCY SENSORS AS REQUIRED, DEVICES INDICATED ARE FOR REFERENCE ONLY, REFER TO GENERAL NOTE-D AND SPECIFICATIONS.
- VIA RLP MEANS THAT LIGHTING CIRCUIT IS CONTROLLED VIA RELAY PANEL, REFER TO GENERAL LIGHTING NOTE-E ABOVE.
- PROVIDE WP J-BOX WITH SWITCH FOR OUTDOOR SIGNS, EXACT LOCATIONS, QUANTITIES AND REQUIREMENTS TO BE VERIFIED WITH OWNER AND SIGN MANUFACTURER.
- PROVIDE LIGHTING CONTROL STATIONS TO CONTROL LIGHTING IN COMMON AREAS. AS INDICATED. EXACT LOCATION OF LIGHTING CONTROL STATIONS TO BE COORDINATED WITH INTERIOR DESIGNER & ARCHITECT/OWNER PRIOR TO ROUGH IN.
- 7 PROVIDE LINE/LOW VOLTAGE SWITCHES AND OVERRIDES FOR ROOMS/AREAS WIRED VIA THE LIGHTING CONTROL RELAY PANEL.
- PROVIDE TRAFFIC LIGHTS AND CONTROLS, COORDINATE WITH ARCHITECT/OWNER FOR EXACT REQUIREMENTS. EXACT LOCATIONS FOR TRAFFICE LIGHTS AND ASSOCIATED CONTROLS TO BE AS DIRECTED BY ARCHITECT/OWNER, CONTROLS NOT INDICATED ON PLAN, INFORMATION INDICATED IS FOR REFERENCE ONLY.

GENERAL LIGHTING NOTES:

- A. ALL LIGHTING FIXTURES INDICATED ON THESE PLANS ARE TYPE "A" UNLESS OTHERWISE NOTED.
- B. REFER TO SHEET E.001 FOR ELECTRICAL LEGEND AND SHEET E.003 FOR LIGHTING FIXTURE SCHEDULE AND SHEET E.003 FOR LIGHTING CONTROL MATRIX.
- C. REFER TO SPECIFICATIONS FOR ADDITIONAL LAMP AND BALLAST REQUIREMENTS.
- D. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS, ELEVATIONS AND SECTIONS FOR EXACT LOCATION OF ALL CEILING, PENDANT & WALL MOUNTED LIGHTING FIXTURES.
- E. ALL EXIT LIGHTS AND EMERGENCY LIGHTS (EM) SHALL BE WIRED TO ROOM OR AREA NORM LIGHTING CIRCUIT AHEAD OF LOCAL CONTROLS, SEE KET NOTE THIS SHEET.
- F. IN ADDITION TO THE LOCAL SWITCHES SHOWN, PROVIDE A COMPLETE OCCUPANCY SENSOR AND RELAY PANEL BASED AUTOMATIC LIGHTING CONTROL SYSTEM. SYSTEM SHALL BE AS DESCRIBED IN SPECIFICATION SECTION 260500. DEVICES INDICATED ON PLAN ARE FOR REFERENCE ONLY. SYSTEM SHALL BE LAYED OUT ON A PERFORMANCE BASIS, TYPICAL FOR ALL ROOMS/AREAS AS SPECIFIED.
- G. ALL WIRING SHALL BE SIZED PROPERLY FOR FULL COMPLIANCE WITH THE NEC RQUIREMENTS FOR AMPACITY AND MAXIMUM VOLTAGE DROP LIMITATIONS.
- H. COORDINATE LOCATION OF ALL SWITCHES WITH DOOR LOCATIONS SHOWN ON THE ARCHITECTURAL PLANS.
- I. ALL LIGHTING FIXTURES SHALL BE EQUIPPED WITH LENSES OR SHIELDS FOR PROTECTION OF THE LAMPS OR WITH LAMPS THAT WILL NOT SHATTER.
- J. PROPOSED EQUAL LIGHTING FIXTURES TO BE SUBMITTED FOR ENGINEER & ARCHITECT/OWNERS REVIEW AND APPROVAL PRIOR TO BID.
- K. FOR ALL ROOMS WITH MECHANICAL EQUIPMENT (FURNACE ROOMS, MECHANICAL ROOMS AND CLOSETS ETC.) EXACT LOCATIONS FOR LIGHTING FIXTURES TO BE COORDINATED WITH DUCTWORK AND PIPING.
- L. REFER TO ENLARGED UNIT PLANS SHEET E.401 FOR UNITS TYPICAL LIGHTING LAYOUTS.
- M. ALL ELECTRICAL DEVICES SHALL BE LISTED FOR THE INTENDED USE.







PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT

F 586.469.3607



KEY PLAN

....

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS

SCHEMATIC DESIGN 01-28-2020
BIDDING-CONSTRUCTION 03-27-2020

NSTRUCTION 05-

NH

CHECKED BY

APPROVED BY

SHEET NAME

FLOOR PLANS -LIGHTING

> SHEET NO. E2-00

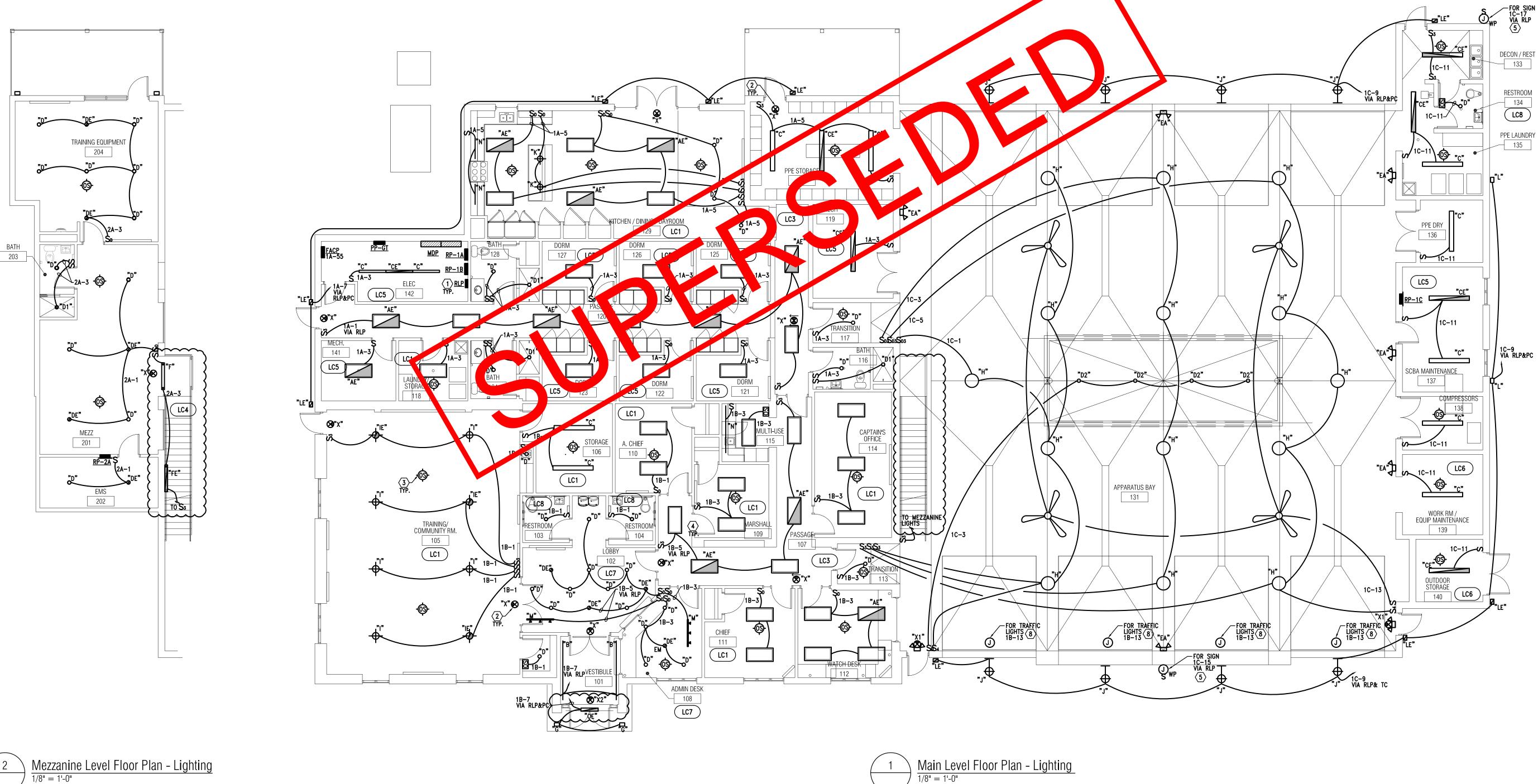
KEYED LIGHTING NOTES:

- 1 PROVIDE RELAY PANELS OVERRIDE SWITCHES. LOCATIONS SHALL BE COORDINATED WITH
- 2 ALL EXIT LIGHTS, BUILT-IN EMERGENCY BATTERY UNITS AND FIXTURES WITH BUILT-IN EMERGENCY BATTERY BACK-UP SHALL BE WIRED TO ROOM OR AREA NORMAL LIGHTING CIRCUIT AHEAD OF LOCAL AND AUTOMATIC LIGHTING CONTROL.
- PROVIDE OCCUPANCY SENSORS AS REQUIRED, DEVICES INDICATED ARE FOR REFERENCE ONLY, REFER TO GENERAL NOTE-D AND SPECIFICATIONS.
- 4 VIA RLP MEANS THAT LIGHTING CIRCUIT IS CONTROLLED VIA RELAY PANEL, REFER TO GENERAL LIGHTING NOTE-E ABOVE.
- PROVIDE WP J-BOX WITH SWITCH FOR OUTDOOR SIGNS, EXACT LOCATIONS, QUANTITIES AND REQUIREMENTS TO BE VERIFIED WITH OWNER AND SIGN MANUFACTURER.
- PROVIDE LIGHTING CONTROL STATIONS TO CONTROL LIGHTING IN COMMON AREAS. AS INDICATED. EXACT LOCATION OF LIGHTING CONTROL STATIONS TO BE COORDINATED WITH INTERIOR DESIGNER & ARCHITECT/OWNER PRIOR TO ROUGH IN.
- PROVIDE LINE/LOW VOLTAGE SWITCHES AND OVERRIDES FOR ROOMS/AREAS WIRED VIA THE LIGHTING CONTROL RELAY PANEL.
- PROVIDE TRAFFIC LIGHTS AND CONTROLS, COORDINATE WITH ARCHITECT/OWNER FOR EXACT REQUIREMENTS. EXACT LOCATIONS FOR TRAFFICE LIGHTS AND ASSOCIATED CONTROLS TO BE AS DIRECTED BY ARCHITECT/OWNER, CONTROLS NOT INDICATED ON PLAN, INFORMATION INDICATED IS FOR REFERENCE ONLY.

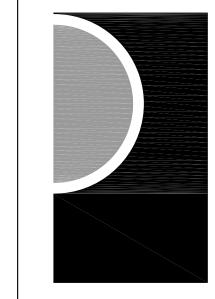
GENERAL LIGHTING NOTES:

- A. ALL LIGHTING FIXTURES INDICATED ON THESE PLANS ARE TYPE "A" UNLESS OTHERWISE NOTED.
- B. REFER TO SHEET E.001 FOR ELECTRICAL LEGEND AND SHEET E.003 FOR LIGHTING FIXTURE SCHEDULE AND SHEET E.003 FOR LIGHTING CONTROL MATRIX.
- C. REFER TO SPECIFICATIONS FOR ADDITIONAL LAMP AND BALLAST REQUIREMENTS.

- IN ADDITION TO THE LOCAL SWITCHES SHOWN, PROVIDE A COMPLETE OCCUPANCY SENSOR AND RELAY PANEL BASED AUTOMATIC LIGHTING CONTROL SYSTEM. SYSTEM SHALL BE AS DESCRIBED IN SPECIFICATION SECTION 260500. DEVICES INDICATED ON PLAN ARE FOR REFERENCE ONLY. SYSTEM SHALL BE LAYED OUT ON A PERFORMANCE BASIS, TYPICAL FOR ALL ROOMS/AREAS AS SPECIFIED.
- G. ALL WIRING SHALL BE SIZED PROPERLY FOR FULL COMPLIANCE WITH THE NEC RQUIREMENTS FOR AMPACITY AND MAXIMUM VOLTAGE DROP LIMITATIONS.
- H. COORDINATE LOCATION OF ALL SWITCHES WITH DOOR LOCATIONS SHOWN ON THE ARCHITECTURAL PLANS.
- ALL LIGHTING FIXTURES SHALL BE EQUIPPED WITH LENSES OR SHIELDS FOR PROTECTION OF THE LAMPS OR WITH LAMPS THAT WILL NOT SHATTER.
- PROPOSED EQUAL LIGHTING FIXTURES TO BE SUBMITTED FOR ENGINEER & ARCHITECT/OWNERS REVIEW AND APPROVAL PRIOR TO BID.
- K. FOR ALL ROOMS WITH MECHANICAL EQUIPMENT (FURNACE ROOMS, MECHANICAL ROOMS AND CLOSETS ETC.) EXACT LOCATIONS FOR LIGHTING FIXTURES TO BE COORDINATED WITH DUCTWORK AND PIPING.
- L. REFER TO ENLARGED UNIT PLANS SHEET E.401 FOR UNITS TYPICAL LIGHTING LAYOUTS.
- M. ALL ELECTRICAL DEVICES SHALL BE LISTED FOR THE INTENDED USE.



PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

P 586.469.3600 F 586.469.3607

herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



KEY PLAN

Green Oak Charter Township

PROJECT NAME

Green Oak Fire Station No. 81

9384 Whitmore Lake Road Brighton, MI 48116

PROJECT NO.

19-129

ISSUES / REVISIONS

CHECKED BY

APPROVED BY

SHEET NAME

FLOOR PLANS -LIGHTING

SHEET NO. **E2-00**

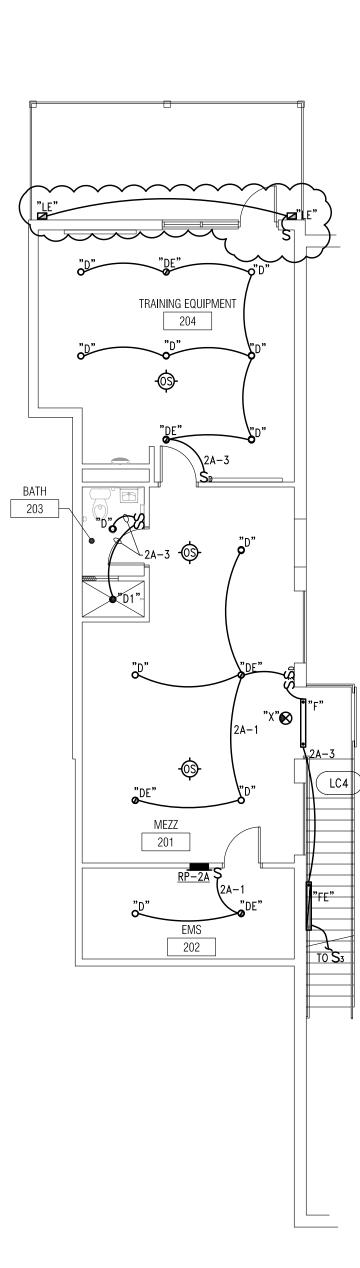
KEYED LIGHTING NOTES:

- 1 PROVIDE RELAY PANELS OVERRIDE SWITCHES. LOCATIONS SHALL BE COORDINATED WITH
- ALL EXIT LIGHTS, BUILT-IN EMERGENCY BATTERY UNITS AND FIXTURES WITH BUILT-IN EMERGENCY BATTERY BACK-UP SHALL BE WIRED TO ROOM OR AREA NORMAL LIGHTING CIRCUIT AHEAD OF LOCAL AND AUTOMATIC LIGHTING CONTROL.
- PROVIDE OCCUPANCY SENSORS AS REQUIRED, DEVICES INDICATED ARE FOR REFERENCE ONLY, REFER TO GENERAL NOTE-D AND SPECIFICATIONS.
- 4 VIA RLP MEANS THAT LIGHTING CIRCUIT IS CONTROLLED VIA RELAY PANEL, REFER TO GENERAL LIGHTING NOTE-E ABOVE.
- PROVIDE WP J-BOX WITH SWITCH FOR OUTDOOR SIGNS, EXACT LOCATIONS, QUANTITIES AND REQUIREMENTS TO BE VERIFIED WITH OWNER AND SIGN MANUFACTURER.
- PROVIDE LIGHTING CONTROL STATIONS TO CONTROL LIGHTING IN COMMON AREAS. AS INDICATED. EXACT LOCATION OF LIGHTING CONTROL STATIONS TO BE COORDINATED WITH INTERIOR DESIGNER & ARCHITECT/OWNER PRIOR TO ROUGH IN.
- 7 PROVIDE LINE/LOW VOLTAGE SWITCHES AND OVERRIDES FOR ROOMS/AREAS WIRED VIA THE LIGHTING CONTROL RELAY PANEL.
- PROVIDE TRAFFIC LIGHTS AND CONTROLS, COORDINATE WITH ARCHITECT/OWNER FOR EXACT REQUIREMENTS. EXACT LOCATIONS FOR TRAFFICE LIGHTS AND ASSOCIATED CONTROLS TO BE AS
- DIRECTED BY ARCHITECT/OWNER, CONTROLS NOT INDICATED ON PLAN, INFORMATION INDICATED IS FOR REFERENCE ONLY.

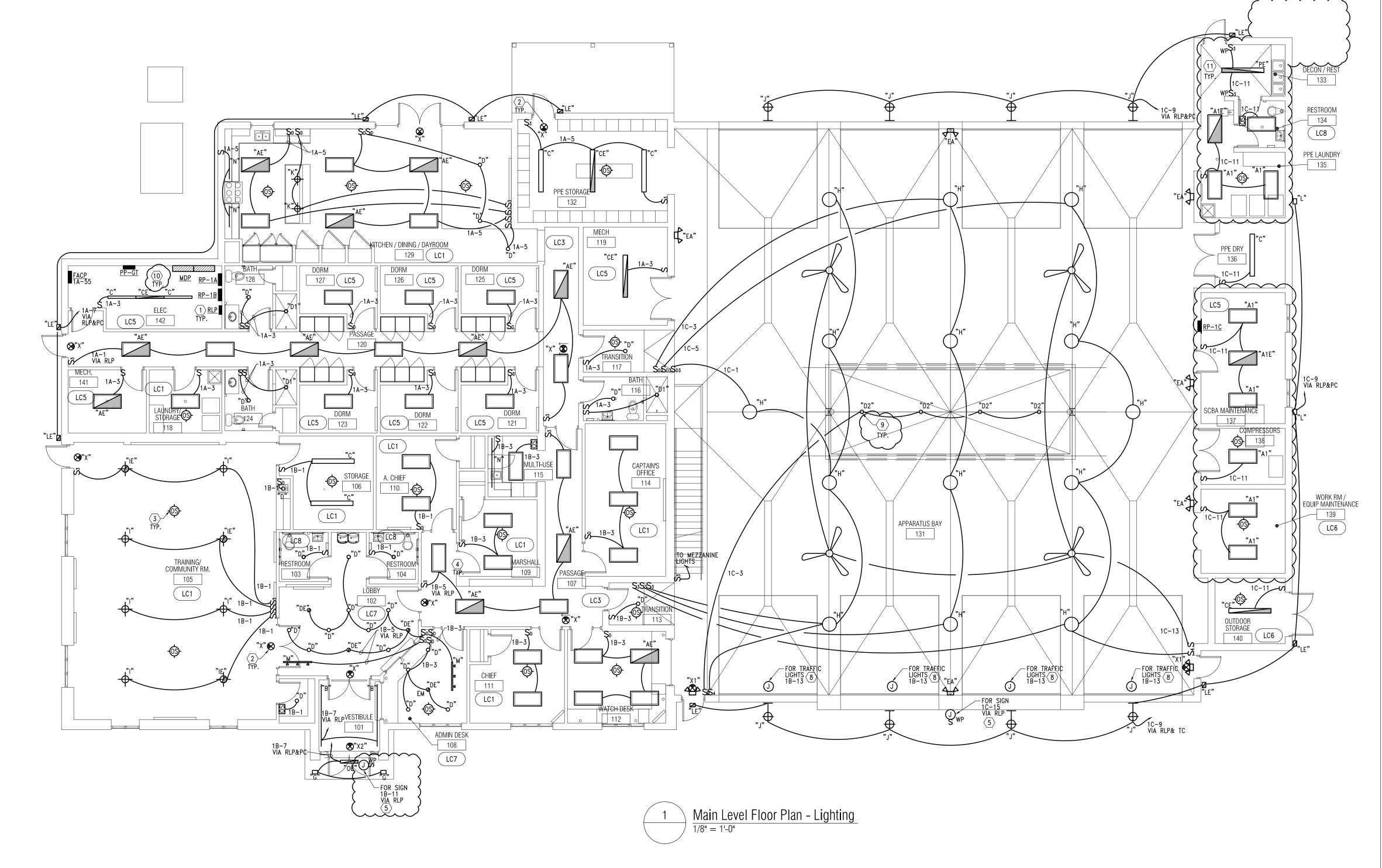
 9 LIGHT FIXTURE "D2" LOCATED IN APPARATUS BAY MUST PROVIDE FIELD BOX AROUND FIXTURE HOUSING TO KEEP INSULATION 3"-6" AWAY FROM HOUSING.
- EXACT LOCATIONS OF LIGHTING FIXTURES IN MECHANICAL ROOMS TO BE COORDINATED WITH FINAL EQUIPMENT LAYOUT TO AVOID INTERFERENCES WITH DUCTS, PIPES AND EQUIPMENT, COORDINATE WITH MECHANICAL PRIOR TO INSTALLATIONS.
- ALL INSTALLATION IN THE DECON/SHOWER ROOM TO BE NEMA 3R WATER RESISTANT WET LOCATION RATED.

GENERAL LIGHTING NOTES:

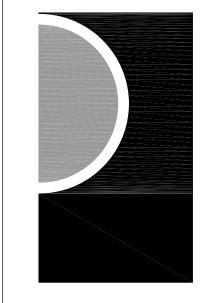
- A. ALL LIGHTING FIXTURES INDICATED ON THESE PLANS ARE TYPE "A" UNLESS OTHERWISE NOTED.
- B. REFER TO SHEET E.001 FOR ELECTRICAL LEGEND AND SHEET E.003 FOR LIGHTING FIXTURE SCHEDULE AND SHEET E.003 FOR LIGHTING CONTROL MATRIX.
- C. REFER TO SPECIFICATIONS FOR ADDITIONAL LAMP AND BALLAST REQUIREMENTS.
- D. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS, ELEVATIONS AND SECTIONS FOR EXACT LOCATION OF ALL CEILING, PENDANT & WALL MOUNTED LIGHTING FIXTURES.
- E. ALL EXIT LIGHTS AND EMERGENCY LIGHTS (EM) SHALL BE WIRED TO ROOM OR AREA NORMAL LIGHTING CIRCUIT AHEAD OF LOCAL CONTROLS, SEE KET NOTE THIS SHEET.
- F. IN ADDITION TO THE LOCAL SWITCHES SHOWN, PROVIDE A COMPLETE OCCUPANCY SENSOR AND RELAY PANEL BASED AUTOMATIC LIGHTING CONTROL SYSTEM. SYSTEM SHALL BE AS DESCRIBED IN SPECIFICATION SECTION 260500. DEVICES INDICATED ON PLAN ARE FOR REFERENCE ONLY. SYSTEM SHALL BE LAYED OUT ON A PERFORMANCE BASIS, TYPICAL FOR ALL ROOMS/AREAS AS SPECIFIED.
- G. ALL WIRING SHALL BE SIZED PROPERLY FOR FULL COMPLIANCE WITH THE NEC RQUIREMENTS FOR AMPACITY AND MAXIMUM VOLTAGE DROP LIMITATIONS.
- H. COORDINATE LOCATION OF ALL SWITCHES WITH DOOR LOCATIONS SHOWN ON THE ARCHITECTURAL PLANS.
- I. ALL LIGHTING FIXTURES SHALL BE EQUIPPED WITH LENSES OR SHIELDS FOR PROTECTION OF THE LAMPS OR WITH LAMPS THAT WILL NOT SHATTER.
- J. PROPOSED EQUAL LIGHTING FIXTURES TO BE SUBMITTED FOR ENGINEER & ARCHITECT/OWNERS REVIEW AND APPROVAL PRIOR TO BID.
- K. FOR ALL ROOMS WITH MECHANICAL EQUIPMENT (FURNACE ROOMS, MECHANICAL ROOMS AND CLOSETS ETC.) EXACT LOCATIONS FOR LIGHTING FIXTURES TO BE COORDINATED WITH DUCTWORK AND PIPING.
- DEFEN TO ENLARCED LIMIT DIAMS SHEET F 401 FOR LIMITS TYPICAL LICHTING LAVOUTS
- L. REFER TO ENLARGED UNIT PLANS SHEET E.401 FOR UNITS TYPICAL LIGHTING LAYOUTS.M. ALL ELECTRICAL DEVICES SHALL BE LISTED FOR THE INTENDED USE.



Mezzanine Level Floor Plan - Lighting



PARTNERS



PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

P 586.469.3600 F 586.469.3607

CONSULTANT



KEY PLAN

OWNER

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A
ISSUES / REVISIONS

CD #4 09-01-2020 R-01 09-18-2020

DRAWN BY

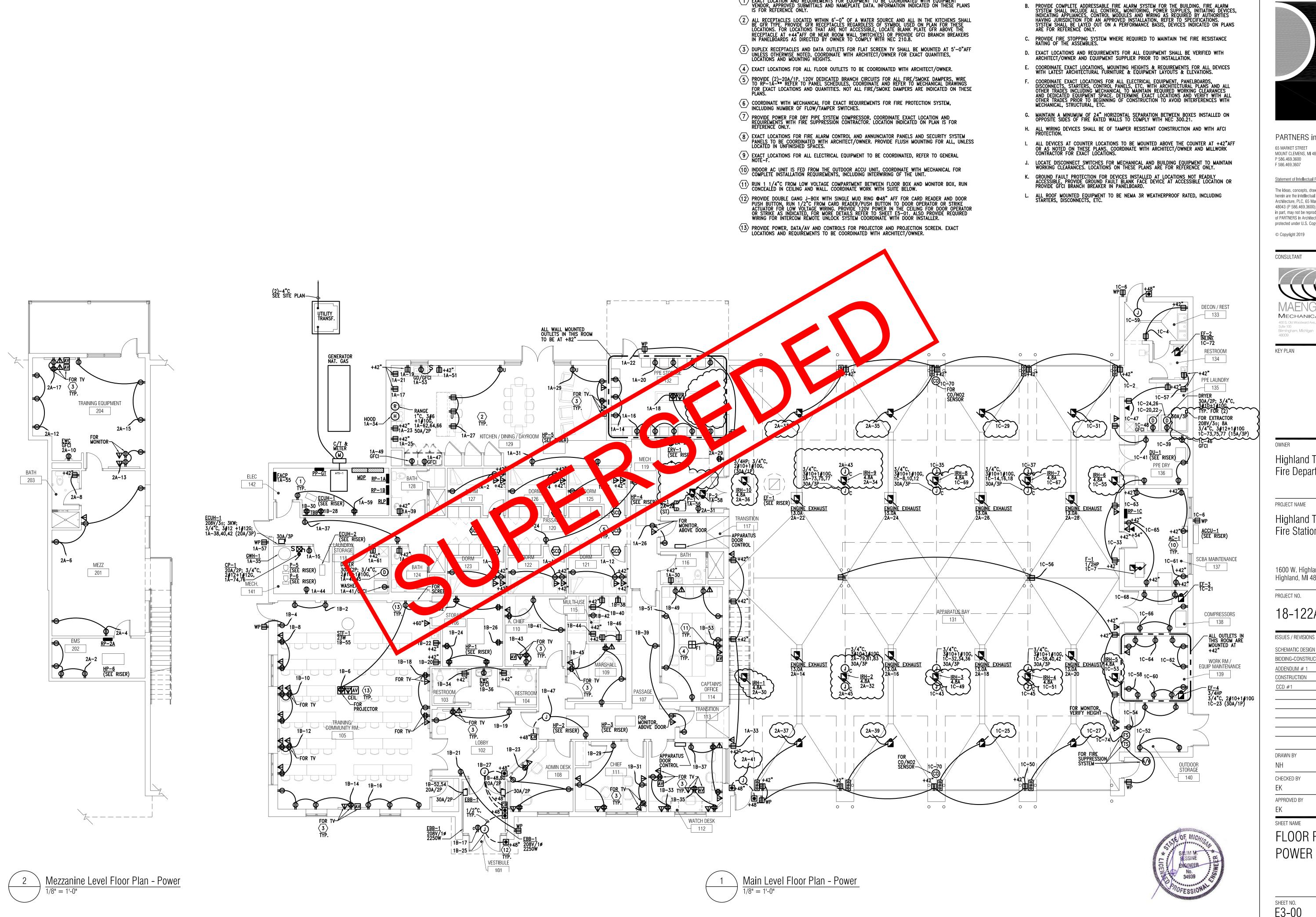
CHECKED BY

APPROVED BY

SHEET NAME

FLOOR PLANS -LIGHTING

SHEET NO. **E2-00**

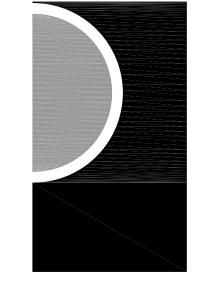


KEYED POWER NOTES:

PARTNERS

GENERAL POWER NOTES:

A. REFER TO SHEET E.001 FOR ELECTRICAL LEGEND.



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

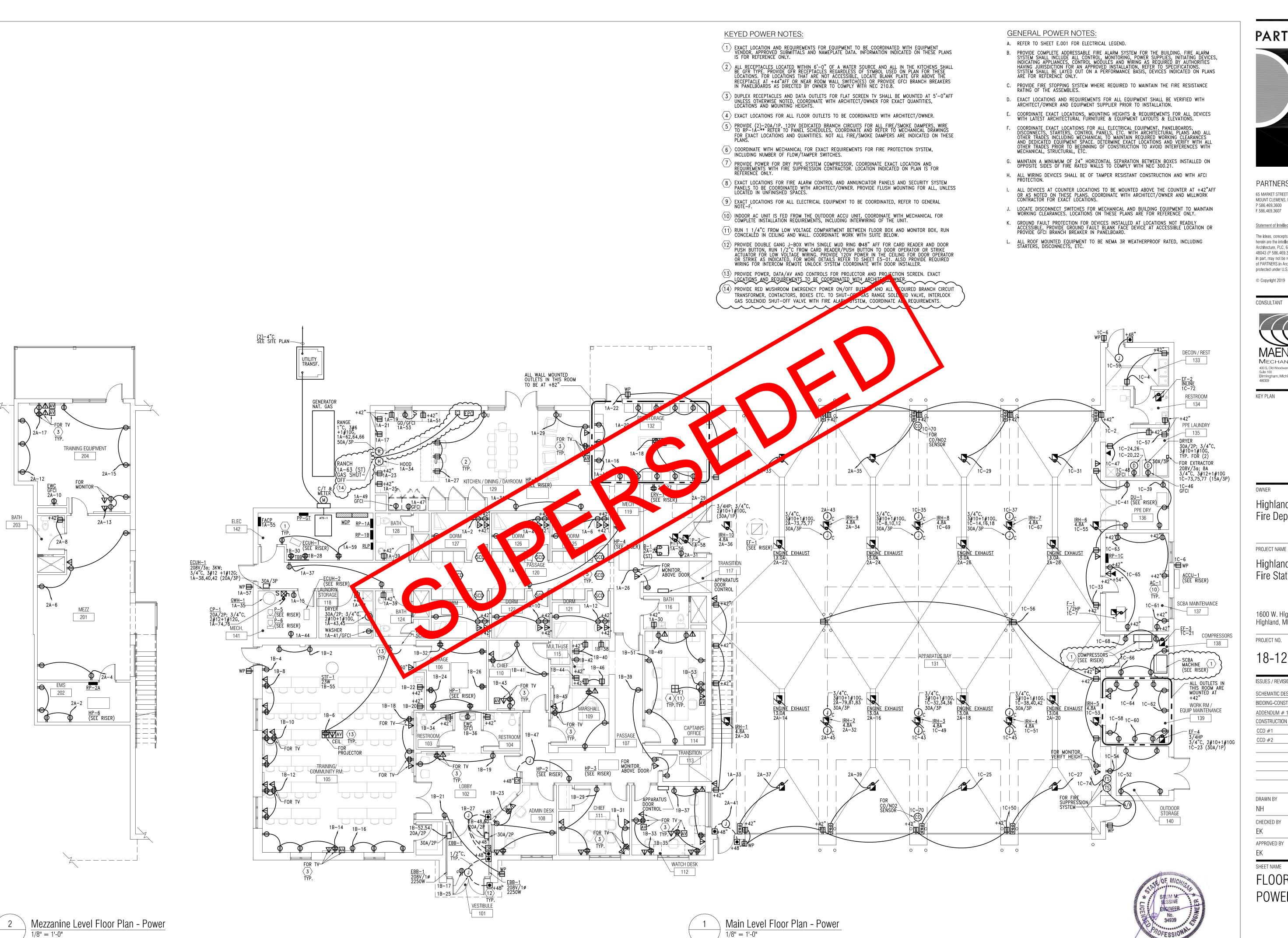
18-122A

| ISSUES / REVISIONS | |
|----------------------|------------|
| SCHEMATIC DESIGN | 01-28-2020 |
| BIDDING-CONSTRUCTION | 03-27-2020 |
| ADDENDUM # 1 | 04-20-2020 |
| CONSTRUCTION | 05-04-2020 |
| CCD #1 | 06-03-2020 |

CHECKED BY

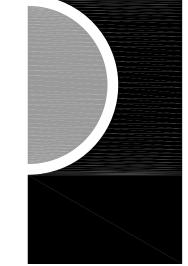
FLOOR PLANS -

E3-00



1/8" = 1'-0"

PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

CONSULTANT



Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

18-122A

| ES / REVISIONS | |
|-----------------|---|
| MATIC DESIGN | C |
| NG-CONSTRUCTION | C |
| ENDUM # 1 | C |

| SCHEMATIC DESIGN | 01-28-2020 |
|----------------------|------------|
| BIDDING-CONSTRUCTION | 03-27-2020 |
| ADDENDUM # 1 | 04-20-2020 |
| CONSTRUCTION | 05-04-2020 |
| CCD #1 | 06-03-2020 |
| CCD #2 | 06-16-2020 |
| | |
| | |

DRAWN BY

FLOOR PLANS -POWER

E3-00

KEYED POWER NOTES:

- EXACT LOCATION AND REQUIREMENTS FOR EQUIPMENT TO BE COORDINATED WITH EQUIPMENT VENDOR, APPROVED SUBMITTALS AND NAMEPLATE DATA. INFORMATION INDICATED ON THESE PLAN
- ALL RECEPTACLES LOCATED WITHIN 6'-0" OF A WATER SOURCE AND ALL IN THE KITCHENS SHALL BE GFR TYPE. PROVIDE GFR RECEPTACLES REGARDLESS OF SYMBOL USED ON PLAN FOR THESE LOCATIONS. FOR LOCATIONS THAT ARE NOT ACCESSIBLE, LOCATE BLANK PLATE GFR ABOVE THE RECEPTACLE AT +44"AFF OR NEAR ROOM WALL SWITCH(ES) OR PROVIDE GFCI BRANCH BREAKERS IN PANELBOARDS AS DIRECTED BY OWNER TO COMPLY WITH NEC 210.8.
- DUPLEX RECEPTACLES AND DATA OUTLETS FOR FLAT SCREEN TV SHALL BE MOUNTED AT 5'-0"AFF UNLESS OTHERWISE NOTED, COORDINATE WITH ARCHITECT/OWNER FOR EXACT QUANTITIES, LOCATIONS AND MOUNTING HEIGHTS.
- 4 EXACT LOCATIONS FOR ALL FLOOR OUTLETS TO BE COORDINATED WITH ARCHITECT/OWNER.

 5 PROVIDE (2)-20A/1P, 120V DEDICATED BRANCH CIRCUITS FOR ALL FIRE/SMOKE DAMPERS, WIRE TO RP-1A-** REFER TO PANEL SCHEDULES, COORDINATE AND REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS AND QUANTITIES. NOT ALL FIRE/SMOKE DAMPERS ARE INDICATED ON THESE PLANS.
- 6 COORDINATE WITH MECHANICAL FOR EXACT REQUIREMENTS FOR FIRE PROTECTION SYSTEM, INCLUDING NUMBER OF FLOW/TAMPER SWITCHES.
- PROVIDE POWER FOR DRY PIPE SYSTEM COMPRESSOR, COORDINATE EXACT LOCATION AND REQUIREMENTS WITH FIRE SUPPRESSION CONTRACTOR. LOCATION INDICATED ON PLAN IS FOR REFERENCE ONLY.
- 8 EXACT LOCATIONS FOR FIRE ALARM CONTROL AND ANNUNCIATOR PANELS AND SECURITY SYSTEM PANELS TO BE COORDINATED WITH ARCHITECT/OWNER. PROVIDE FLUSH MOUNTING FOR ALL, UNLESS LOCATED IN UNFINISHED SPACES.
- 9 EXACT LOCATIONS FOR ALL ELECTRICAL EQUIPMENT TO BE COORDINATED, REFER TO GENERAL NOTE-F.
- 10 INDOOR AC UNIT IS FED FROM THE OUTDOOR ACCU UNIT, COORDINATE WITH MECHANICAL FOR COMPLETE INSTALLATION REQUIREMENTS, INCLUDING INTERWIRING OF THE UNIT.
- RUN 1 1/4"C FROM LOW VOLTAGE COMPARTMENT BETWEEN FLOOR BOX AND MONITOR BOX, RUN CONCEALED IN CEILING AND WALL, COORDINATE WORK WITH SUITE BELOW.
- FOR ALL CARD READERS PROVIDE DOUBLE GANG J-BOX WITH SINGLE MUD RING @48" AFF FOR CARD READER, RUN 1/2"C FROM CARD READER OR STRIKE ACTUATOR FOR LOW VOLTAGE WIRING. PROVIDE 120V POWER IN THE CEILING FOR STRIKE AS INDICATED, FOR MORE DETAILS REFER TO SHEET E5-01. ALSO PROVIDE REQUIRED WIRING FOR INTERCOM REMOTE UNLOCK SYSTEM COORDINATE WITH DOOR INSTALLER. REFER TO ARCHITECTURAL PLANS AND DOOR HARDWARE SCHEDULES FOR EXACT LOCATIONS AND REQUIREMENTS. COORDINATE ALL WORK WITH ARCHITECT AND SECURILTY/ACCESS CONTROL SYSTEM PROVIDER.
- PROVIDE POWER, DATA/AV AND CONTROLS FOR PROJECTOR AND PROJECTION SCREEN. EXACT LOCATIONS AND REQUIREMENTS TO BE COORDINATED WITH ARCHITECT/OWNER.

Main Level Floor Plan - Power

PROVIDE RED MUSHROOM EMERGENCY POWER ON/OFF BUTTON AND ALL REQUIRED BRANCH CIRCUIT TRANSFORMER, CONTACTORS, BOXES ETC. TO SHUT-OFF GAS RANGE SOLENOID VALVE, INTERLOCK GAS SOLENOID SHUT-OFF VALVE WITH FIRE ALARM SYSTEM, COORDINATE ALL REQUIREMENTS.

GENERAL POWER NOTES:

- A. REFER TO SHEET E.001 FOR ELECTRICAL LEGEND.

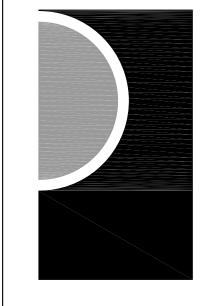
 B. PROVIDE COMPLETE ADDRESSABLE FIRE ALARM SYSTEM FOR THE BUILDING. FIRE ALARM SYSTEM SHALL INCLUDE ALL CONTROL, MONITORING, POWER SUPPLIES, INITIATING DEVICES, INDICATING APPLIANCES, CONTROL MODULES AND WIRING AS REQUIRED BY AUTHORITIES HAVING JURISDICTION FOR AN APPROVED INSTALLATION, REFER TO SPECIFICATIONS. SYSTEM SHALL BE LAYED OUT ON A PERFORMANCE BASIS, DEVICES INDICATED ON PLANS ARE FOR REFERENCE ONLY.
- C. PROVIDE FIRE STOPPING SYSTEM WHERE REQUIRED TO MAINTAIN THE FIRE RESISTANCE RATING OF THE ASSEMBLIES.
- D. EXACT LOCATIONS AND REQUIREMENTS FOR ALL EQUIPMENT SHALL BE VERIFIED WITH ARCHITECT/OWNER AND EQUIPMENT SUPPLIER PRIOR TO INSTALLATION.
- E. COORDINATE EXACT LOCATIONS, MOUNTING HEIGHTS & REQUIREMENTS FOR ALL DEVICES WITH LATEST ARCHITECTURAL FURNITURE & EQUIPMENT LAYOUTS & ELEVATIONS.
- F. COORDINATE EXACT LOCATIONS FOR ALL ELECTRICAL EQUIPMENT, PANELBOARDS, DISCONNECTS, STARTERS, CONTROL PANELS, ETC. WITH ARCHITECTURAL PLANS AND ALL OTHER TRADES INCLUDING MECHANICAL TO MAINTAIN REQUIRED WORKING CLEARANCES AND DEDICATED EQUIPMENT SPACE. DETERMINE EXACT LOCATIONS AND VERIFY WITH ALL OTHER TRADES PRIOR TO BEGINNING OF CONSTRUCTION TO AVOID INTERFERENCES WITH MECHANICAL, STRUCTURAL, ETC.
- G. MAINTAIN A MINUMUM OF 24" HORIZONTAL SEPARATION BETWEEN BOXES INSTALLED ON OPPOSITE SIDES OF FIRE RATED WALLS TO COMPLY WITH NEC 300.21.

 H. ALL WIRING DEVICES SHALL BE OF TAMPER RESISTANT CONSTRUCTION AND WITH AFCI PROTECTION.
- PROTECTION.

 I. ALL DEVICES AT COUNTER LOCATIONS TO BE MOUNTED ABOVE THE COUNTER AT +42"AFF
- ALL DEVICES AT COUNTER LOCATIONS TO BE MOUNTED ABOVE THE COUNTER AT +42"AFF OR AS NOTED ON THESE PLANS. COORDINATE WITH ARCHITECT/OWNER AND MILLWORK CONTRACTOR FOR EXACT LOCATIONS.
- J. LOCATE DISCONNECT SWITCHES FOR MECHANICAL AND BUILDING EQUIPMENT TO MAINTAIN WORKING CLEARANCES. LOCATIONS ON THESE PLANS ARE FOR REFERENCE ONLY.

 K. GROUND FAULT PROTECTION FOR DEVICES INSTALLED AT LOCATIONS NOT READILY ACCESSIBLE, PROVIDE GROUND FAULT BLANK FACE DEVICE AT ACCESSIBLE LOCATION OR PROVIDE GFCI BRANCH BREAKER IN PANELBOARD.
- L. ALL ROOF MOUNTED EQUIPMENT TO BE NEMA 3R WEATHERPROOF RATED, INCLUDING STARTERS, DISCONNECTS, ETC.

PARTNERS



PARTNERS in Architecture, PLC 65 MARKET STREET MOUNT CLEMENS, MI 48043 P 586.469.3600

Statement of Intellectual Property

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONCLUTANT

F 586.469.3607



KEY PLAN

Green Oak Charter Township

PROJECT NAME

Green Oak Fire Station No. 81

9384 Whitmore Lake Road Brighton, MI 48116

PROJECT NO.

19-129

ISSUES / REVISIONS

DDENDUM # 1 04-20-2020

CD #1 06-03-2020

CD #2 06-16-2020

RAWN BY

CHECKED BY

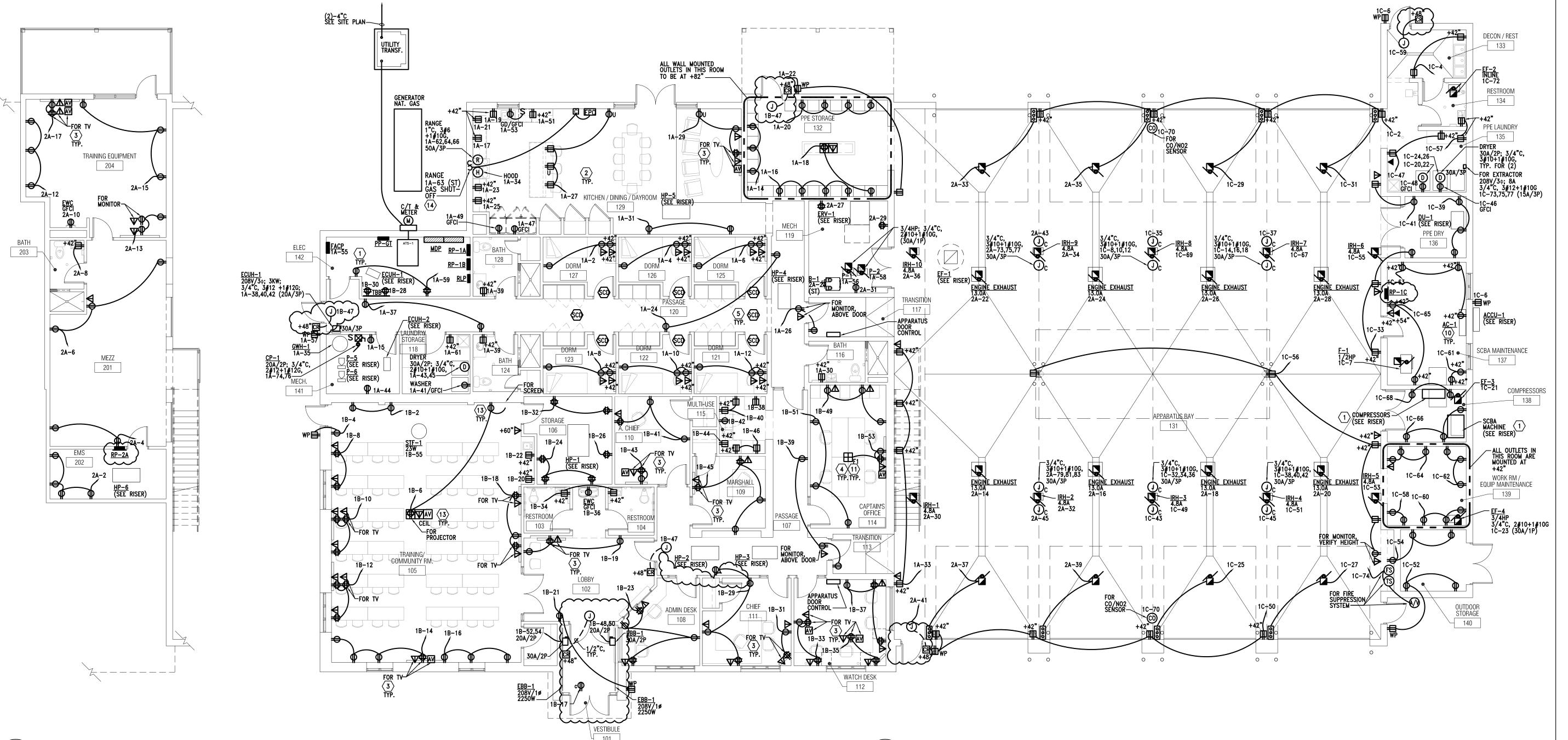
K

APPROVED BY

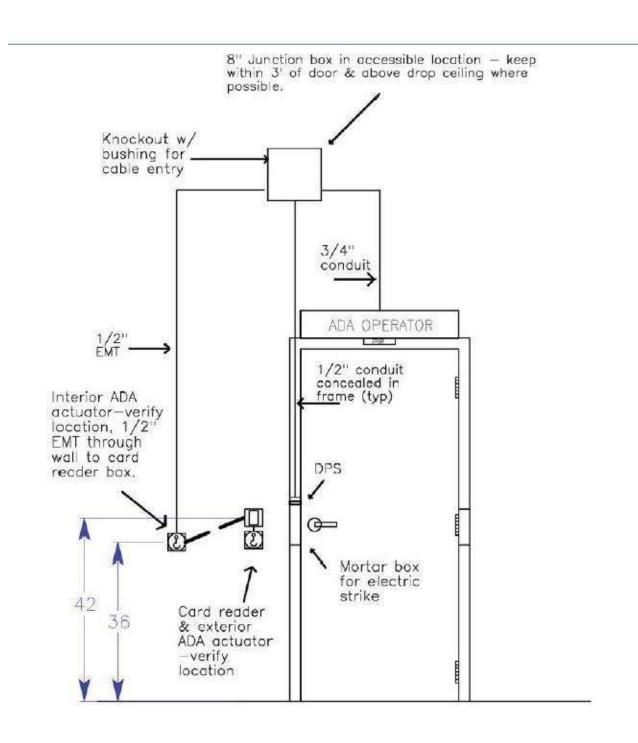
SHEET NAME

FLOOR PLANS -POWER

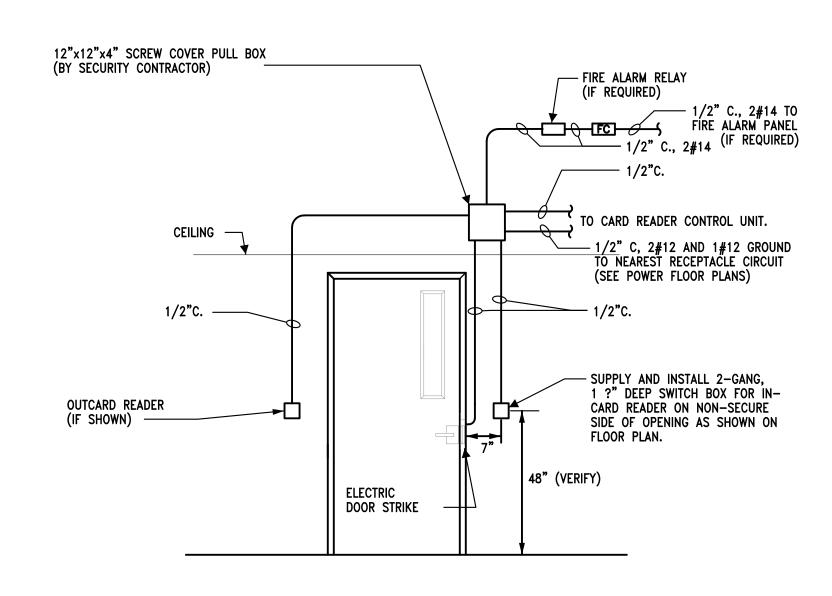
> SHEET NO. **E3-00**



Mezzanine Level Floor Plan - Power



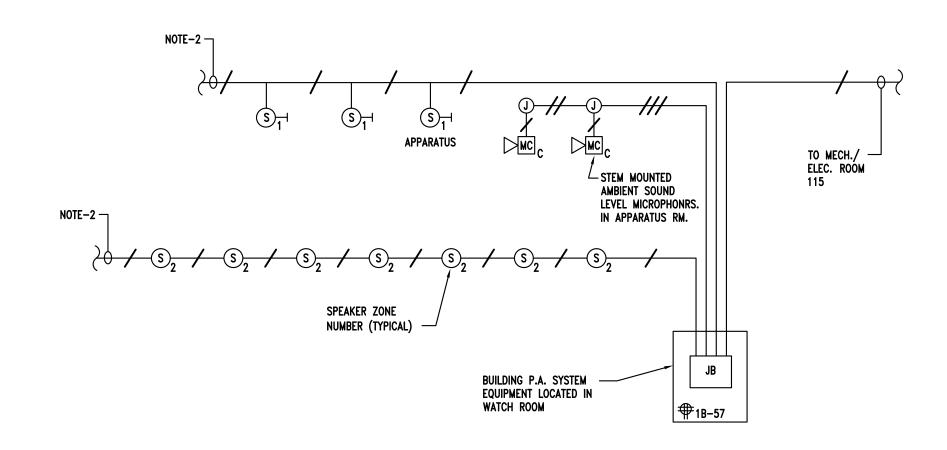
HANDICAP PUSH BUTTON/CARD READER DOOR DETAIL SCALE: NONE



NOTES

1. REFER TO ACCESS CONTROLR CONSULTANT DRAWINGS FOR EXACT REQUIREMENTS, THIS DETAIL IS FOR REFERENCE ONLY.

CARD READER DOOR DETAIL (TYPICAL)
SCALE: NONE

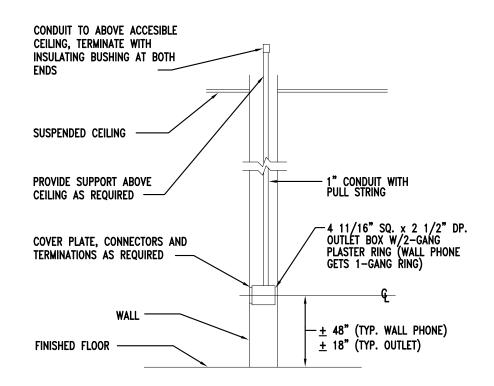


| | SPEAKER ZONE SCHEDULE | | |
|------|---|--|--|
| ZONE | AREA SERVED | | |
| 1 | APPARATUS ROOM AREA AND WALL MOUNTED SPEAKERS | | |
| 2 | CEILING MOUNTED SPEAKERS | | |

NOTES.

- 1. ALL WIRE SHALL BE INSTALLED IN CONDUIT 3/4" MINIMUM.
- 2. COORDINATE WITH OWNER AND SYSTEM MANUFACTURER TO DETERMINE MAXIMUM PERFORMANCE AND COVERAGE, COMPLETE FUNCTIONAL SYSTEM AND DESIGN WITH ALL COMPONENTS SHALL BE INCLUDED IN BASE BID.

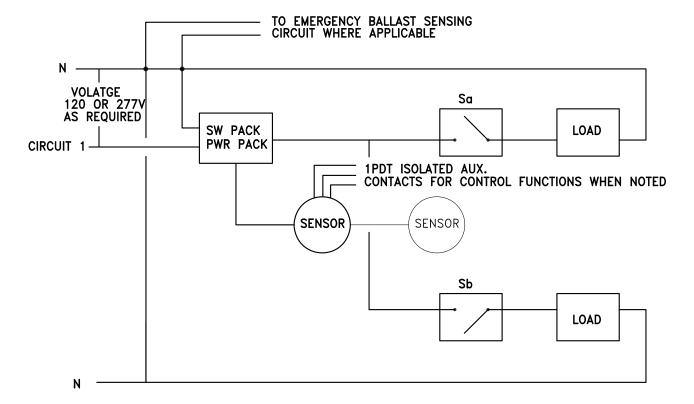
P.A. RISER DIAGRAM



TYPICAL TELECOMMUNICATION OUTLET

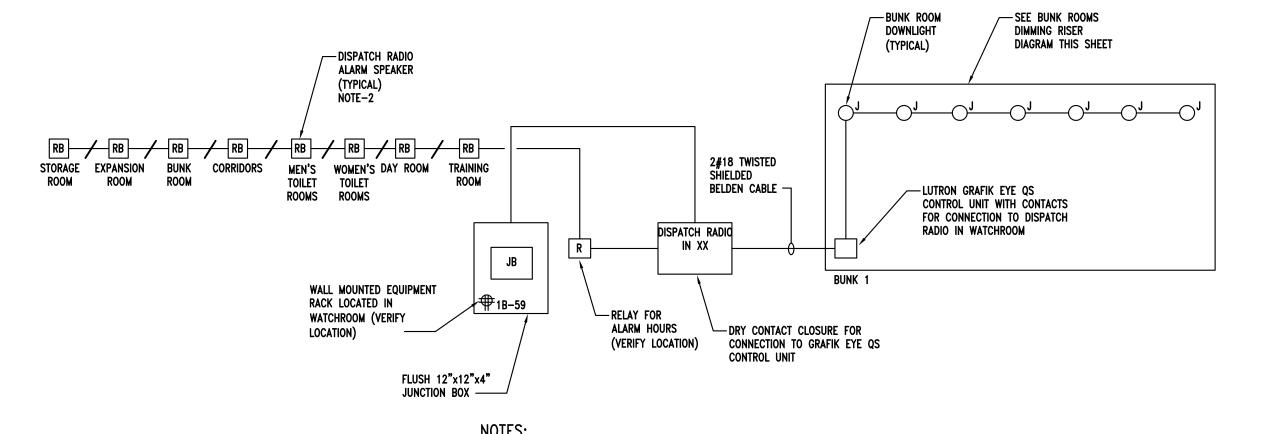
DETAIL

No Scale



TYPICAL FUNCTIONAL LIGHTING CONTROL AS APPLICABLE

NO SCALE refer to manufacturer wiring diagram and modify to meet the design intent Provide switch packs, power packs etc.. as required.



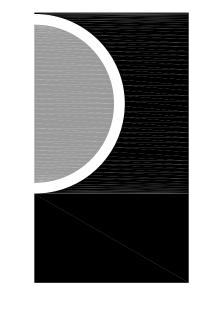
ALL WIRE SHALL BE INSTALLED IN CONDUIT 3/4" MINIMUM.

2. COORDINATE WITH OWNER AND SYSTEM MANUFACTURER TO DETERMINE MAXIMUM PERFORMANCE AND COVERAGE, COMPLETE FUNCTIONAL SYSTEM AND DESIGN WITH ALL COMPONENTS SHALL BE INCLUDED IN BASE BID.

DISPATCH RADIO ALARM RISER DIAGRAM
NO SCALE



PARTNERS



PARTNERS in Architecture, PLC
65 MARKET STREET
MOUNT CLEMENS, MI 48043
P 586.469.3600

Statement of Intellectual Property

F 586.469.3607

The ideas, concepts, drawings and thoughts conveyed herein are the intellectual property of PARTNERS in Architecture, PLC, 65 Market Street, Mount Clemens, MI, 48043 (P 586.469.3600). This set of drawings, in whole or in part, may not be reproduced, without the written consent of PARTNERS in Architecture, PLC. This information is protected under U.S. Copyright Law, all rights reserved.

© Copyright 2019

CONSULTANT



KEY PLAN

OWNE

Highland Township Fire Department

PROJECT NAME

Highland Township Fire Station No. 1

1600 W. Highland Rd. Highland, MI 48357

PROJECT NO.

18-122A

ISSUES / REVISIONS
SCHEMATIC DESIGN

BIDDING-CONSTRUCTION 03-27-2020

CONSTRUCTION 05-04-2020

DRAWN BY

NH

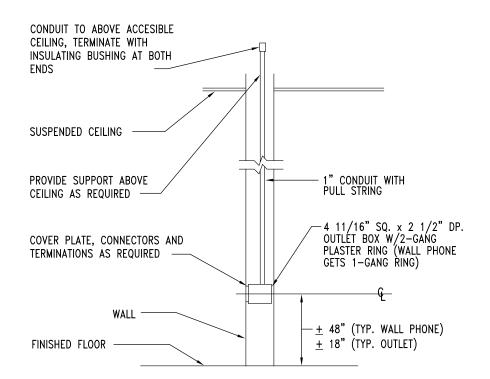
CHECKED BY

APPROVED BY

EK

ELECTRICAL DETAILS

SHEET NO. **E5-00**



TYPICAL TELECOMMUNICATION OUTLET

DETAIL No Scale