

ADDENDUM

Project Name: City of New Baltimore **Addendum No: One (1)**
DPS Building Addition
35389 Cricklewood
New Baltimore MI. 48047

Project Number: 13-107 Issue Date: May 29, 2013

Project Location: New Baltimore, Michigan

To the Contract Documents for the requested City of New Baltimore DPS Building Addition.

This Addendum forms a part of the above described Contract Documents and supersedes, supplements or clarifies parts thereof to the extent defined by the terms set forth in this Addendum.

This addendum consists of (4) typed pages and the following attachments:

- Specifications: 003132 (1 page) plus attachment, 004322 (1 page), 012200 (2 pages), 035416 (3 pages), 051200 (6 pages), 054000 (8 pages), 099113 (6 pages), 099123 (6 pages)
- Drawings: Civil: C-1, C-2
Architectural: Cover Sheet, A0-00, A6-01
Structural: S1-01, S2-00, S2-01
Electrical: E0-01, E3-01

SPECIFICATIONS:

- Item SP1** Specification Index (revised but not reissued)
- A. Division 00 – Geotechnical Data 003132
 - B. Division 00 – Unit Price Form 004322
 - C. Division 1 – Unit Prices 012200
 - D. Division 4 – Unit Masonry index number to read 042000
 - E. Division 9- Delete reference to specification section 099600 high Performance Coatings
 - F. Division 13- Metal Building Systems index number to read 133419.
 - G. Division 32 – ASPHALT PAVING delete from index
- Item SP2** Specification Section 003100 – BID FORM (revised but not re-issued)
- A. Include unit cost supplement with bid form provided in specification section 004322 issued with this addendum.
- Item SP3** Specification Section 003132 – GEOTECHNICAL DATA (issued in its entirety)
- A. Geotechnical report attached.
- Item SP4** Specification Section 004322 – UNIT PRICE FORM (issued in its entirety)

- Item SP5** Specification Section 01100 – SUMMARY 1.3 A.5 (revised but not reissued)
- A. Add 1.3, A, 5: site work as indicated on civil drawings C-1, C-2 and division 32 specification sections.
 - B. Gate operator relocation to include installation of detection loops saw cut into concrete paving provided by separate contractor. Ingress detection loop to operate and enable the radio frequency control. Egress detection loop to automatically open gate.
- Item SP6** Specification Section 012200 – UNIT PRICES (issued in its entirety)
- Item SP7** Specification Section 033000 – CAST-IN-PLACE CONCRETE (revised but not reissued)
- A. 2.7 CONCRETE MIXTURE B: revise to read : Cementitious materials Fly ash, pozzolan, and silica fume may be used to reduce the total amount of Portland cement by no less than 25% percent which would otherwise be used. Do not use in exposed concrete.
 - B. Proportion normal weight concrete for footings, foundations, and below grade walls.
 - 1. Compressive strength (28 days): 3500 psi (24.1MPa)
 - 2. Maximum slump: 3 inches
 - 3. Maximum slump for concrete containing High-Range water reducing admixture: 8 inches after admixture is added to concrete with 2 to 4 inch slump
 - 4. Maximum water cement ratio: 0.58
 - 5. Minimum cementitious material content: 470 lb/cu.yd.
 - C. Proportion normal weight concrete for supported slab and slab on grade.
 - 6. Compressive strength (28 days): 4000 psi (27.2MPa)
 - 7. Maximum slump: 4 inches
 - 8. Maximum water cement ratio: 0.45
 - 9. Minimum cementitious material content: 520 lb/cu.yd.
 - 10. Air content: 6 percent, plus or minus 1.5 percent air content at point of delivery for 1" normal Maximum aggregate size.
- Item SP8** Specification Section 051200 – STRUCTURAL STEEL (issued in its entirety)
- Item SP9** Specification Section 054000 – COLD FORMED METAL FRAMING (issued in its entirety)
- Item SP10** Specification Section 099113 – EXTERIOR PAINTING (issued in its entirety)
- Item SP11** Specification Section 099123 – INTERIOR PAINTING (issued in its entirety)
- Item SP12** Specification Section 321216 – ASPHALT PAVING (delete section)
- A. Delete specification section in its entirety.

CIVIL DRAWINGS:

- Item C1 Drawing C-1; GRADING, UTILITY, AND DEMOLITION PLANS (reissued)
- Item C2 Drawing C-2; SOIL EROSION NOTES AND DETAILS (reissued)

ARCHITECTURAL DRAWINGS:

- Item A1 Drawing; COVER SHEET (reissued)
A. Cover sheet reissued to include City of new Baltimore standard detail sheets for; storm sewer details, sanitary sewer details, water main details.
- Item A2 Drawing A1-01; DEMOLITION FLOOR PLAN (revised but not reissued)
A. Disregard angled hatch pattern indicated on existing and future wall indications. Dashed lines indicate walls to be removed.
B. Refer to plumbing plan M1-01 for additional concrete floor removal and replacement for new sanitary under floor piping from room 106 and 109.
- Item A3 Drawing A6-01; Wall Sections and Details (reissued)
A. Revise details 1 and 6 to coordinate column base plate elevation with structural foundation elevation.
B. Revise detail 5 for guard post height.
C. Revise detail 6 to coordinate structural apron with detail 8 on S2-01.
D. Revise detail 7 to new masonry wall construction to the underside of existing steel structure at column 4ex. Gyp board wall to be constructed above the existing office. Provide double deflection track at steel beam above.

STRUCTURAL DRAWINGS:

- Item S1 Drawings S1-01; FOUNDATION PLAN (reissued)
A. Refer to revised sheet S1-01 for changes and additions to the structural foundation and framing.
- Item S2 Drawings S2-00; GENERAL NOTES (reissued)
A. Refer to revised sheet S2-00 for changes and additions to the general notations.
- Item S3 Drawings S2-01; DETAILS (reissued)
A. Refer to revised sheet S2-01 for changes and additions to the general notations.

ELECTRICAL DRAWINGS:

Item E1 Drawing E0-01; SPECIFICATIONS, DISGRAMS, SCHEDULES- (issued with this addendum)

Item E2 Drawing E3-01; POWER PLAN (reissued)
A. Refer to changes for power and circuiting for mechanical equipment
B. Refer to changes for power and control circuiting for fuel system.
C. Refer to added notations for gate power and control system.

****END OF ADDENDUM****

DOCUMENT 003132 - GEOTECHNICAL DATA

1.1 GEOTECHNICAL DATA

- A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations. They are made available for Bidders' convenience and information, but are not a warranty of existing conditions. This Document and its attachments are not part of the Contract Documents.
- B. A geotechnical investigation report for Project, prepared by Testing Engineers and Consultants, Inc. , dated June 29,2012, is available for viewing as appended to this Document.
- C. Related Requirements:
 - 1. Document "Instructions to Bidders" for the Bidder's responsibilities for examination of Project site and existing conditions.

END OF DOCUMENT 003132

Testing Engineers & Consultants, Inc.

JFR Architects, PC
33668 Bartola Avenue
Sterling Heights, Michigan 48312

GEOTECHNICAL INVESTIGATION

FOR

DPS Building Additions
35389 Cricklewood
New Baltimore, Michigan

TEC Report: 52620

By:

Testing Engineers & Consultants, Inc.
1343 Rochester Road
P.O. Box 249
Troy, Michigan 48099-0249
(248) 588-6200

June 29, 2012



Testing Engineers & Consultants, Inc.

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TEC Report: 52620
Date Issued: June 29, 2012

Mr. James F. Renaud, AIA, NCARB
JFR Architects, PC
33668 Bartola Avenue
Sterling Heights, Michigan 48312

Re: Geotechnical Investigation for
DPS Building Additions
35389 Cricklewood
New Baltimore, Michigan

Dear Mr. Renaud:


Please find enclosed the results of a geotechnical investigation performed at the above referenced site. This geotechnical report presents our field and laboratory results; engineering analysis; and our recommendations for design of foundation and slabs, as well as important construction considerations.

As you may know, Testing Engineers & Consultants, Inc. (TEC) has more than forty six years of experience in Quality Control Testing and Construction Inspection. We would be pleased to provide these services on this project.

Should you have any questions regarding this report, please let us know. It has been a pleasure to be of service to you.

Respectfully submitted,

TESTING ENGINEERS & CONSULTANTS, INC.


Carey J. Suhan, P.E.,
Vice President, Geotechnical
& Environmental Services

CJS/lm
Enclosure

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CONSULTING ENGINEERS & FULL-SERVICE PROFESSIONAL TESTING AND INSPECTION
OFFICES IN ANN ARBOR, DETROIT, AND TROY
FOUNDED IN 1966

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APPENDIX

TEST BORING LOCATION PLAN

LOGS OF TEST BORINGS

SIEVE ANALYSIS RESULTS

GENERAL NOTES FOR SOIL CLASSIFICATION

Testing Engineers & Consultants, Inc.

Mr. James F. Renaud, AIA, NCARB
JFR Architects, PC
June 29, 2012

TEC Report: 52620

1.0 INTRODUCTION

This report presents the results of a geotechnical investigation for the proposed building addition to the City of New Baltimore DPS Building at 35389 Cricklewood in New Baltimore, Michigan. Authorization to perform this investigation was given by Mr. James F. Renaud in a signed copy of TEC Proposal No. 060-12-0126 on June 15, 2012.

The proposed development is to consist of the construction of two building additions to the existing DPS building. The small office addition will be on the south side of the existing building and will have a footprint area of 290 square feet. The larger pre-engineered building addition will be on the west side of the existing building and will have a footprint area of 2,450 square feet. The additions will be single story, slab on grade structures. In addition, the gravel lot west of the DPS building will be paved.

The purpose of this investigation was to obtain information necessary to determine basic engineering properties of soils at the site through a series of test borings and laboratory tests performed on the soil samples obtained during the field investigation. This information has been evaluated to provide the general recommendations for site development preparations, foundation requirements, floor slab designs and other geotechnical information.

2.0 FIELD INVESTIGATION

Five test borings were drilled on the site at the locations shown on the Test Boring Location Plan. The locations are accurate to within a short distance of the locations shown on the plan. Boring Nos. 1 and 2 were located at the large building addition, Boring No. 3 was located at the small south side office addition and Boring Nos. 4 and 5 were located in the existing gravel lot. The test borings were drilled on June 19 and 20, 2012 with truck-mounted auger equipment to depths ranging from 5 to 20 feet.

Drilling methods and standard penetration tests were performed in general accordance with the current ASTM D-1452 and D-1586 procedures, respectively. These procedures specify that a standard 2-inch O.D. split-barrel sampler be driven by a 140-pound hammer with a free fall of 30 inches. The number of hammer blows required to drive the split-barrel sampler through three successive 6-inch increments is recorded on the Test Boring Log. The first 6-inch increment is used for setting the sampler firmly in the soil and the sum of the hammer blows for the second and third increments is referred to as the "Standard Penetration Index" (N). N values were obtained with an automatic trip hammer.

From the standard penetration test a soil sample is recovered in the liner sampler tubes that are located inside the split-barrel sampler. Upon recovery of a soil sample, the liner tubes are removed from the split-barrel sampler and placed in a container which is sealed to minimize moisture losses during transportation to the laboratory. Standard penetration tests are usually made at depths of 2 ½, 5, 7 ½ and 10 feet and at 5-foot depth intervals thereafter. These parameters may vary for a given project depending on the nature of the subsoils and the geotechnical information required.

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3.0 LABORATORY TESTING

The laboratory testing consisted of determining the unconfined compressive strength, the natural bulk density and the natural moisture content of the soil samples recovered in the liner sampler tubes. In the unconfined compression tests, the compressive strength of the soil is determined by axially loading a soil sample until failure is observed or 15% strain, whichever occurs first. The above referenced test data are recorded on the boring logs. Some test results may deviate from the norm because of variations in texture, imperfect samples, presence of pebbles and/or sand streaks, etc. The results are still reported although they may not be relevant.

The particle size distribution of one granular soil sample was also determined. The distribution provides classification, structural support information and estimates of the permeability and permeability-related behavior of the granular soils. The results are included in the appendix.

Also, the Atterberg Limits of one cohesive soil sample were determined. The Atterberg Limits are water contents at which cohesive (clayey) soils change behavior. They are used for soil classification and they have been correlated to several important engineering properties of a soil. As such, they can be used to obtain inexpensive estimates of cohesive soil behavior. The Atterberg Limits are shown on Boring No. 2 in the appendix.

Samples taken in the field are retained in our laboratory for 60 days and are then destroyed unless special disposition is requested by the client. Samples retained over a long period of time are subject to moisture loss and are then no longer representative of the conditions initially encountered.

4.0 GENERAL SUBSURFACE CONDITIONS

4.1 Subsoil Conditions

The soil conditions encountered in the borings are presented on the individual boring logs. Each log presents the soil types encountered at that location as well as laboratory test data, ground water data, and other pertinent information. Descriptions of the various soil consistencies, relative densities and particle sizes are given in the Appendix. Definitions of the terms and symbols utilized in this report may be found in ASTM D-653.

Boring Nos. 2 and 3 were drilled in concrete pavement. The pavement was 7 ½ inches thick at Boring No. 2 and 8 ½ inches thick at Boring No. 3. The ground surface at Boring Nos. 1, 4 and 5 was covered with crushed gravelly, silty sand fill that ranged in thickness from 9 to 14 inches. The gravelly, silty sand fill was underlain by additional fill consisting of medium compact sand. The underlying fill extended to depths ranging from 2 ½ to 3 feet below existing ground surface. A trace of topsoil was noted in the fill at Boring No. 4. The fill at Boring No. 1 was underlain by 1 ½ feet of clayey topsoil.

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4.1 Subsoil Conditions (Cont'd)

The pavement at Boring Nos. 2 and 3 and the fill at Boring No. 4 were underlain by loose sand that extended to depths ranging from 2 ½ to 3 feet below existing ground surface/pavement. The loose sand at these borings as well as the fill/topsoil at Boring Nos. 1 and 5 were underlain by very soft to firm clay with some silt. The clay became very soft in consistency at a depth of 12 feet. Atterberg Limits tests performed on a typical sample of the upper clays indicate the clays are medium in plasticity.

Standard penetration values range from 1 blow for a penetration of 18 inches to 17 blows per foot with unconfined compressive strengths of 660 to 6,840 pounds per square foot (psf). Bulk densities range from 93 to 125 pounds per cubic foot with moisture contents of 4 to 52 percent of the dry weight of the soil. The low densities and high moisture contents are typical for very soft clays.

4.2 Ground Water Observations

Water level readings were taken in the bore holes during and after the completion of drilling. These observations are noted on the respective Test Boring Logs. Ground water was first encountered during drilling at Boring Nos. 2 and 3 at a depth of 2 feet. After completion of drilling and removal of the augers, water was measured at a depth of 8'2" at Boring No. 3. After completion of drilling no water was noted in Boring No. 2. No water was noted at the other three borings either during drilling or after completion of drilling.

5.0 ANALYSIS AND RECOMMENDATIONS

5.1 Ground Water Conditions

The position of water levels found in test borings may vary somewhat depending on seasonal precipitation. At the level encountered in the borings, it will present some problems for design and construction of foundations and utilities. The ground water encountered in the two borings appears to be trapped in the wet sand layers overlying impermeable clay. Ground water is expected to be controllable by pumping from excavations or properly prepared sumps.

5.2 Recommended Earthwork Operations

Within the limits of areas to be developed, the surface vegetation and topsoil should be removed prior to the site being graded. Since the upper soils outside the existing paved areas are fill, close field observation should be performed during site preparation to identify any large debris or unsuitable soils in the subgrade. Any such materials should be removed and replaced with compacted engineered fill. The underlying clayey topsoil encountered below the fill at Boring No. 1 at a depth of 2 ½ feet below

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5.2 Recommended Earthwork Operations (Cont'd)

existing ground surface, and extending to about 4 1/2 feet, should be removed in its entirety under proposed slab and pavement areas and replaced with engineered fill. In addition, the sandy fill at Boring No. 4 that contained a trace of topsoil should be evaluated in the field by a geotechnical engineer to determine if removal is required.

After removal of topsoil and unsuitable soils, the subgrade should then be rolled with a vibrating roller to densify any loose sand. This should be followed by a proofroll to identify soft or yielding areas. It may be possible to stabilize soft areas with crushed stone or concrete. Much of the subgrade appears to be crushed gravelly, silty sand or loose sand. At most locations the moisture contents are at or slightly above their optimum moisture contents. At Boring No. 1, the exposed subgrade, after the buried clayey topsoil is removed, is plastic clay with some silt and the moisture content appears to be well elevated above its expected optimum moisture content for compaction. In addition, the loose sand near the surface at Boring Nos. 2 and 3 is only 1 1/2 feet above ground water elevation. At this moisture content and ground water elevation, it is expected that the subgrade would be unstable and fail a proofroll. This subgrade instability would be expected where the upper soils have higher amounts of silt and clay and/or where ground water level is only a few feet below exposed subgrade.

If the work is to be performed in the dry summer months the area could be disked and allowed to dry and then be recompacted. Otherwise, the base of the excavation will need to be stabilized with crushed stone or concrete, likely with a minimum of 12 inches of stone.

Engineered backfill required for construction excavations or fill required to achieve desired grades should preferably consist of clean and well graded granular soils. On-site granular material visually free of topsoil should be satisfactory for use, particularly for balancing and grading the site. Fill should be placed in uniform layers not more than 9 inches in thickness with the soils in each layer compacted to a minimum of 95% of the maximum density as determined by ASTM D-1557. Fill should be at approximately the optimum moisture content during placement and compaction. Furthermore, frozen material must not be used as fill and fill should not be placed on frozen ground.

Since the upper soils are predominantly loose to medium compact sands, lateral support structure or side sloping with a minimum 1H:1V ratio will be required for the anticipated excavations. Soils exposed in the bases of all satisfactory foundation excavations should be protected against any detrimental change in conditions such as from disturbances, rain or freezing. Surface run-off water should be drained away from the excavations and not be allowed to pond. If possible, all footing concrete should be placed the same day the excavation is made. If this is not possible, the footing excavations should be adequately protected.

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June 29, 2012

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5.3 Foundation Recommendations

The on-site soils are acceptable for support of the proposed structure on shallow foundations. Local building codes and climatic conditions require that exterior foundations be placed at a minimum depth of 3 ½ feet below finished grade to provide for adequate frost protection. Interior foundations may be below the floor at a lesser depth if not exposed to frost penetration. In any case, the footings should be deep enough to bear on original soil below any fill and the buried topsoil (that is to be removed) that was encountered at Boring No. 1.

The soil at the typical foundation depth is soft to plastic clay. At Boring No. 3, where the soft clay was encountered, the foundations for the office addition will need to bear on the firm clay found at a depth of 5 feet below existing pavement surface. To bear on the plastic to firm clay below the buried topsoil encountered at Boring No. 1 and the soft clay at Boring No. 3, the soils in the excavations for the exterior footings will need to be undercut an additional 1 foot at Boring No. 1 and 1 ½ feet at Boring No. 3. Foundations bearing on the plastic to firm clay can be designed for a maximum net allowable bearing pressure of 1,500 psf. The foundations should be high enough, however, to avoid overstressing the underlying very soft clay encountered at 12 feet. We recommend that exterior footings be no deeper than 7 feet below existing ground surface and interior column footings be no deeper than 6 feet below existing ground surface. The recommended design bearing pressure should provide a factor of safety of about 2.5 to 3 against shear failure and limit differential settlements between adjacent columns to less than ¾ inch.

The known soil conditions based on deeper borings that were performed in April 2007 for the nearby salt storage building consist of sand over lacustrine silty clay and clayey silt over hard sandy clay about 45 feet below the ground surface. The strength of the lacustrine clay, which occupies the bulk of the deposits, decreases from plastic and firm to very soft. The moisture content of the clay exceeds 40 percent and the shear strength of the lacustrine clay deposit may be below 500 psf within about 15 feet of the soil profile in the deeper borings. For that reason, the site profile corresponds to a Seismic Site Class E in accordance with the 2009 Michigan Building Code (MBC). This seismic site class should be used in determining the design seismic forces in accordance with the provisions of the code.

5.4 Floor Slabs and Pavements

The subgrade resulting from the site preparation, as outlined in the recommended earthwork operations section, will provide a fair to good subgrade for support of pavements and floor slabs. As outlined in the Recommended Earthwork Operations section, the buried clayey topsoil encountered at Boring No. 1 should be removed and replaced with compacted engineered fill.

For the slabs on grade, it is recommended that a minimum of 4 inches of compacted sand meeting MDOT Class II specifications be placed beneath the floor slab.

Testing Engineers & Consultants, Inc.

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JFR Architects, PC
June 29, 2012

TEC Report: 52620

5.4 Floor Slabs and Pavements (Cont'd)

None of the aggregate fill in the west lot can be considered an ideal aggregate base. The gradation of the aggregate fill is much finer than that of an MDOT 21AA aggregate which is generally used as an aggregate base as well as an MDOT 22A or 23A aggregate which is generally used as an aggregate surface course. Furthermore, the Loss by Wash over a #200 sieve (silt and clay content) is considerably higher than that allowed for the MDOT dense graded aggregates. These soils have poor drainage capability and support strength, are considered frost susceptible and can be made unstable with elevated moisture contents due to the high silt contents. Generally a clean sand and gravel base is constructed below asphalt pavement. We recommend that the new sand and gravel base comply with MDOT 21AA grading requirements.

We assume that the new pavement surface will be near the same elevation as the existing west lot aggregate surface. If so, about 12 to 14 inches of undercut will be required to accommodate the new pavement cross section.

The table below shows the recommended pavement cross section for the new pavement areas. These cross sections are contingent on the premise that the subgrade is stable and has been repaired in soft and yielding areas.

Light Duty Pavement (Automobile Parking Lots)

Bituminous Asphalt Pavement Thickness	Inches
Wearing (MDOT 13A)	1 ½
Leveling (MDOT 3C)	2
Aggregate Base Thickness (MDOT 21AA)	8

Heavy Duty Pavement (Drives and Maintenance Vehicle Parking)

Bituminous Asphalt Pavement Thickness	Inches
Wearing (MDOT 13A)	2
Leveling (MDOT 3C) 2 Lifts	4
Aggregate Base Thickness (MDOT 21AA)	8

The pavements should be properly crowned and shaped in order to provide effective surface drainage and prevent water ponding. A 1 ½ percent slope is recommended. It is unknown if there are existing edge drains. Edge drains should be considered to adequately drain the subgrade and stub drains should be installed at all catch basins.

The pavement recommendations presented above are intended to provide a serviceable pavement for an extended period of time. However, it should be noted that all pavements require regular maintenance

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JFR Architects, PC
June 29, 2012

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5.4 Floor Slabs and Pavements (Cont'd)

and occasional repairs. The need of such maintenance and repairs is not necessarily indicative of premature pavement failure. If such activities are not performed in an appropriate and timely manner, the serviceable life of the pavement can be substantially reduced.

6.0 DESIGN REVIEW AND FIELD MONITORING

The evaluations and recommendations presented in this report relative to site preparation and building foundations have been formulated on the basis of assumed and provided data relating to the location, type and finished grades for the proposed structure and adjacent areas. Any significant change in this data should be brought to our attention for review and evaluation with respect to the prevailing subsoil conditions.

When the building and foundation plans are finalized, a consultation should be arranged with us for a review to verify that the evaluations and recommendations have been properly interpreted.

Soil conditions at the site could vary from those generalized on the basis of test borings made at specific locations. It is therefore recommended that Testing Engineers & Consultants, Inc. be retained to provide soil engineering services during the site preparation, excavation and foundation phases of the proposed project. This is to observe compliance with the design concepts, specifications and recommendations. Also, this provides opportunity for design changes to be made in the event that subsurface conditions differ from those anticipated prior to the start of construction.



Gary E. Putt, P.E.
Senior Project Engineer



Carey J. Suhan, P.E.
Vice President, Geotechnical
& Environmental Services

GEP/CJS/ln
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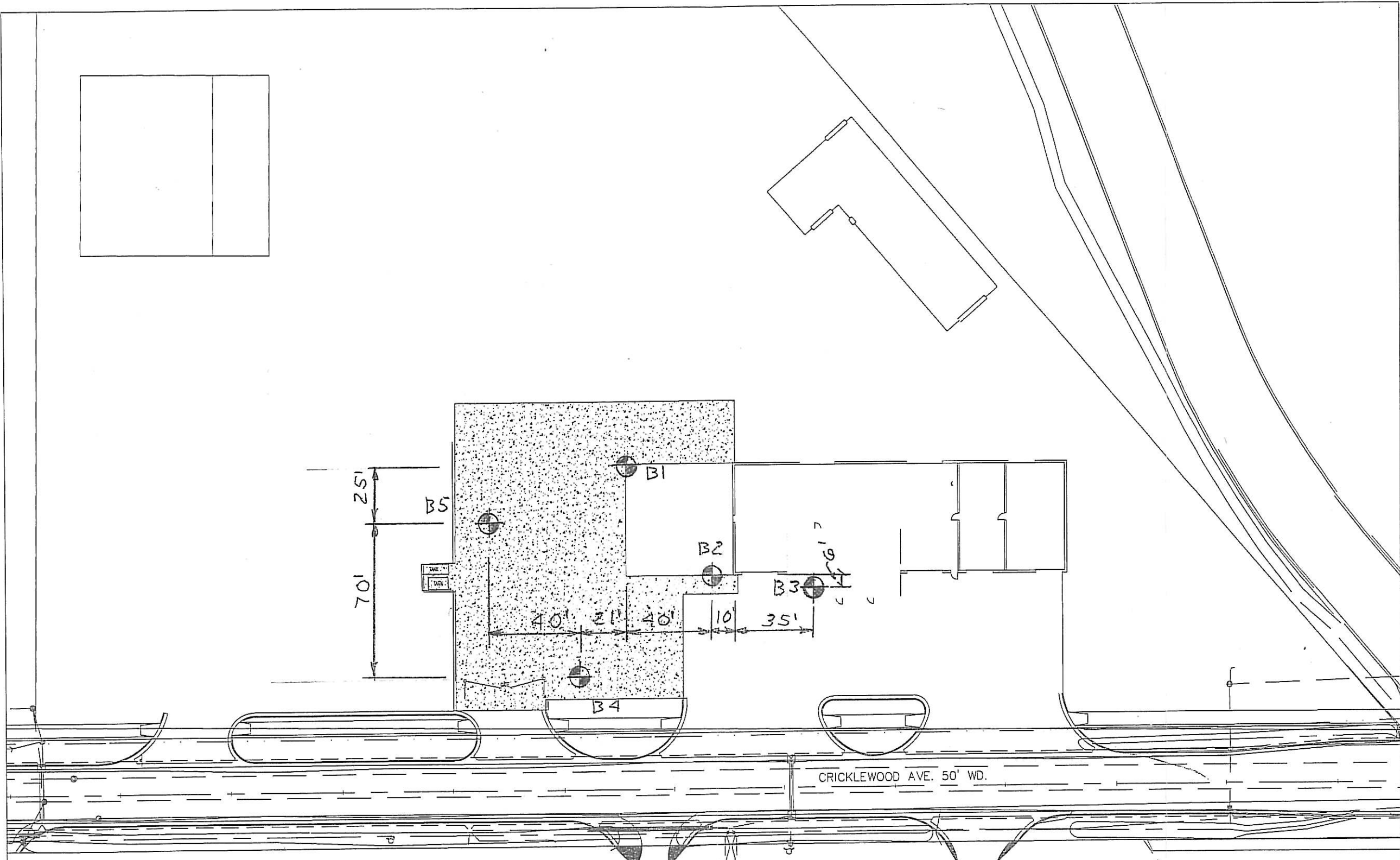
APPENDIX

Test Boring Location Plan

Logs Of Test Borings

Sieve Analysis Results

General Notes For Soil Classification



City of New Baltimore
DPS BUILDING ADDITION
 JUNE 11, 2012



2
 Opt-B

Proposed Concept Site Plan

SCALE: 1/16" = 1'-0"

TEST BORING LOCATION PLAN





Testing Engineers & Consultants, Inc.

1343 Rochester Road - PO Box 249 - Troy, Michigan - 48099-0249
 (248) 588-6200 or (313) T-E-S-T-I-N-G
 Fax (248) 588-6232

Boring No.: 1	Job No.: 52620	Project: DPS Building Additions, 35389 Cricklewood
Client: JFR Architects, PC		Location: New Baltimore, Michigan
Type of Rig: Truck		Drilled By: I. Mickle
Drilling Method: Solid Stem Augers		Started: 6/19/2012
Ground Surface Elevation:		Completed: 6/20/2012

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
2.5	LS	14 7 5	.75	Brown Crushed Gravelly Silty Well Graded Sand-FILL (9")	10.3	102	
			2.5	Medium Compact Moist Dark Brown Sand With Trace Of Gravel-FILL			
5.0	LS	2 3 4	4.5	Plastic Moist Black Clayey TOPSOIL	13.6	105	660
				Plastic Moist Dark Gray CLAY With Some Silt			
7.5	LS	2 2 3	7		29.6	102	1240
				Plastic Moist Variegated CLAY With Some Silt			
10.0	LS	3 4 4	9		30.3	115	5190
				Plastic Moist Gray CLAY With Some Silt			
15.0	LS	1/18"	12		51.4	100	
				Very Soft Moist Gray CLAY With Some Silt			
20.0	LS	1/18"	20		45.2	103	
				Bottom of Borehole at 20'			

"N" - Standard Penetration Resistance
 SS - 2" .D. Split Spoon Sample
 LS - Sectional Liner Sample
 ST - Shelby Tube Sample
 AS - Auger Sample

w - H2O, % of dry weight
 d - Bulk Density, pcf
 qu - Unconfined Compression, psf
 DP - Direct Push

Water Encountered: None

At Completion: None

Boring No. 1



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Boring No.: 2	Job No.: 52620	Project: DPS Building Additions, 35389 Cricklewood
Client: JFR Architects, PC		Location: New Baltimore, Michigan
Type of Rig: Truck		Drilled By: I. Mickle
Drilling Method: Solid Stem Augers		Started: 6/19/2012
Ground Surface Elevation:		Completed: 6/19/2012

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			.63	CONCRETE (7 1/2")			
	LS	4	2		18.9	119	
2.5		4	2.6	Loose Moist Brown Fine SAND			
	LS	2		Loose Wet Brown Fine SAND	21.6	119	4860
5.0		2	5.5	Plastic Moist Variegated CLAY With Some Silt			
	LS	3		LL=37 PL=16 PI=21	22.3	115	5110
7.5		5	8	Firm Moist Brown Oxidized CLAY With Some Silt			
	LS	2		Plastic Moist Gray CLAY With Some Silt	30.0	117	4780
10.0		3					
		4	12	Very Soft Moist Gray CLAY With Some Silt			
12.5	LS	1/18"			52.0	93	
15.0							
17.5							
	LS	1/18"	20		38.5	94	
20.0				Bottom of Borehole at 20'			
22.5							

"N" - Standard Penetration Resistance
 SS - 2" D. Split Spoon Sample
 LS - Sectional Liner Sample
 ST - Shelby Tube Sample
 AS - Auger Sample

w - H₂O, % of dry weight
 d - Bulk Density, pcf
 qu - Unconfined Compression, psf
 DP - Direct Push

Water Encountered: 2'0"

At Completion: None

Boring No. 2



Testing Engineers & Consultants, Inc.

1343 Rochester Road - PO Box 249 - Troy, Michigan - 48099-0249
 (248) 588-6200 or (313) T-E-S-T-I-N-G
 Fax (248) 588-6232

Boring No.: 3	Job No.: 52620	Project: DPS Building Additions, 35389 Cricklewood
Client: JFR Architects, PC		Location: New Ballimore, Michigan
Type of Rig: Truck		Drilled By: I. Mickle
Drilling Method: Solid Stem Augers		Started: 6/20/2012
Ground Surface Elevation:		Completed: 6/20/2012

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
2.5	LS	4	.71	CONCRETE (8 1/2")	13.2	106	
		4	2				
		3	3	Loose Moist Brown SAND With Trace Of Gravel			
5.0	LS	1		Loose Wet Brown Fine SAND	20.7	124	1900
		2	5	Soft Moist Dark Gray CLAY With Some Silt & Occasional Wet Sand Seam			
7.5	LS	3		Firm Moist Brown Oxidized CLAY With Some Silt	23.2	119	6840
		5	8				
		7		Plastic Moist Gray CLAY With Some Silt			
10.0	LS	3			30.2	116	3130
		3					
12.5	LS	3	12		51.8	102	
		3		Very Soft Moist Gray CLAY With Some Silt			
15.0	LS	1/12"	15				
		1		Bottom of Borehole at 15'			

"N" - Standard Penetration Resistance
 SS - 2" .D. Split Spoon Sample
 LS - Sectional Liner Sample
 ST - Shelby Tube Sample
 AS - Auger Sample

w - H₂O, % of dry weight
 d - Bulk Density, pcf
 qu - Unconfined Compression, psf
 DP - Direct Push

Water Encountered: 2'0"

At Completion: 8'2"

Boring No. 3



Testing Engineers & Consultants, Inc.

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 (248) 588-6200 or (313) T-E-S-T-I-N-G
 Fax (248) 588-6232

Boring No.: 4	Job No.: 52620	Project: DPS Building Additions, 35389 Cricklewood
Client: JFR Architects, PC		Location: New Baltimore, Michigan
Type of Rig: Truck		Drilled By: I. Mickle
Drilling Method: Solid Stem Augers		Started: 6/20/2012
Ground Surface Elevation:		Completed: 6/20/2012

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
2.5	LS	21 6 7	1.2	Brown Crushed Gravelly Silty Well Graded Sand-FILL	4.5	100	
			3	Medium Compact Moist Dark Brown Sand With Trace Of Gravel & Topsoil-FILL			
5.0	LS	2 2 4	4	Loose Moist To Very Moist Brown Fine SAND	22.8	125	5270
			5	Plastic Moist Brown Oxidized CLAY With Some Silt			
7.5				Bottom of Borehole at 5'			
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
 SS - 2" .D. Split Spoon Sample
 LS - Sectional Liner Sample
 ST - Shelby Tube Sample
 AS - Auger Sample

w - H₂O, % of dry weight
 d - Bulk Density, pcf
 qu - Unconfined Compression, psf
 DP - Direct Push

Water Encountered: None

At Completion: None

Boring No. 4



Testing Engineers & Consultants, Inc.

1343 Rochester Road - PO Box 249 - Troy, Michigan - 48099-0249
 (248) 588-6200 or (313) T-E-S-T-I-N-G
 Fax (248) 588-6232

Boring No.: 5	Job No.: 52620	Project: DPS Building Additions, 35389 Cricklewood
Client: JFR Architects, PC		Location: New Baltimore, Michigan
Type of Rig: Truck		Drilled By: I. Mickle
Drilling Method: Solid Stem Augers		Started: 6/20/2012
Ground Surface Elevation:		Completed: 6/20/2012

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
0.0			.75	Brown Crushed Gravelly Silty Well Graded Sand-FILL (9")	12.5	103	
2.5	LS	11 8 9	2.7	Medium Compact Moist Dark Brown Sand With Trace Of Gravel-FILL			
5.0	LS	2 3 3	5	Plastic Moist Dark Gray CLAY With Some Silt & Topsoil Layers	26.5	110	2720
5.0				Bottom of Borehole at 5'			
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance
 SS - 2" D. Split Spoon Sample
 LS - Sectional Liner Sample
 ST - Shelby Tube Sample
 AS - Auger Sample

w - H₂O, % of dry weight
 d - Bulk Density, pcf
 qu - Unconfined Compression, psf
 DP - Direct Push

Water Encountered: None

At Completion: None

Boring No. 5



Testing Engineers & Consultants, Inc.

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 (248) 588-6200 or (313) T-E-S-T-I-N-G
 Fax (248) 588-6232

Date: June 22, 2012
 Project: DPS Building Additions
 Client: JFR Architects, PC
 Source: Boring No. 4, 0 – 1.2'
 Use:
 Remarks:

TEC Job No. 52620
 Submitted By: I. Mickle
 Tested By: M. Howdysshell
 Date Sampled: June 20, 2012

MECHANICAL ANALYSIS FORM

SIEVE SIZE	RETAINED WEIGHT	FRACTIONAL PERCENT	PERCENTS RETAINED	CUMULATIVE PASSING	SPEC.
3"					INITIAL WT. 686.7
2 1/2"					WT. AFT/WASH 522.44
1 1/2"					LBW GMS. 164.3
1"	0	0	0	100	LBW % 23.9
3/4"	38.8	5.6	5.6	94.4	CRUSHED %
1/2"	39.5	5.8	11.4	88.6	REQ'D CRSH. %
3/8"	22.9	3.3	14.7	85.3	CLAY IRONSTONE %
#4	62.3	9.1	23.8	76.2	SOFT PARTICLES %
#10	82.1	12.0	35.8	64.2	CHERT %
#20	91.8	13.4	49.2	50.8	SOFT & CHERT %
#30	29.2	4.2	53.4	46.6	FN. MODULUS
#40	24.2	3.5	56.9	43.1	MATERIAL DESCRIPTION
#100	75.7	11.0	67.9	32.1	Brown Crushed Gravelly
PAN	54.5	7.9	75.8		Silty Well Graded Sand
LBW	162.9	24.2		24.2	
TOTAL	686.7	100			

Testing Engineers & Consultants, Inc.

Mr. James F. Renaud, AIA, NCARB
JFR Architects, PC
June 29, 2012

TEC Report: 52620

SOIL DESCRIPTIONS

In order to provide uniformity throughout our projects, the following nomenclature has been adopted to describe soil characteristics:

CONSISTENCY AND RELATIVE DENSITY

COHESIVE SOILS		GRANULAR SOILS	
<u>"N"</u>	<u>CONSISTENCY</u>	<u>"N"</u>	<u>RELATIVE DENSITY</u>
<u>VALUES</u>		<u>VALUES</u>	
0 – 2	Very Soft	0 – 4	Very Loose
2 – 4	Soft	4 – 10	Loose
4 – 8	Plastic	10 – 30	Med. Compact
8 – 15	Firm	30 – 50	Compact
15 – 30	Stiff	50+	Dense
30 – 60	Ex. Stiff		
60+	Hard		

Material Types By Particle Size

BOULDERS
COBBLES
GRAVEL
COARSE SAND
MEDIUM SAND

ASTM D2487

Stones Over 12" In Diameter
Stones 3" To 12" In Diameter
#4 To 3" Diameter
#10 To #4 Sieves
#40 To #10 Sieves

Testing Engineers & Consultants, Inc.

Mr. James F. Renaud, AIA, NCARB
JFR Architects, PC
June 29, 2012

TEC Report: 52620

SOIL DESCRIPTIONS (Cont'd)

Material Types By Particle Size

FINE SAND

SILT

CLAY

PEAT

MARL

SWAMP BOTTOM DEPOSITS

ASTM D2487

#200 To #40 Sieves

Minus #200 Sieve Material,
Fairly Non-Plastic, Falls Below
"A"-Line

Minus #200 Sieve Material Plastic
Material That Has A Tendency To
Stick Together, Can Be Rolled
Into Fine Rods When Moistened;
Falls Above "A"-Line

Black Organic Material
Containing Partially Decayed
Vegetable Matter

Fresh Water Deposits Of Calcium
Carbonate, Often Containing
Percentages Of Peat, Clay
& Fine Sand

Mixtures Of Peat, Marl,
Vegetation & Fine Sand
Containing Large Amounts Of
Decayable Organic Material

DOCUMENT 004322 - UNIT PRICES FORM

- A. Bidder: _____.
- B. Project Name: City of New Baltimore DPS Building Addition .
- C. Project Location: 35389 Cricklewood, New Baltimore MI. 48047.
- D. Owner: City of New Baltimore
- E. Architect: Partners in Architecture, PLC.
- F. Architect Project Number: 13-107

1.2 BID FORM SUPPLEMENT

- A. This form is required to be attached to the Bid Form.
- B. The undersigned Bidder proposes the amounts below be added to or deducted from the Contract Sum on performance and measurement of the individual items of Work, and for adjustment of the quantity given in the Unit-Price Allowance for the actual measurement of individual items of the Work.
- C. If the unit price does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."

1.3 UNIT PRICES

- A. Unit-Price No. 1: Removal of unsatisfactory soil and replacement with satisfactory soil material.
 - 1. _____ Dollars (\$ _____) per unit.
- B. Unit-Price No. 2: Existing over head jamb repair for 10' spliced replacement.
 - 1. _____ Dollars (\$ _____) per unit.

1.4 SUBMISSION OF BID SUPPLEMENT

- A. Respectfully submitted this ____ day of _____, 2012.
- B. Submitted By: _____(Insert name of bidding firm or corporation).
- C. Authorized Signature: _____(Handwritten signature).
- D. Signed By: _____(Type or print name).
- E. Title: _____(Owner/Partner/President/Vice President).

END OF DOCUMENT 004322

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.
- B. Related Requirements:
 - 1. Section 004322 "Unit prices form" to be included with bid form 003100.

1.2 DEFINITIONS

- A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.3 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

- A. Unit Price No. 1: Removal and replacement of unsuitable soils below building pad.

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UNIT PRICES

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1. Description: Cost of removal of unsuitable soils below the building addition area and replacement with engineered fill compacted in place in 6" lifts per geotechnical report specification section 003132.
2. Unit of Measurement: Per cubic yard.

B. Unit Price No. 2: Repair steel jamb at existing over head door opening.

1. Description: Repair existing pre engineered steel jamb section at existing overhead door by removing lower 10' section and splicing in new matching galvanized steel section including welding and anchoring at floor and masonry wall locations.
2. Unit of Measurement: Per 10 foot jamb section.

END OF SECTION 012200

SECTION 035416 - HYDRAULIC CEMENT UNDERLAYMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes hydraulic-cement-based, polymer-modified, self-leveling underlayment for application below interior floor coverings.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.3 INFORMATIONAL SUBMITTALS

- A. Product certificates.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Installer who is approved by manufacturer for application of underlayment products required for this Project.
- B. Product Compatibility: Manufacturers of underlayment and floor-covering systems certify in writing that products are compatible.

PART 2 - PRODUCTS

2.1 HYDRAULIC-CEMENT-BASED UNDERLAYMENTS

- A. Underlayment: Hydraulic-cement-based, polymer-modified, self-leveling product that can be applied in minimum uniform thickness of 1/2 inch and that can be feathered at edges to match adjacent floor elevations.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Ardex; K-15 Self-Leveling Underlayment Concrete.
 - b. BASF Construction Chemicals, Inc.; MBT Mastertop 110 Plus Underlayment.
 - c. CGM, Incorporated; PRO S.L.U. Self-Leveling Underlayment.
 - d. Euclid Chemical Company (The); Level Magic
 - e. L&M Construction Chemicals, Inc.; Levelex.
 - f. Lambert Corporation; Lambco L-16 Self-Level.
 - g. MAPEI Corporation; Ultraplan 1 Plus.
 - h. Maxxon Corporation; Level-Right.

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HYDRAULIC CEMENT UNDERLAYMENT
035416 - 2

- i. Specialty Construction Brands, Inc., an H.B. Fuller company; TEC Smooth Start USG Corporation; Levelrock SLC 400.
 2. Cement Binder: ASTM C 150, portland cement, or hydraulic or blended hydraulic cement as defined by ASTM C 219.
 3. Compressive Strength: Not less than 4000 psi (27.6 MPa) at 28 days when tested according to ASTM C 109/C 109M.
 4. Underlayment Additive: Resilient-emulsion product of underlayment manufacturer, formulated for use with underlayment when applied to substrate and conditions indicated.
- B. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3 to 6 mm); or coarse sand as recommended by underlayment manufacturer.
1. Provide aggregate when recommended in writing by underlayment manufacturer for underlayment thickness required.
- C. Water: Potable and at a temperature of not more than 70 deg F (21 deg C).
- D. Reinforcement: For underlayment applied to wood substrates, provide galvanized metal lath or other corrosion-resistant reinforcement recommended in writing by underlayment manufacturer.
- E. Primer: Product of underlayment manufacturer recommended in writing for substrate, conditions, and application indicated.
1. Primer shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D.
 2. Primer shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

PART 3 - EXECUTION

3.1 PREPARATION

- A. General: Prepare and clean substrate according to manufacturer's written instructions.
1. Treat nonmoving substrate cracks to prevent cracks from telegraphing (reflecting) through underlayment.
 2. Fill substrate voids to prevent underlayment from leaking.
- B. Concrete Substrates: Mechanically remove laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants that might impair underlayment bond.
1. Moisture Testing: Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates do not exceed a maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/100 sq. m) in 24 hours.
- C. Wood Substrates: Mechanically fasten loose boards and panels to eliminate substrate movement and squeaks. Sand to remove coatings that might impair underlayment bond and remove sanding dust.

1. Install underlayment reinforcement.
- D. Nonporous Substrates: For ceramic tile, quarry tile, and terrazzo substrates, remove waxes, sealants, and other contaminants that might impair underlayment bond, and prepare surfaces.
- E. Adhesion Tests: After substrate preparation, test substrate for adhesion with underlayment.

3.2 APPLICATION

- A. General: Mix and apply underlayment components according to manufacturer's written instructions.
 1. Close areas to traffic during underlayment application and for time period after application recommended in writing by manufacturer.
 2. Coordinate application of components to provide optimum underlayment-to-substrate and intercoat adhesion.
 3. At substrate expansion, isolation, and other moving joints, allow joint of same width to continue through underlayment.
- B. Apply primer over prepared substrate at manufacturer's recommended spreading rate.
- C. Apply underlayment to produce uniform, level surface.
 1. Apply a final layer without aggregate to product surface.
 2. Feather edges to match adjacent floor elevations.
- D. Cure underlayment. Prevent contamination during application and curing processes.
- E. Do not install floor coverings over underlayment until after time period recommended in writing by underlayment manufacturer.
- F. Remove and replace underlayment areas that evidence lack of bond with substrate, including areas that emit a "hollow" sound when tapped.

END OF SECTION 035416

SECTION 051200 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Structural steel.
2. Grout.

B. Related Requirements:

1. Section 051213 "Architecturally Exposed Structural Steel Framing" for additional requirements for architecturally exposed structural steel.

1.2 DEFINITIONS

- A. Structural Steel: Elements of the structural frame indicated on Drawings and as described in AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Show fabrication of structural-steel components.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer, fabricator.
- B. Retain "Welding certificates" Paragraph below if retaining "Welding Qualifications" Paragraph in "Quality Assurance" Article.
- C. Welding certificates.
- D. Mill test reports for structural steel, including chemical and physical properties.
- E. Source quality-control reports.
- F. Field quality-control and special inspection reports.

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STRUCTURAL STEEL FRAMING
051200 - 2
1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category STD, or is accredited by the IAS Fabricator Inspection Program for Structural Steel (AC 172).
- B. Installer Qualifications: A qualified installer who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector, Category CSE.
- C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- D. Comply with applicable provisions of the following specifications and documents:
 - 1. AISC 303.
 - 2. AISC 360.
 - 3. RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Connections: Provide details of simple shear connections required by the Contract Documents to be selected or completed by structural-steel fabricator to withstand loads indicated and comply with other information and restrictions indicated.
 - 1. Select and complete connections using schematic details indicated and AISC 360.
 - 2. Use [Load and Resistance Factor Design; data are given at factored-load level] [Allowable Stress Design; data are given at service-load level].

2.2 STRUCTURAL-STEEL MATERIALS

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 50 percent.
- B. W-Shapes: ASTM A 992/A 992M .
- C. Channels, Angles[, M] [, S]-Shapes: ASTM A 36/A 36M. Materials complying with first option in "Plate and Bar" Paragraph below are widely available; those complying with second option are less so.
- D. Plate and Bar: ASTM A 36/A 36M
- E. Cold-Formed Hollow Structural Sections: ASTM A 500/A 500M, Grade B structural tubing.
- F. Steel Pipe: ASTM A 53/A 53M, Type E or Type S, Grade B.
- G. Welding Electrodes: Comply with AWS requirements.

2.3 BOLTS, CONNECTORS, AND ANCHORS

- A. High-Strength Bolts, Nuts, and Washers: ASTM A 325 (ASTM A 325M), Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade C, (ASTM A 563M, Class 8S) heavy-hex carbon-steel nuts; and ASTM F 436 (ASTM F 436M), Type 1, hardened carbon-steel washers; all with plain finish.
- B. High-Strength Bolts, Nuts, and Washers: ASTM A 490 (ASTM A 490M), Type 1, heavy-hex steel structural bolts[or tension-control, bolt-nut-washer assemblies with splined ends]; ASTM A 563, Grade DH, (ASTM A 563M, Class 10S) heavy-hex carbon-steel nuts; and ASTM F 436 (ASTM F 436M), Type 1, hardened carbon-steel washers with plain finish.
- C. Unheaded Anchor Rods: ASTM F 1554, Grade 36.
 - 1. Configuration: Hooked.
 - 2. Finish: Plain.
- D. Headed Anchor Rods: ASTM F 1554, Grade 36, straight.
 - 1. Finish: Plain .
- E. Threaded Rods: ASTM A 36/A 36M.

2.4 PRIMER

- A. Low-Emitting Materials: Paints and coatings shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- B. Primer: Comply with Section 099113 "Exterior Painting" and Section 099123 "Interior Painting." Primer in first "Primer" Paragraph below requires SSPC-SP 2 surface preparation or better and 24 hours' drying before recoating. Type II has lower VOC content than Type I.
- C. Primer: Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer complying with MPI#79 and compatible with topcoat.

2.5 GROUT

- A. Metallic, Shrinkage-Resistant Grout: ASTM C 1107/C 1107M, factory-packaged, metallic aggregate grout, mixed with water to consistency suitable for application and a 30-minute working time.
- B. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107/C 1107M, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

2.6 FABRICATION

- A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC 303, "Code of Standard Practice for Steel Buildings and Bridges," and to AISC 360.

PARTNERS 13-107
STRUCTURAL STEEL FRAMING
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- B. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1/D1.1M and manufacturer's written instructions.

2.7 SHOP CONNECTIONS

- A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
 - 1. Joint Type: Snug tightened.
- B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

2.8 SHOP PRIMING

- A. Shop prime steel surfaces except the following:
 - 1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches (50 mm).
 - 2. Surfaces to be field welded.
 - 3. Surfaces of high-strength bolted, slip-critical connections.
 - 4. Surfaces to receive sprayed fire-resistive materials (applied fireproofing).
 - 5. Galvanized surfaces.
 - 6. Surfaces enclosed in interior construction.
- B. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:
 - 1. SSPC-SP 2, "Hand Tool Cleaning."
 - 2. SSPC-SP 3, "Power Tool Cleaning."
 - 3. SSPC-SP 7/NACE No. 4, "Brush-off Blast Cleaning."
- C. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils (0.038 mm). Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

2.9 SOURCE QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform shop tests and inspections.
 - 1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.
- B. Bolted Connections: Inspect and test shop-bolted connections according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
- C. Welded Connections: Visually inspect shop-welded connections according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:

1. Liquid Penetrant Inspection: ASTM E 165.
2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
3. Ultrasonic Inspection: ASTM E 164.
4. Radiographic Inspection: ASTM E 94.

D. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.
- B. Baseplates Bearing Plates and Leveling Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.
 1. Set plates for structural members on wedges, shims, or setting nuts as required.
 2. Weld plate washers to top of baseplate.
 3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
 4. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.
- C. Maintain erection tolerances of structural steel within AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

3.3 FIELD CONNECTIONS

- A. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
 1. Joint Type: Snug tightened.
- B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

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1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
2. Remove backing bars or runoff tabs where indicated, back gouge, and grind steel smooth.
3. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in AISC 303, "Code of Standard Practice for Steel Buildings and Bridges," for mill material.

3.4 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:
 1. Verify structural-steel materials and inspect steel frame joint details.
 2. Verify weld materials and inspect welds.
 3. Verify connection materials and inspect high-strength bolted connections.
- B. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- C. Bolted Connections: Inspect bolted connections according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
- D. Welded Connections: Visually inspect field welds according to AWS D1.1/D1.1M.
 1. In addition to visual inspection, test and inspect field welds according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:
 - a. Liquid Penetrant Inspection: ASTM E 165.
 - b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
 - c. Ultrasonic Inspection: ASTM E 164.
 - d. Radiographic Inspection: ASTM E 94.

END OF SECTION 051200

SECTION 054000 - COLD-FORMED METAL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Interior non-load bearing wall framing.
 2. Ceiling soffits and joist framing.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of cold-formed steel framing product and accessory.
- B. Shop Drawings:
1. Include layout, spacings, sizes, thicknesses, and types of cold-formed steel framing; fabrication; and fastening and anchorage details, including mechanical fasteners.
 2. Indicate reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.

1.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide cold-formed metal framing capable of withstanding design loads within limits and under conditions indicated.
1. Design Loads: As indicated.
 2. Deflection Limits: Design framing systems to withstand design loads without deflections greater than the following:
 - a. Interior Non-Load-Bearing Framing: Horizontal deflection of 1/240 of the wall height.
 - b. Ceiling Soffits and Joist Framing: Vertical deflection of 1/240 of the span.
 3. Design framing systems to provide for movement of framing members without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change of 120 deg F .
 4. Design framing system to maintain clearances at openings, to allow for construction tolerances, and to accommodate live load deflection of primary building structure as follows:
 - a. Upward and downward movement of 1/2 inch.
- B. Cold-Formed Steel Framing, General: Design according to AISI's "Standard for Cold-Formed Steel Framing - General Provisions."
1. Design exterior non-load-bearing wall framing to accommodate horizontal deflection without regard for contribution of sheathing materials.

1.4 SUBMITTALS

- A. Product Data: For each type of cold-formed metal framing product and accessory indicated.

- B. Shop Drawings: Show layout, spacings, sizes, thicknesses, and types of cold-formed metal framing; fabrication; and fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.
 - 1. For cold-formed metal framing indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
 - 2. Product data for each type of cold-formed metal framing, accessory, and product specified; material mill certificates or qualified independent testing agency test reports; welder certificates; and the following
 - a. Shop drawings showing layout, spacings, sizes, thicknesses, and types of cold formed metal framing, fabrication, fastening and anchorage details, including mechanical fasteners, and installation details.
 - b. Structural analysis data sealed and signed by a qualified Professional Engineer, in the State in which the project is located, who is responsible for their preparation for cold-formed metal framing indicated to comply with design loadings.
- C. Welding certificates.
- D. Qualification Data: For professional engineer.

1.5 QUALITY ASSURANCE

- A. Engineering Responsibility: Preparation of Shop Drawings, design calculations, and other structural data by a qualified professional engineer.
- B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of cold-formed metal framing that are similar to those indicated for this Project in material, design, and extent.
- C. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E 329 to conduct the testing indicated.
- D. Product Tests: Mill certificates or data from a qualified independent testing agency indicating steel sheet complies with requirements, including base-metal thickness, yield strength, tensile strength, total elongation, chemical requirements, and metallic-coating thickness.
- E. Welding: Qualify procedures and personnel according to AWS D1.11D1.1M, "Structural Welding Code--Steel," and AWS 01.3, "Structural Welding Code--Sheet Steel."
- F. Fire-Test-Response Characteristics: Where indicated, provide cold-formed metal framing identical to that of assemblies tested for fire resistance per ASTM E 119 by a testing and inspecting agency acceptable to authorities having jurisdiction.
- G. AISI Specifications and Standards: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" and its "Standard for Cold-Formed Steel Framing - General Provisions."

1. Comply with AISI's "Standard for Cold-Formed Steel Framing - Truss Design."
- H. Comply with AISI's "Standard for Cold-Formed Steel Framing - Prescriptive Method for One and Two Family Dwellings."
- I. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling.
- B. Store cold-formed metal framing, protect with a waterproof covering, and ventilate to avoid condensation.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Steel Sheet: ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of grade and coating weight as follows:
 1. Grade: As required by structural performance.
 2. Coating: G60.
- B. Steel Sheet for Clips: ASTM A 653/A 653M, structural steel, zinc coated, of grade and coating as follows:
 1. Grade: As required by structural performance.
 2. Coating: G90.

2.2 INTERIOR NON-LOAD-BEARING WALL FRAMING

- A. Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, and as follows:
 1. Minimum Base-Metal Thickness: 0.0428 inch.
 2. Flange Width: 1-5/8 inches.
- B. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with unstiffened flanges, and as follows:
 1. Minimum Base-Metal Thickness: Matching steel studs.
 2. Flange Width: 1-1/4 inches.
- C. Single Deflection Track: Manufacturer's single, deep-leg, U-shaped steel track; unpunched, with unstiffened flanges, of web depth to contain studs while allowing free vertical movement, with flanges designed to support horizontal and lateral loads and transfer them to the primary structure, and as follows:
 1. Minimum Base-Metal Thickness: 0.0428 inch.
 2. Flange Width: 1 inch plus the design gap for 1-story structures and 1 inch plus twice the design gap for other applications.
- D. Drift Clips: Manufacturer's standard bypass or head clips, capable of isolating wall stud from

upward and downward vertical displacement and lateral drift of primary structure.

2.3 CEILING JOIST FRAMING

- A. Steel Ceiling Joists: Manufacturer's standard C-shaped steel sections, of web depths indicated, unpunched, with stiffened flanges, and as follows:
 - 1. Minimum Base-Metal Thickness: 0.0428 inch.
 - 2. Flange Width: 1-5/8 inches, minimum.

- B. Built-up Members: Built-up members of manufacturer's standard C-shaped steel section, with stiffened flanges, nested into a U-shaped steel section joist track, with unstiffened flanges; unpunched; of web depths indicated; and as follows:
 - 1. Minimum Base-Metal Thickness: Matching Ceiling Joists.
 - 2. Flange Width: 1-5/8 inches, minimum.

2.4 FRAMING ACCESSORIES

- A. Fabricate steel-framing accessories from steel sheet, ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of same grade and coating weight used for framing members.

- B. Use Noflex for reinforcing various heights of free standing low walls ranging in height from 3'-0", 4'-0", 5'-0" and 6'-0" high walls. Refer to Noflex website for installation procedures and provide design calculations as part of the Structural Engineers submittal listed in Submittals 1.4 above.

- C. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:
 - 1. Supplementary framing.
 - 2. Bracing, bridging, and solid blocking.
 - 3. Web stiffeners.
 - 4. Anchor clips.
 - 5. End clips.
 - 6. Foundation clips.
 - 7. Gusset plates.
 - 8. Stud kickers, knee braces, and girts.
 - 9. Joist hangers and end closures.
 - 10. Hole reinforcing plates.
 - 11. Backer plates.

2.5 ANCHORS, CLIPS, AND FASTENERS

- A. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123/A 123M.

- B. Anchor Bolts: ASTM F 1554, Grade 36, threaded carbon-steel hex-headed bolts and carbon-steel nuts; and flat, hardened-steel washers; zinc coated by hot-dip process according to ASTM A 153/A 153M, Class C.

- C. Expansion Anchors: Fabricated from corrosion-resistant materials, with capability to sustain,

without failure, a load equal to 5 times design load, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

- D. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 10 times design load, as determined by testing per ASTM E 1190 conducted by a qualified independent testing agency.
- E. Mechanical Fasteners: ASTM C 1513, corrosion-resistant-coated, self-drilling, self-tapping steel drill screws.
 - 1. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.
- F. Welding Electrodes: Comply with AWS standards.

2.6 MISCELLANEOUS MATERIALS

- A. Galvanizing Repair Paint: ASTM A 780.
- B. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, and plasticizing and water-reducing agents, complying with ASTM C 1107, with fluid consistency and 30-minute working time.
- C. Shims: Load bearing, high-density multimonomer plastic, nonleaching.
- D. Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to match width of bottom track or rim track members.

2.7 FABRICATION

- A. Fabricate cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written instructions, and requirements in this Section.
 - 1. Fabricate framing assemblies using jigs or templates.
 - 2. Cut framing members by sawing or shearing; do not torch cut.
 - 3. Fasten cold-formed metal framing members by welding, screw fastening, clinch fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted.
 - a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 - b. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by not less than three exposed screw threads.
 - 4. Fasten other materials to cold-formed metal framing by welding, bolting, or screw fastening, according to Shop Drawings.
- B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.
- C. Fabrication Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
 - 1. Spacing: Space individual framing members no more than plus or minus 1/8 inch from

- plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
2. Squareness: Fabricate each cold-formed metal framing assembly to a maximum out-of-square tolerance of 1/8 inch.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance.
 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Before sprayed fire-resistive materials are applied, attach continuous angles, supplementary framing, or tracks to structural members indicated to receive sprayed fire-resistive materials.
- B. After applying sprayed fire-resistive materials, remove only as much of these materials as needed to complete installation of cold-formed framing without reducing thickness of fire-resistive materials below that are required to obtain fire-resistance rating indicated. Protect remaining fire-resistive materials from damage.
- C. Install load bearing shims or grout between the underside of wall bottom track or rim track and the top of foundation wall or slab at stud or joist locations to ensure a uniform bearing surface on supporting concrete or masonry construction.
- D. Install sealer gaskets to isolate the underside of wall bottom track or rim track and the top of foundation wall or slab at stud or joist locations.

3.3 INSTALLATION, GENERAL

- A. Cold-formed metal framing may be shop or field fabricated for installation, or it may be field assembled.
- B. Install cold-formed metal framing according to AISI's "Standard for Cold-Formed Steel Framing - General Provisions" and to manufacturer's written instructions unless more stringent requirements are indicated.
- C. Install shop- or field-fabricated, cold-formed framing and securely anchor to supporting structure.
 1. Screw, bolt, or weld wall panels at horizontal and vertical junctures to produce flush, even, true-to-line joints with maximum variation in plane and true position between fabricated panels not exceeding 1/16 inch.
- D. Install cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened.
 1. Cut framing members by sawing or shearing; do not torch cut.

2. Fasten cold-formed metal framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing members is not permitted.
 - a. Comply with AWS 01.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 - b. Locate mechanical fasteners and install according to Shop Drawings, and complying with requirements for spacing, edge distances, and screw penetration.
- E. Install framing members in one-piece lengths unless splice connections are indicated for track or tension members.
- F. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.
- G. Do not bridge building expansion and control joints with cold-formed metal framing. Independently frame both sides of joints.
- H. Install insulation, specified in Division 7 Section "Building Insulation," in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.
- I. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's standard punched openings.
- J. Erection Tolerances: Install cold-formed metal framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
 1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

3.4 JOIST INSTALLATION

- A. Install perimeter joist track sized to match joists. Align and securely anchor or fasten track to supporting structure at corners, ends, and spacings indicated on Shop Drawings.
- B. Install joists bearing on supporting frame, level, straight, and plumb; adjust to final position, brace, and reinforce. Fasten joists to both flanges of joist track.
 1. Install joists over supporting frame with a minimum end bearing of 1-1/2 inches.
 2. Reinforce ends and bearing points of joists with web stiffeners, end clips, joist hangers, steel clip angles, or steel-stud sections as indicated on Shop Drawings.
- C. Space joists not more than 2 inches from abutting walls, and as follows:
 1. Joist Spacing: 16 inches.
- D. Frame openings with built-up joist headers consisting of joist and joist track, nesting joists, or another combination of connected joists if indicated.
- E. Install joist reinforcement at interior supports with single, short length of joist section located directly over interior support, with lapped joists of equal length to joist reinforcement, or as

indicated on Shop Drawings.

1. Install web stiffeners to transfer axial loads of walls above.
- F. Install bridging at intervals indicated on Shop Drawings. Fasten bridging at each joist intersection as follows:
1. Bridging: Joist-track solid blocking of width and thickness indicated, secured to joist webs.
 2. Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and joist-track solid blocking of width and thickness indicated. Fasten flat straps to bottom flange of joists and secure solid blocking to joist webs.
- G. Secure joists to load-bearing interior walls to prevent lateral movement of bottom flange.
- H. Install miscellaneous joist framing and connections, including web stiffeners, closure pieces, clip angles, continuous angles, hold-down angles, anchors, and fasteners, to provide a complete and stable joist-framing assembly.

3.5 FIELD QUALITY CONTROL

- A. Testing: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Field and shop welds will be subject to testing and inspecting.
- C. Testing agency will report test results promptly and in writing to Contractor and Architect.
- D. Remove and replace work where test results indicate that it does not comply with specified requirements.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.6 REPAIRS AND PROTECTION

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed metal framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer that ensure that cold-formed metal framing is without damage or deterioration at time of Substantial Completion.

END OF SECTION 054000

SECTION 099113 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and the application of paint systems on the following exterior substrates:
 - 1. Concrete.
 - 2. Concrete masonry units (CMU).
 - 3. Steel.
 - 4. Galvanized metal.
 - 5. Aluminum (not anodized or otherwise coated).

1.2 DEFINITIONS

- A. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. Samples: For each type of paint system and each color and gloss of topcoat.
- C. Product List: For each product indicated. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Paint: 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

1.5 QUALITY ASSURANCE

- A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
 - a. Vertical and Horizontal Surfaces: Provide samples of at least 10 sq. ft. (9 sq. m).

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- b. Other Items: Architect will designate items or areas required.
2. Final approval of color selections will be based on mockups.
 - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

PART 2 - PRODUCTS

2.1 PAINT, GENERAL

A. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. Colors: As selected by Architect from manufacturer's full range

2.2 BLOCK FILLERS

A. Interior/Exterior Latex Block Filler: MPI #4.

1. VOC Content: E Range of E2.

2.3 PRIMERS/SEALERS

A. Exterior Block Sealer: Stainguard-WB, High performance water, oil and graffiti resistant treatment.

1. Clear graffiti seal treatment system
2. Manufactured by Chemical Products, Inc.

B. Alkali-Resistant Primer: MPI #3.

1. VOC Content: E Range of E2

C. Bonding Primer (Water Based): MPI #17.

1. VOC Content: E Range of E2

D. Bonding Primer (Solvent Based): MPI #69.

1. VOC Content: E Range of E2

2.4 METAL PRIMERS

- A. Alkyd Anticorrosive Metal Primer: MPI #79.
 - 1. VOC Content: E Range of E2.
- B. Quick-Drying Alkyd Metal Primer: MPI #76.
 - 1. VOC Content: E Range of E2
- C. Cementitious Galvanized-Metal Primer: MPI #26.
 - 1. VOC Content: E Range of E1.
- D. Waterborne Galvanized-Metal Primer: MPI #134.
 - 1. VOC Content: E Range of E2
 - 2. Environmental Performance Rating: EPR 2

2.5 EXTERIOR LATEX PAINTS

- A. Exterior Latex (Flat): MPI #10 (Gloss Level 1).
 - 1. VOC Content: E Range of E2
- B. Exterior Latex (Semigloss): MPI #11 (Gloss Level 5).
 - 1. VOC Content: E Range of E2
- C. Exterior Latex (Gloss): MPI #119 (Gloss Level 6, except minimum gloss of 65 units at 60 deg).
 - 1. VOC Content: E Range of E2

2.6 EXTERIOR ALKYD PAINTS

- A. Exterior Alkyd Enamel (Flat): MPI #8 (Gloss Level 1).
 - 1. VOC Content: E Range of E1.
- B. Exterior Alkyd Enamel (Semigloss): MPI #94 (Gloss Level 5).
 - 1. VOC Content: E Range of E2.
- C. Exterior Alkyd Enamel (Gloss): MPI #9 (Gloss Level 6).
 - 1. VOC Content: E Range of E2.

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2.7 QUICK-DRYING ENAMELS

- A. Quick-Drying Enamel (Semigloss): MPI #81 (Gloss Level 5).
 - 1. VOC Content: E Range of E2

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Concrete: 12 percent.
 - 2. Masonry (Clay and CMU): 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
 - 1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION AND APPLICATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.
- C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- D. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- E. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.3 EXTERIOR PAINTING SCHEDULE

A. Concrete Substrates, Nontraffic Surfaces:

1. Latex System: MPI EXT 3.1A.
 - a. Prime Coat: Exterior latex matching topcoat.
 - b. Intermediate Coat: Exterior latex matching topcoat.
 - c. Topcoat: Exterior latex semigloss
2. Latex Over Alkali-Resistant Primer System: MPI EXT 3.1K.
 - a. Prime Coat: Alkali-resistant primer.
 - b. Intermediate Coat: Exterior latex matching topcoat.
 - c. Topcoat: Exterior latex semigloss

B. Concrete Substrates, Traffic Surfaces:

1. Latex Floor Paint System: MPI EXT 3.2A.
 - a. Prime Coat: Interior/exterior latex floor and porch paint (low gloss).
 - b. Intermediate Coat: Interior/exterior latex floor and porch paint (low gloss).
 - c. Topcoat: Interior/exterior latex floor and porch paint (low gloss).
2. Alkyd Floor Enamel System: MPI EXT 3.2D.
 - a. Prime Coat: Exterior/interior alkyd floor enamel (gloss).
 - b. Intermediate Coat: Exterior/interior alkyd floor enamel (gloss).
 - c. Topcoat: Exterior/interior alkyd floor enamel (gloss).
3. Clear Sealer System: MPI EXT 3.2G.
 - a. Prime Coat: Interior/exterior clear concrete floor sealer (solvent based).
 - b. Intermediate Coat: Interior/exterior clear concrete floor sealer (solvent based).
 - c. Topcoat: Interior/exterior clear concrete floor sealer (solvent based).
4. Water-Based Clear Sealer System: MPI EXT 3.2H.
 - a. Prime Coat: Interior/exterior clear concrete floor sealer (water based).
 - b. Intermediate Coat: Interior/exterior clear concrete floor sealer (water based).
 - c. Topcoat: Interior/exterior clear concrete floor sealer (water based).

C. CMU Substrates:

1. Latex System: MPI EXT 4.2A.
 - a. Prime Coat: Interior/exterior latex block filler.
 - b. Intermediate Coat: Exterior latex matching topcoat.
 - c. Topcoat: Exterior latex semigloss
2. Latex Over Alkali-Resistant Primer System: MPI EXT 4.2L.

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- a. Prime Coat: Alkali-resistant primer.
 - b. Intermediate Coat: Exterior latex matching topcoat.
 - c. Topcoat: Exterior latex semigloss
- D. Steel Substrates: exterior metal siding
1. Alkyd System: MPI EXT 5.1D.
 - a. Prime Coat: Alkyd anticorrosive metal primer.
 - b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
 - c. Topcoat: Exterior alkyd enamel semigloss
- E. Galvanized-Metal Substrates:
1. Latex System: MPI EXT 5.3A.
 - a. Prime Coat: Cementitious galvanized-metal primer.
 - b. Intermediate Coat: Exterior latex matching topcoat.
 - c. Topcoat: Exterior latex semigloss
 2. Latex Over Water-Based Primer System: MPI EXT 5.3H.
 - a. Prime Coat: Waterborne galvanized-metal primer.
 - b. Intermediate Coat: Exterior latex matching topcoat.
 - c. Topcoat: Exterior latex semigloss
 3. Alkyd System: MPI EXT 5.3B.
 - a. Prime Coat: Cementitious galvanized-metal primer.
 - b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
 - c. Topcoat: Exterior alkyd enamel semigloss

END OF SECTION 099113

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and the application of paint systems on [interior substrates.] [the following interior substrates:]
1. Concrete.
 2. Concrete masonry units (CMU).
 3. Steel.
 4. Galvanized metal.
 5. Wood.
 6. Gypsum board.
 7. ASJ insulation covering.

1.2 DEFINITIONS

- A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- C. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- D. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- E. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- F. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- G. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Paint: 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

1.5 QUALITY ASSURANCE

- A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
 - a. Vertical and Horizontal Surfaces: Provide samples of at least 10 sq. ft. (9 sq. m).
 - b. Other Items: Architect will designate items or areas required.
 - 2. Final approval of color selections will be based on mockups.
 - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to products listed in other Part 2 articles for the paint category indicated.
- B. Basis of design products listed in the product sections are by the Sherwin Williams Co. unless otherwise noted. Other products from the listed manufacturers will be considered equivalent products provided they meet the same MPI standards as the basis of design product for the specified application.
- C. Equivalent manufacturers include listed manufacturers. Other manufacturers need prior approval per the substitution section 012500 of the specification.
 - 1. Benjamin Moore
 - 2. Diamond Vogel
 - 3. Glidden
 - 4. ICI Devco Coatings
 - 5. PPG Architectural Coatings
 - 6. Pratt & Lambert Paints
 - 7. Drylok
 - 8. Thoro Consumer Products.

2.2 PAINT, GENERAL

- A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."
- B. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

C. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction

1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 150 g/L.
3. Dry-Fog Coatings: 400 g/L.
4. Primers, Sealers, and Undercoaters: 200 g/L.
5. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
6. Zinc-Rich Industrial Maintenance Primers: 340 g/L.
7. Pretreatment Wash Primers: 420 g/L.
8. Floor Coatings: 100 g/L.
9. Shellacs, Clear: 730 g/L.
10. Shellacs, Pigmented: 550 g/L.

D. Low-Emitting Materials: Interior paints and coatings shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

E. Colors: As selected by Architect from manufacturer's full range

2.3 BLOCK FILLERS

A. Interior/Exterior Latex Block Filler: MPI #4.

1. VOC Content: E Range of E2.

B. Interior/Exterior Epoxy Block Filler: MPI #116.

1. VOC Content: E Range of E2.

2.4 PRIMERS/SEALERS

A. Interior Latex Primer/Sealer: MPI #50.

1. VOC Content: E Range of E1.

2.5 METAL PRIMERS

A. Quick-Drying Alkyd Metal Primer: MPI #76.

1. VOC Content: E Range of E1.

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INTERIOR PAINTING
099123 - 4

2.6 LATEX PAINTS

- A. Interior Latex (Flat): MPI #53 (Gloss Level 1).
 - 1. VOC Content: E Range of E1.
- B. Interior Latex (Eggshell): MPI #52 (Gloss Level 3).
 - 1. VOC Content: E Range of E1.
- C. Interior Latex (Semigloss): MPI #54 (Gloss Level 5).
 - 1. VOC Content: E Range of E1.
- D. EPOXY PAINT
 - 1. Interior/Exterior Epoxy (water based): MPI #115

2.6 QUICK-DRYING ENAMELS

- A. Quick-Drying Enamel (Semigloss): MPI #81 (Gloss Level 5).
 - 1. VOC Content: E Range of E1.

2.8 ALKYD PAINTS

- A. Interior Alkyd (Semigloss): MPI #47 (Gloss Level 5).
 - 1. VOC Content: E Range of E2.
 - 2. Environmental Performance Rating: EPR 1.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Concrete: 12 percent.
 - 2. Masonry (Clay and CMU): 12 percent.
 - 3. Wood: 15 percent.
 - 4. Gypsum Board: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

- D. Proceed with coating application only after unsatisfactory conditions have been corrected.
 - 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
- B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 CLEANING AND PROTECTION

- A. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- B. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR PAINTING SCHEDULE

- A. CMU Substrates:
 - 1. Latex System: MPI INT 4.2A. (Use For all areas except toilet rooms).
 - a. Prime Coat: Interior/exterior latex block filler.
 - b. Intermediate Coat: Interior latex matching topcoat.
 - c. Topcoat: Interior latex (semigloss).

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INTERIOR PAINTING
099123 - 6

2. Epoxy System: MPI INT 4.2G. (Use for toilet rooms).
 - a. Prime Coat: Interior/exterior epoxy block filler.
 - b. Intermediate Coat: Interior alkyd matching topcoat.
 - c. Topcoat: Interior/Exterior epoxy (water based).

- B. Steel Substrates:
 1. Quick-Drying Enamel System: MPI INT 5.1A.
 - a. Prime Coat: Quick-drying alkyd metal primer.
 - b. Intermediate Coat: Quick-drying enamel matching topcoat.
 - c. Topcoat: Quick-drying enamel (semigloss).

- C. Gypsum Board Substrates (Ceilings and Soffits):
 1. Latex System: MPI INT 9.2A.
 - a. Prime Coat: Interior latex primer/sealer.
 - b. Intermediate Coat: Interior latex matching topcoat.
 - c. Topcoat: Interior latex (flat).

- D. Gypsum Board Substrates (Walls):
 1. Latex System: MPI INT 9.2A.
 - a. Prime Coat: Interior latex primer/sealer.
 - b. Intermediate Coat: Interior latex matching topcoat.
 - c. Topcoat: Interior latex (eggshell).

- E. Wood Substrates: Including wood trim, wood-based panel products.
 1. Latex System:
 - a. Prime Coat: Primer, latex, for interior wood, MPI #39.
 - b. Intermediate Coat: Latex, interior, matching topcoat.
 - c. Topcoat: Latex, interior, (Gloss Level 4), MPI #43.

END OF SECTION 099123

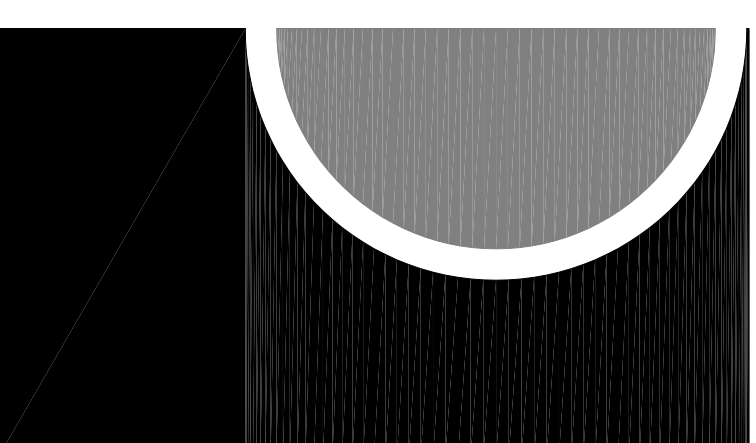
City of New Baltimore

Department of Public Service Building Addition

Department of Public Service

35389 Cricklewood, New Baltimore, MI 48047

PARTNERS



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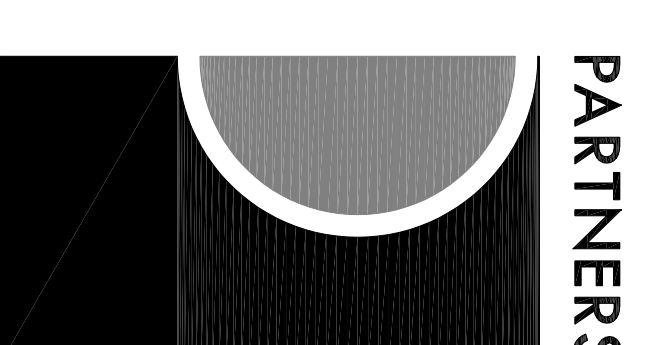
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Rochester Hills, MI 48306
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currentdmeng@gmail.com

List of Drawings

Sheet Number	Sheet Title
A0-00	Cover Sheet
Civil	
C-1	Grading, Utility & Demolition Plans
C-2	Soil Erosion Notes & Details City of New Baltimore - Standard Storm Sewer Details City of New Baltimore - Standard Sanitary Sewer Details City of New Baltimore - Standard Water Main Details
Architectural	
A0-01	General Project Information
A0-02	Code Plan
A0-03	Schedules, Details
A1-01	Demo Floor Plan
A3-01	New Work Floor Plan
A3-02	Roof Plan, Details
A4-01	Reflected Ceiling Plans, Interior Elevations
A5-01	Exterior Elevations
A6-01	Wall Sections, Details
Structural	
S1-01	Foundation Plan
S2-00	General Notes
S2-01	Details
Mechanical	
MD-101	Demolition Floor Plan - Plumbing
MD-201	Demolition Floor Plan - HVAC
M1-01	Floor Plan - Plumbing
M2-01	Floor Plan - HVAC
M2-02	Mechanical Details & Schedules
M3-01	Mechanical Specification
Electrical	
E0-01	Specifications, Diagrams, Schedules
E1-01	Electrical Demolition Plan
E3-01	Power Plan
E4-01	Lighting Plan



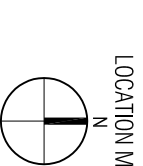
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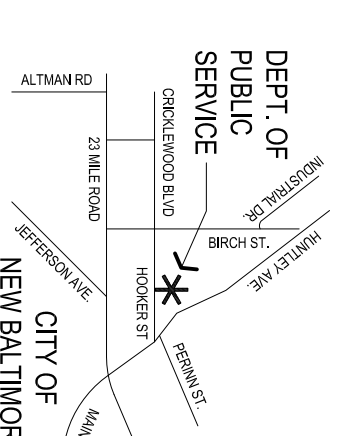
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LOCATION MAP



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PROJECT NAME

Department of
Public Service
Building Addition

35389 Cricklewood
New Baltimore, MI 48047

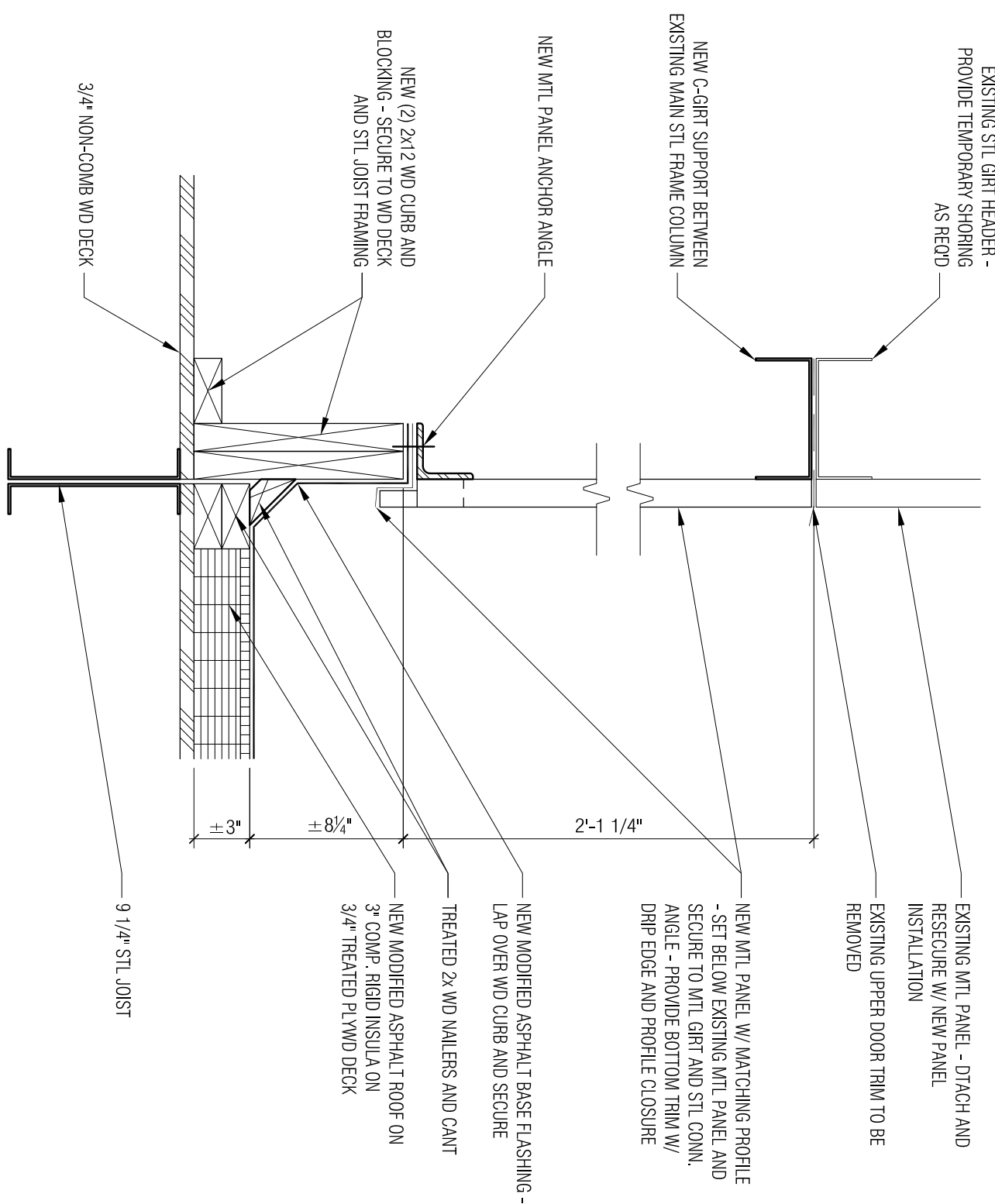
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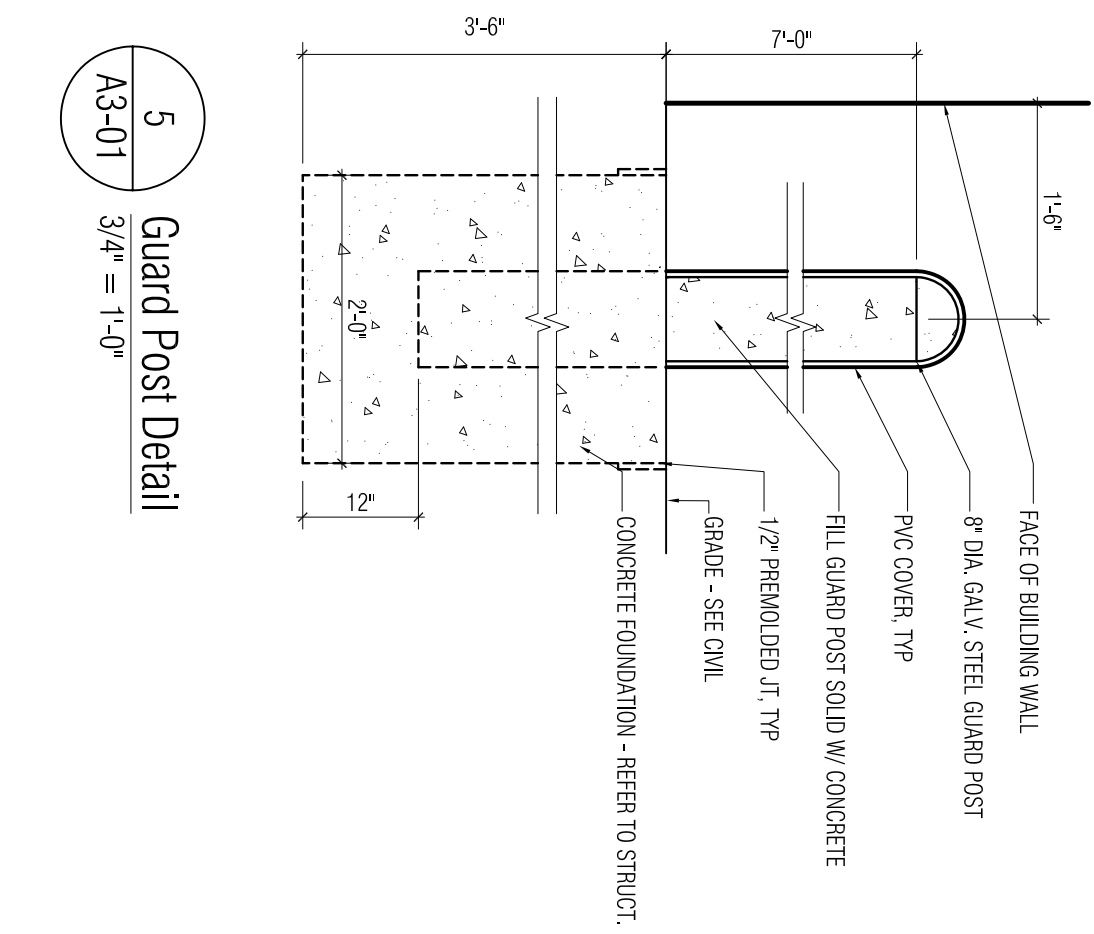
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OWNER REVIEW MTG 5/8/2013
BIDS/CONSTRUCTION 5/17/2013
ADDENDUM #1 5/29/2013

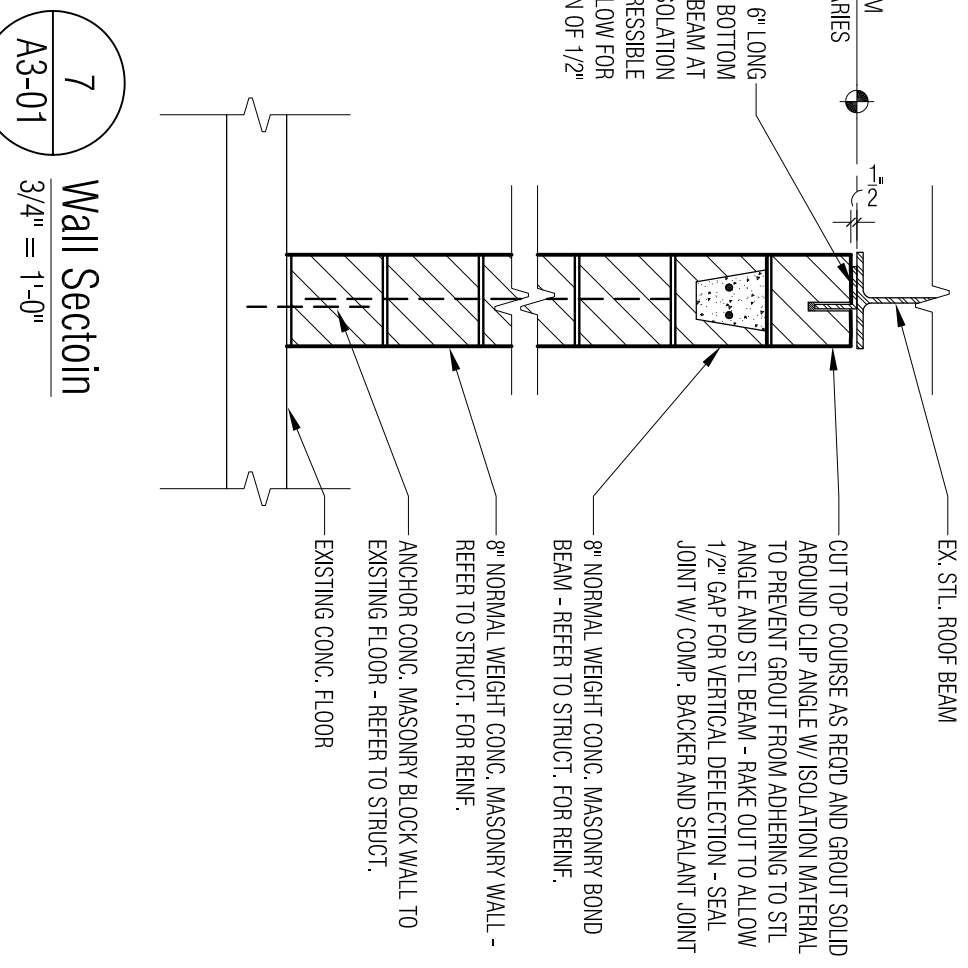
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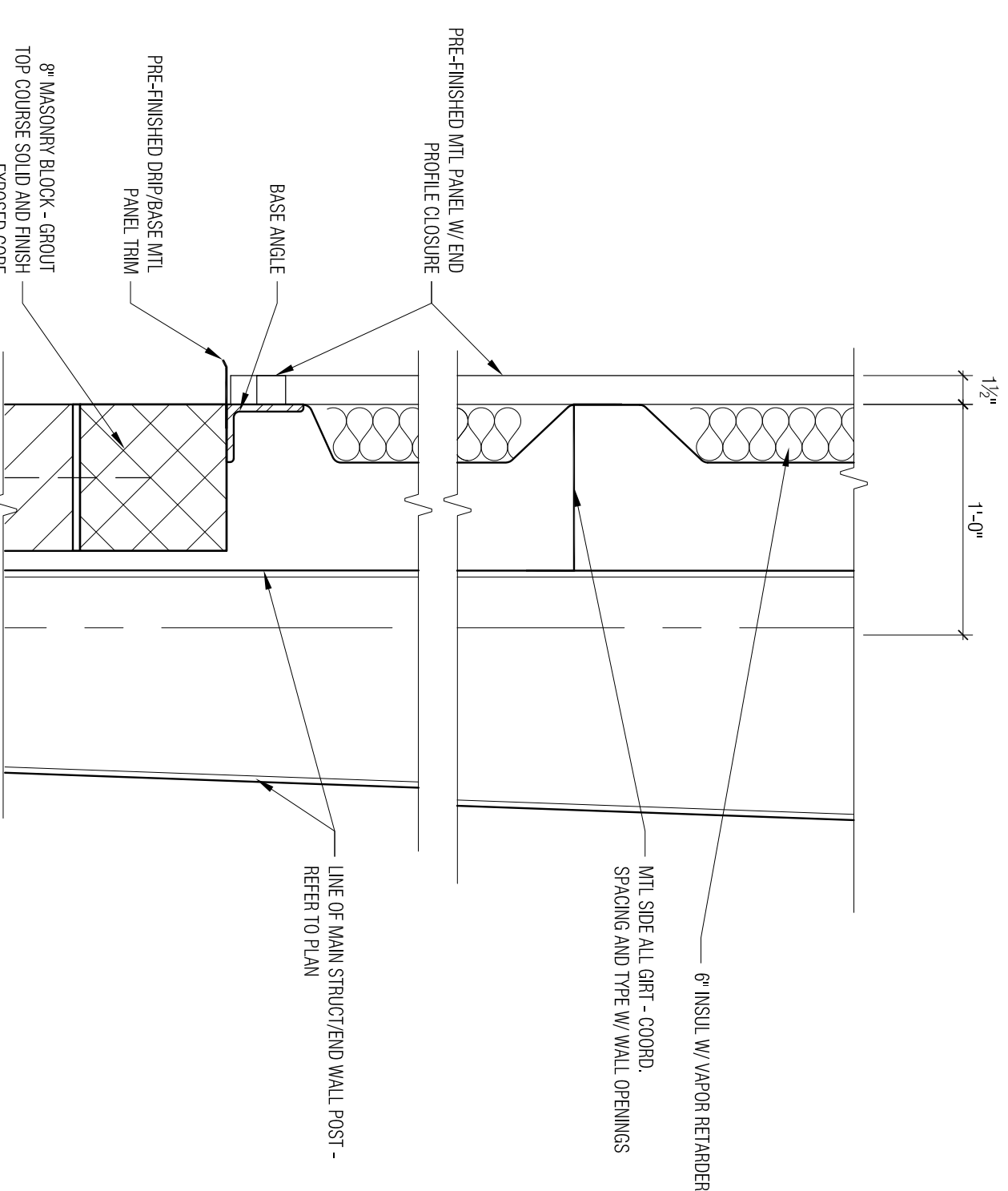
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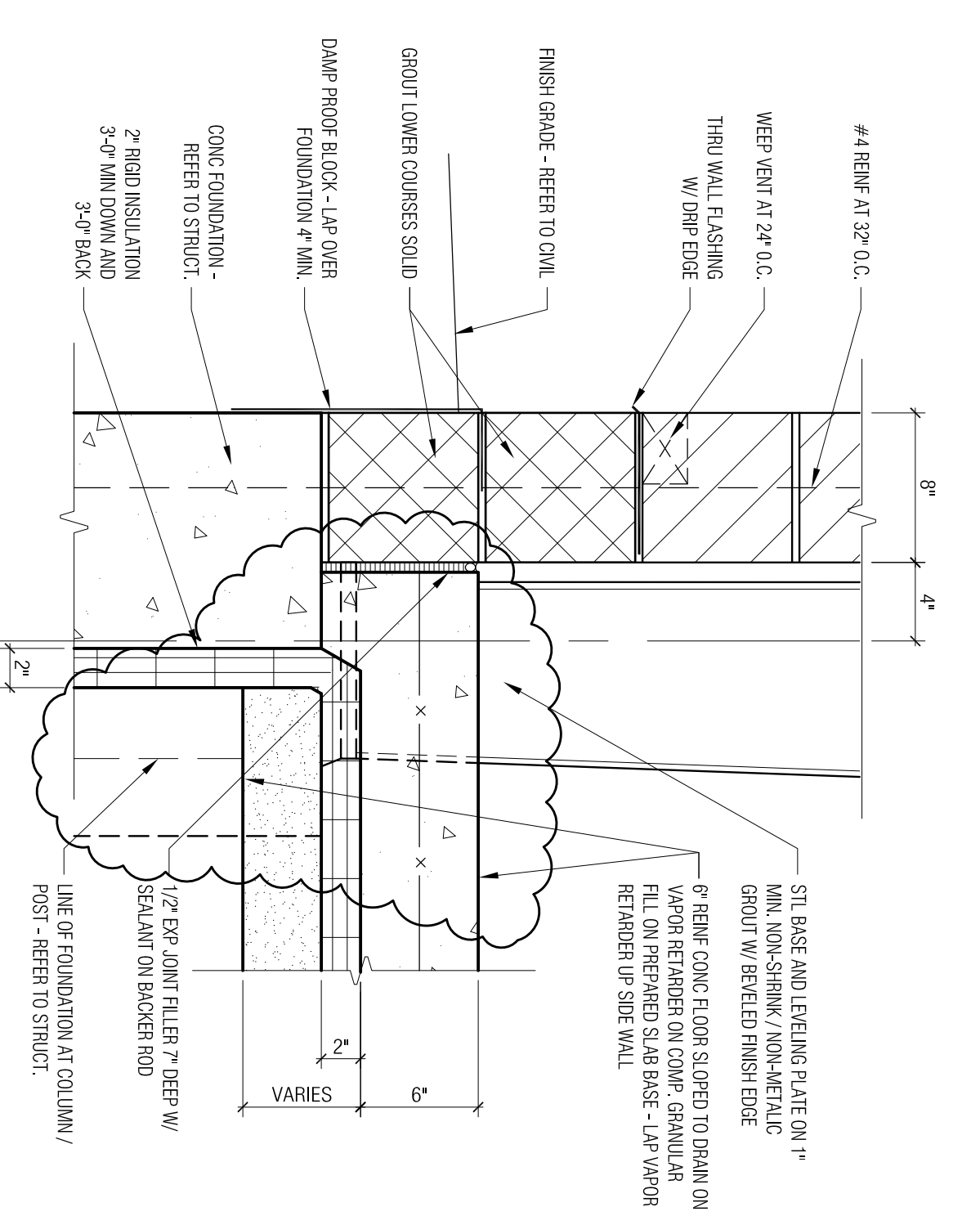
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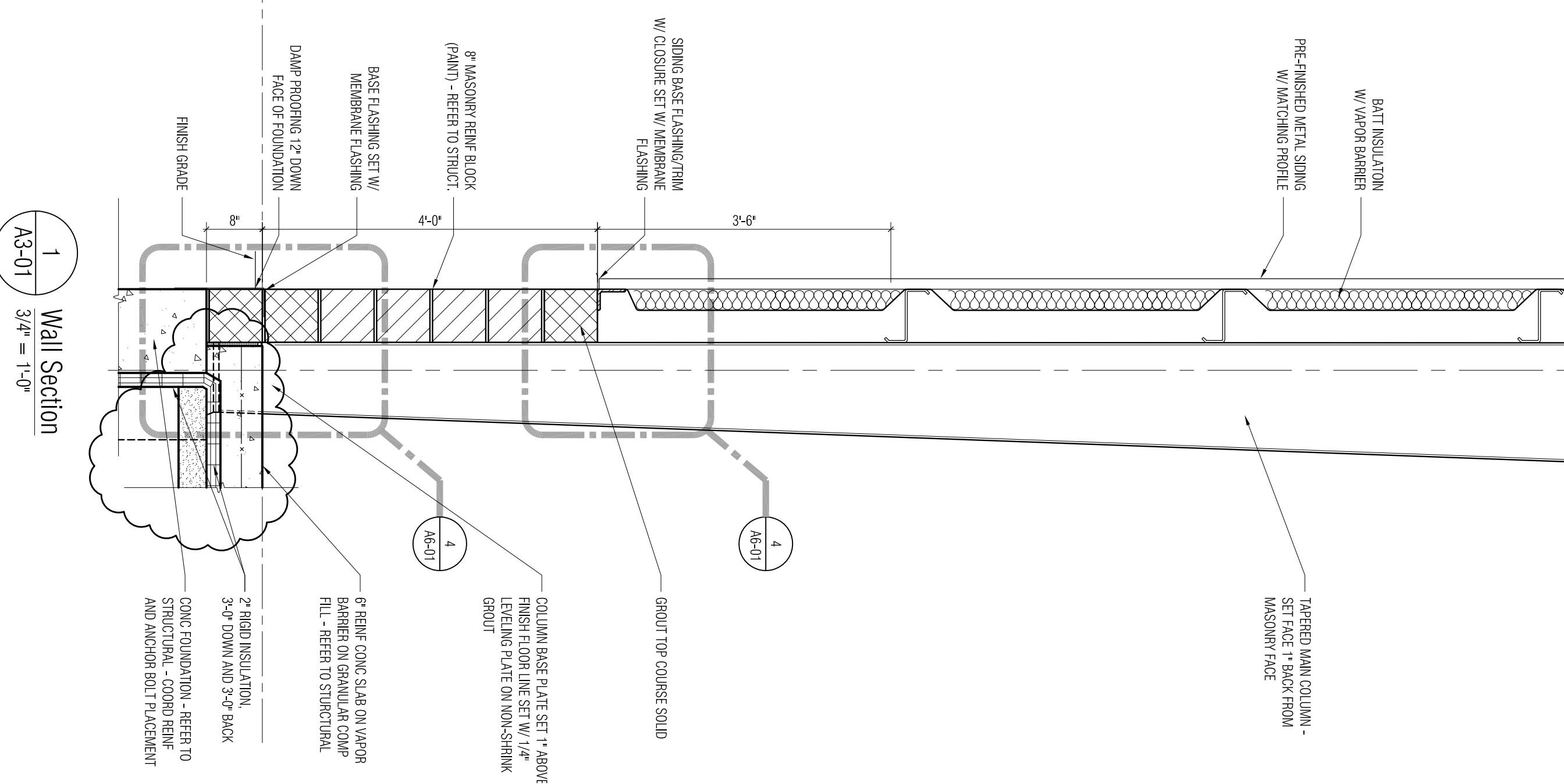
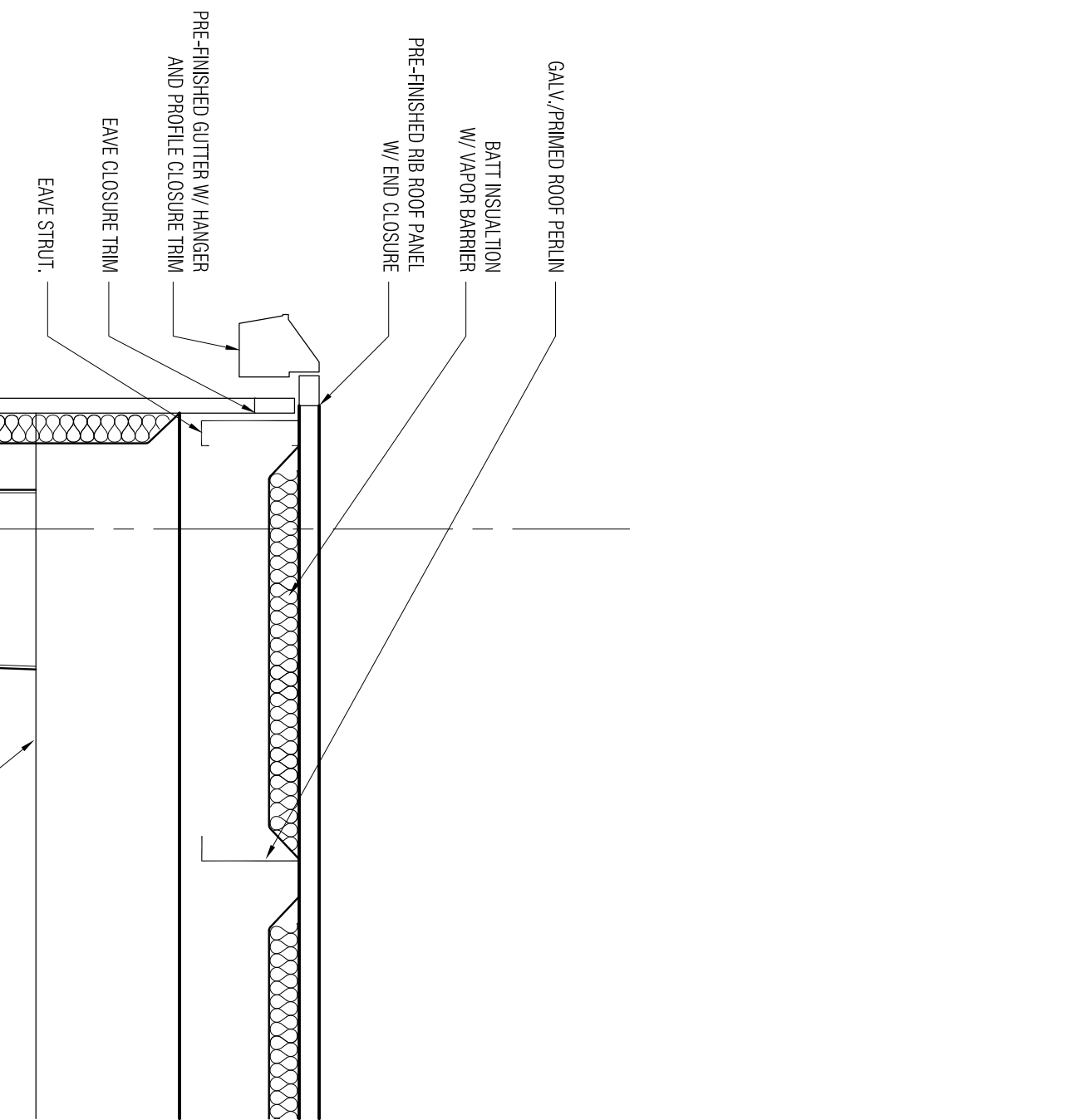
7 Wall Section
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3 Section at Roof
 1 1/2" = 1'-0"



4 Wall Section Detail
 1 1/2" = 1'-0"

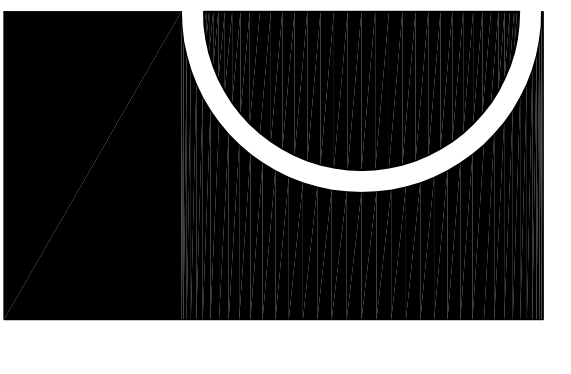


1 Wall Section
 3/4" = 1'-0"

2 Wall Section
 3/4" = 1'-0"

4 Wall Section Detail
 1 1/2" = 1'-0"

6 Section Detail at Overhead Door
 1 1/2" = 1'-0"



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 EMAIL: shymanski@shymanski.com

KEY PLAN

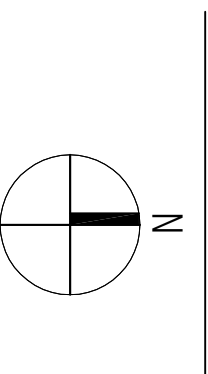
OWNER
CITY OF NEW BALTIMORE

PROJECT NAME
Department of Public Service Building Addition

35389 Crichtonwood
 New Baltimore, MI 48047

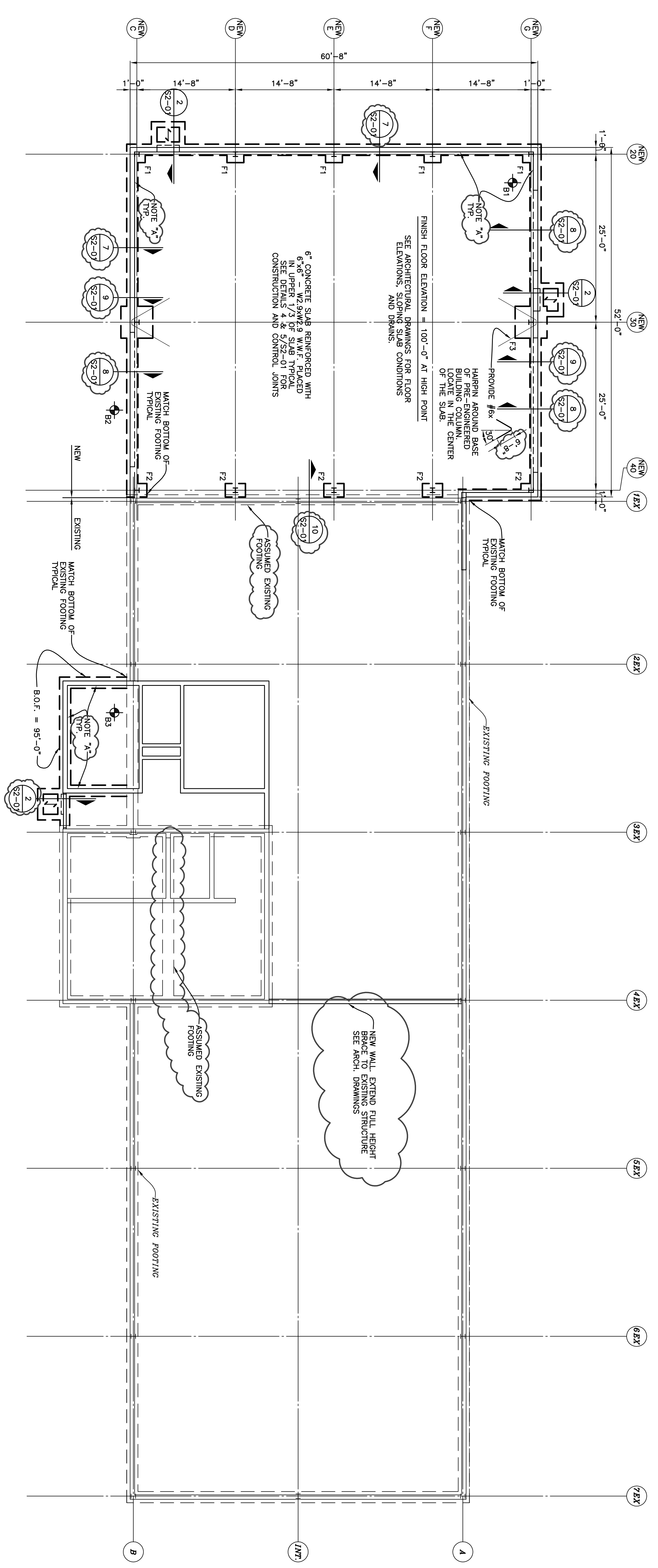
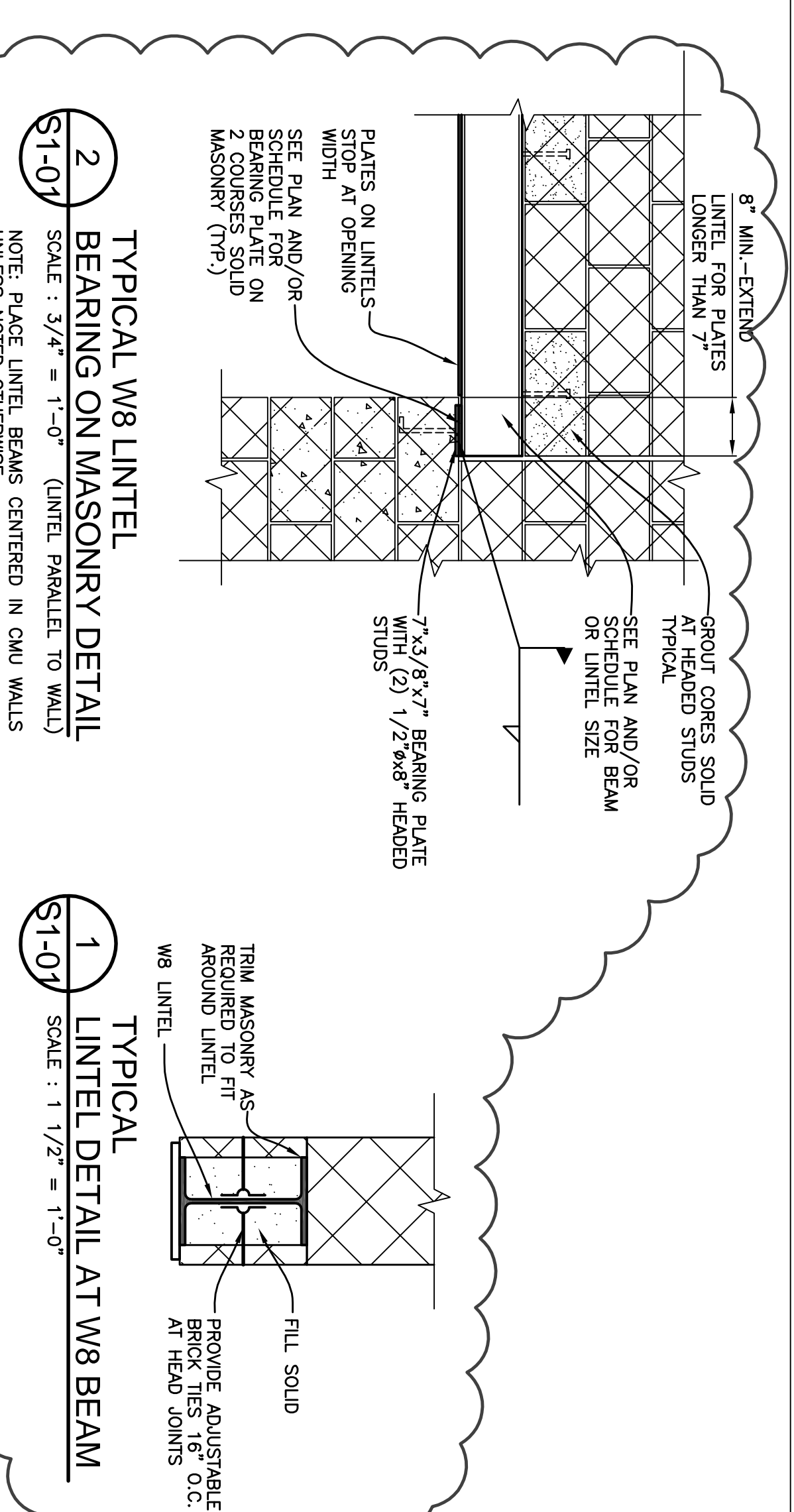
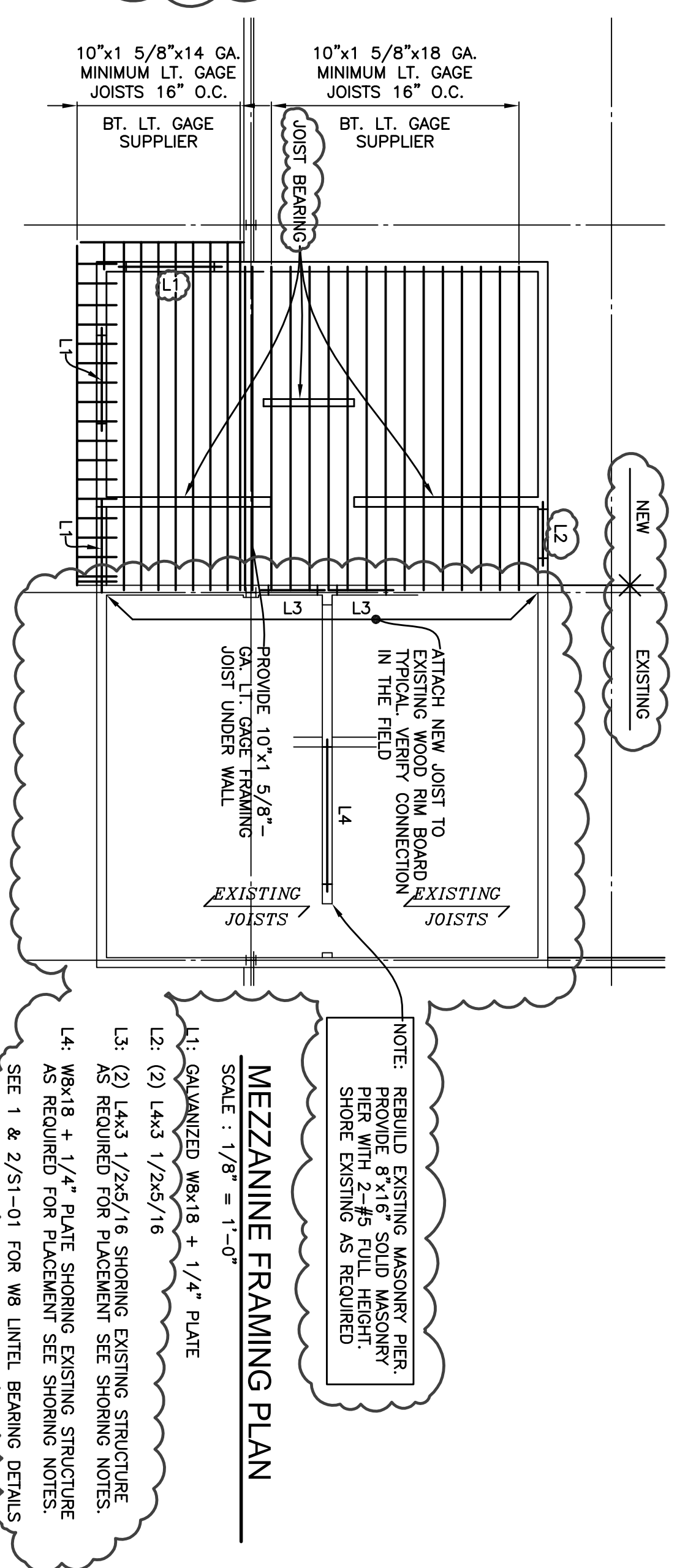
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 ADDENDUM #1 5/29/2013



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FOUNDATION PLAN

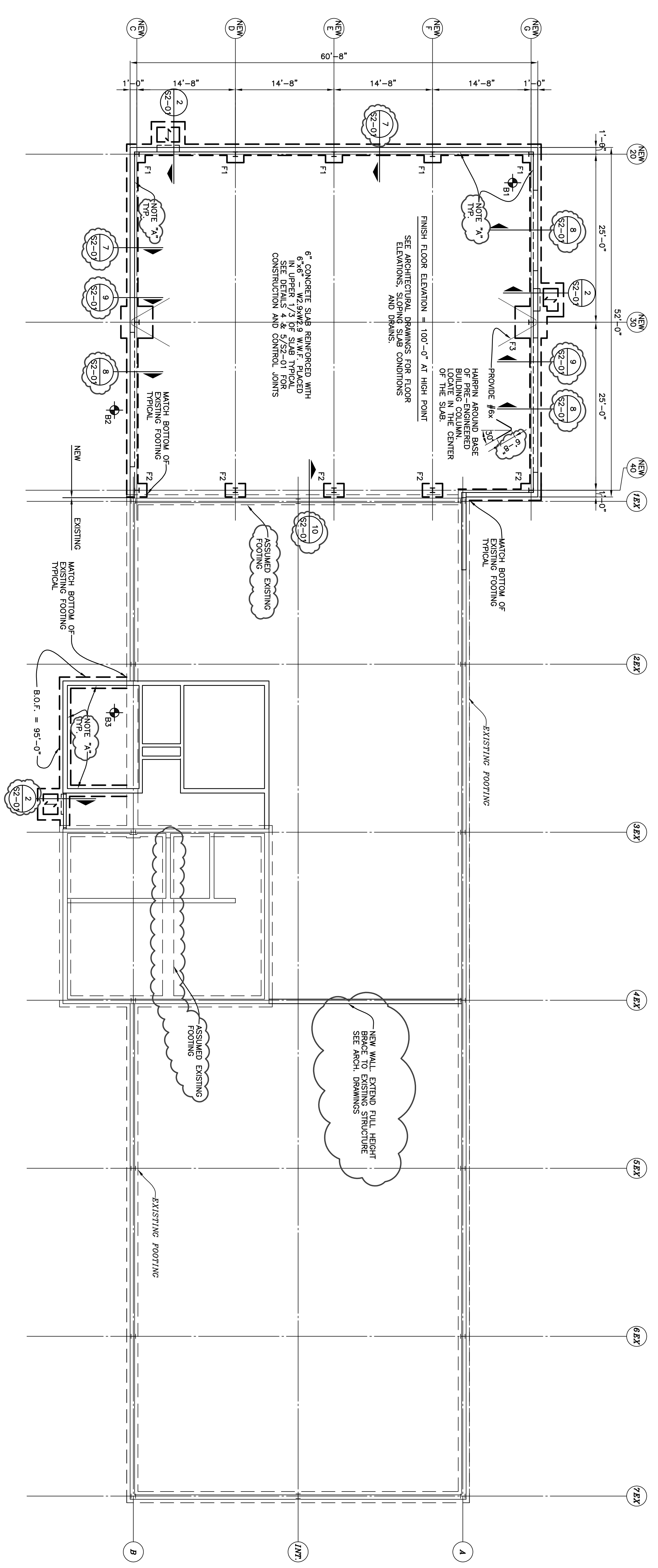
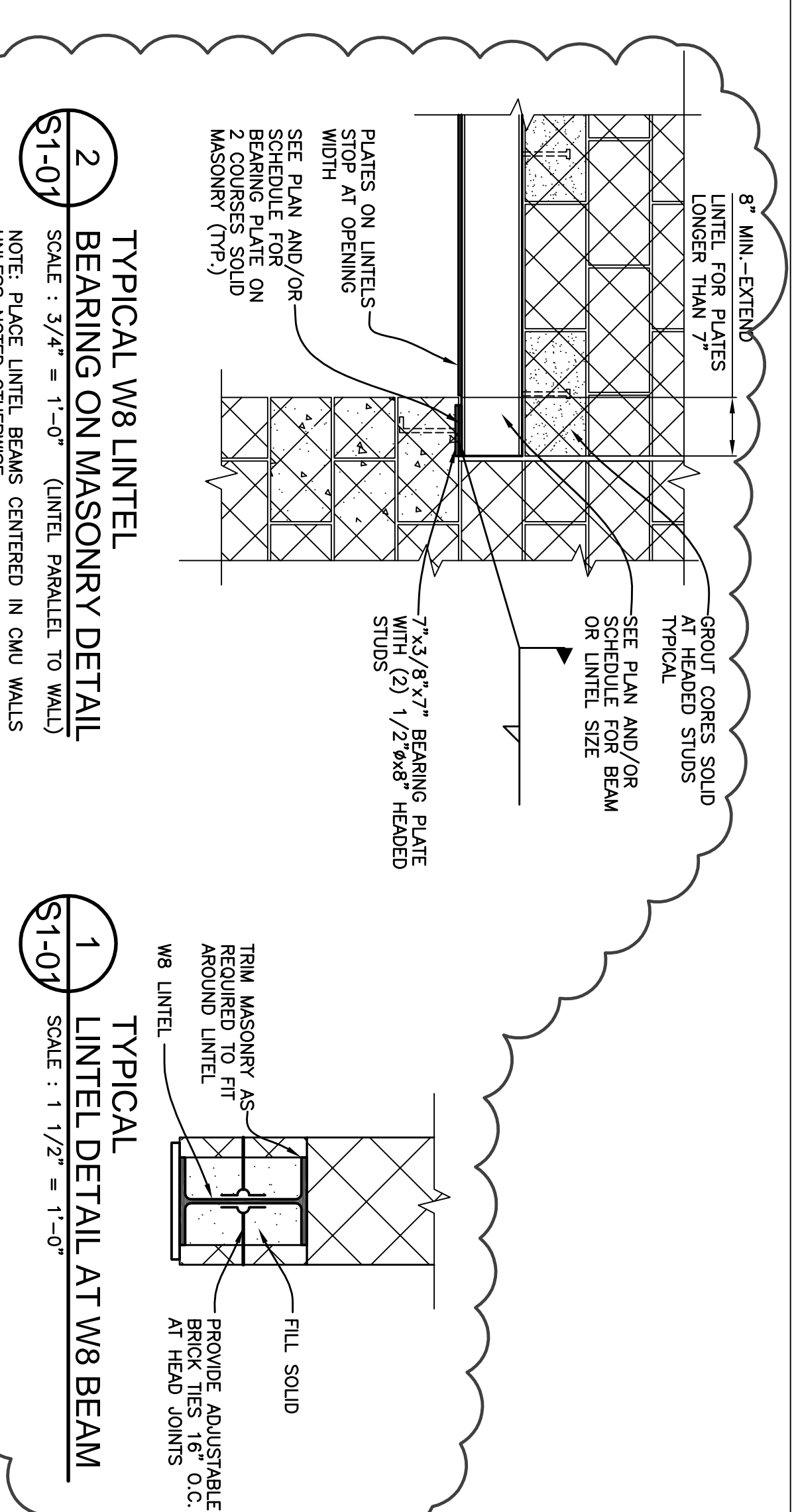
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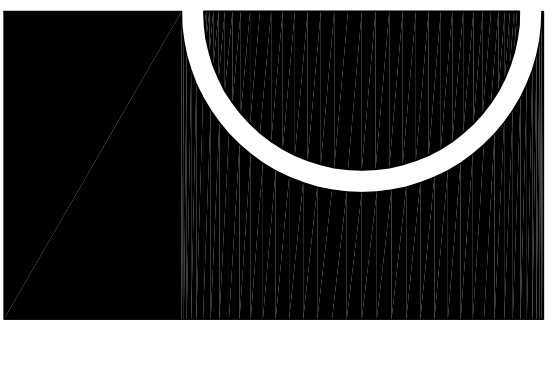


MEZZANINE FRAMING PLAN
 SCALE: 1/8" = 1'-0"

NOTE: REPAIR EXISTING MASONRY PIER WITH 2-#5 FULL HEIGHT. SHORE EXISTING AS REQUIRED.

1: QUANTIZED W8x18 + 1/4" PLATE
 2: (2) L4x3 1/2x5/16
 3: (2) L4x3 1/2x5/16 SHORING EXISTING STRUCTURE AS REQUIRED FOR PLACEMENT SEE SHORING NOTES.
 4: W8x18 + 1/4" PLATE SHORING EXISTING STRUCTURE AS REQUIRED FOR PLACEMENT SEE SHORING NOTES. SEE 1 & 2/S1-01 FOR W8 LTEL BEARING DETAILS





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KEY PLAN

OWNER

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PROJECT NAME

**Department of
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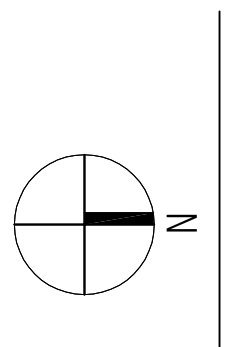
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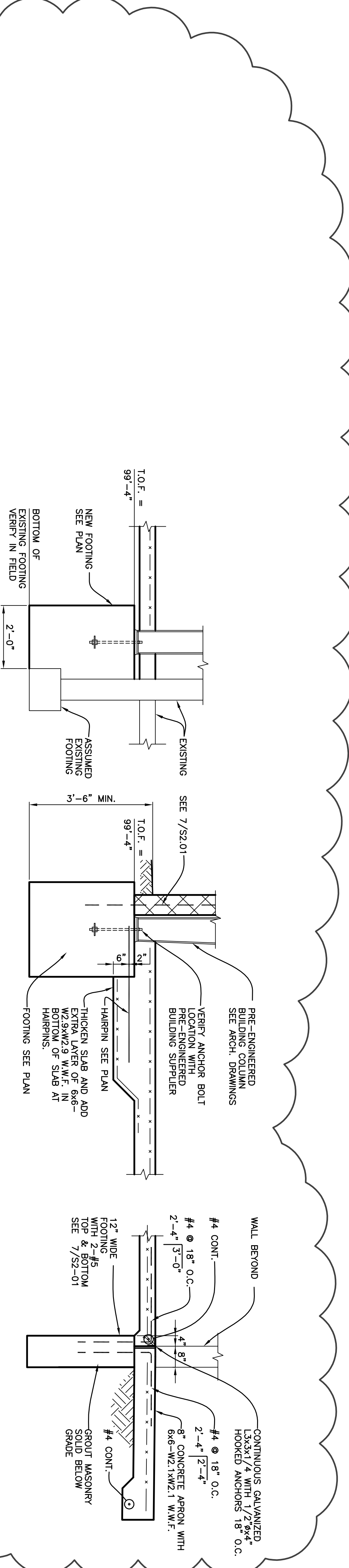
ISSUES / REVISIONS

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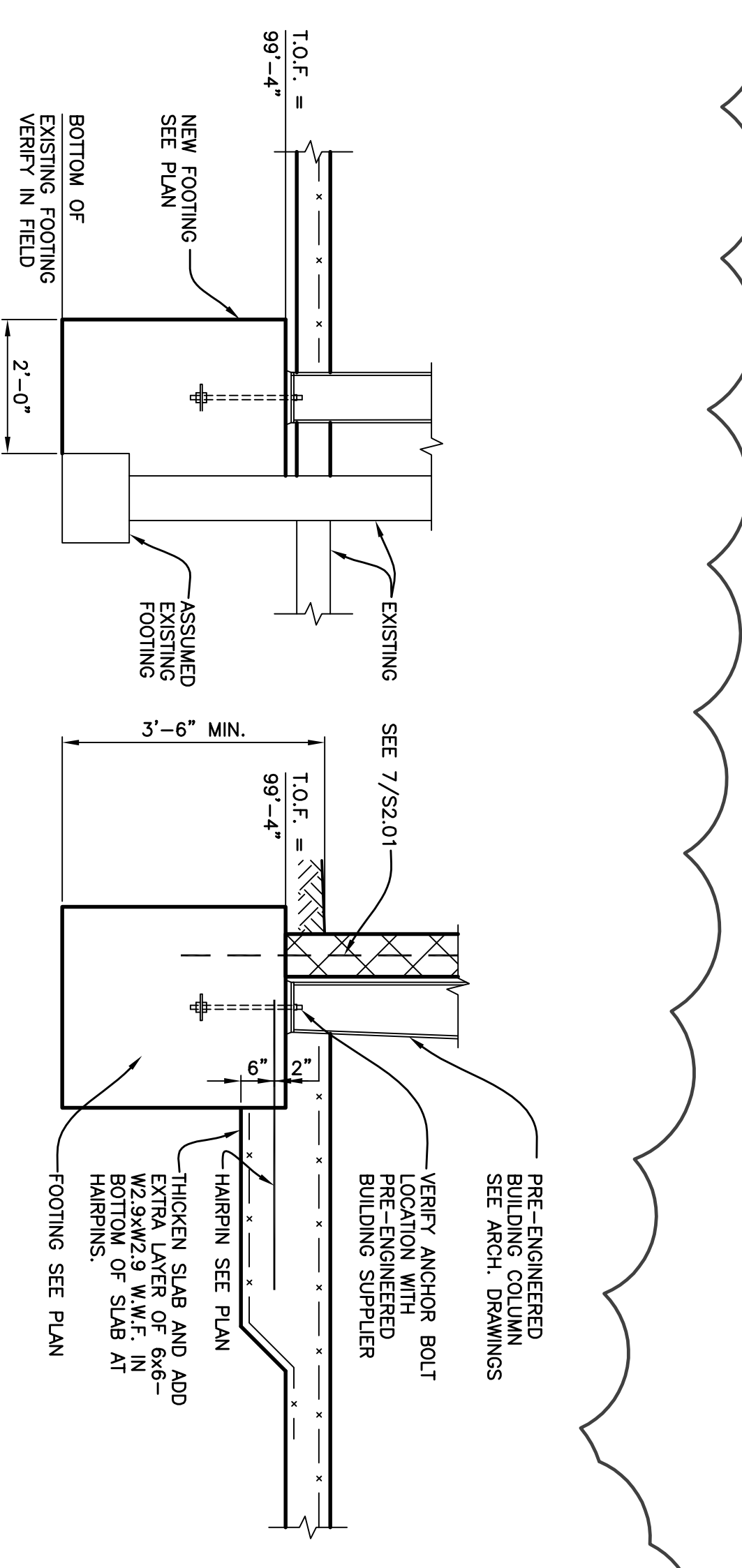


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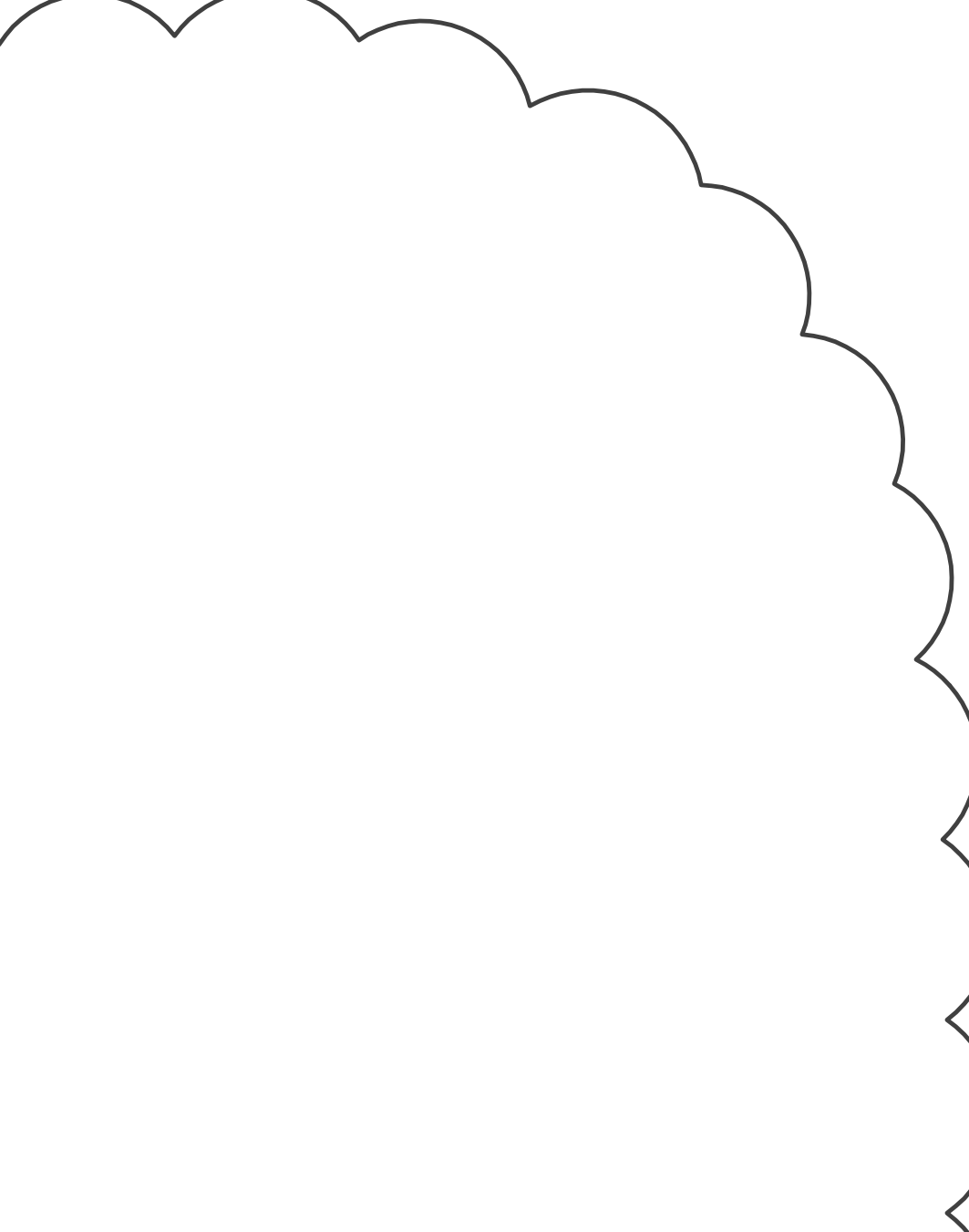
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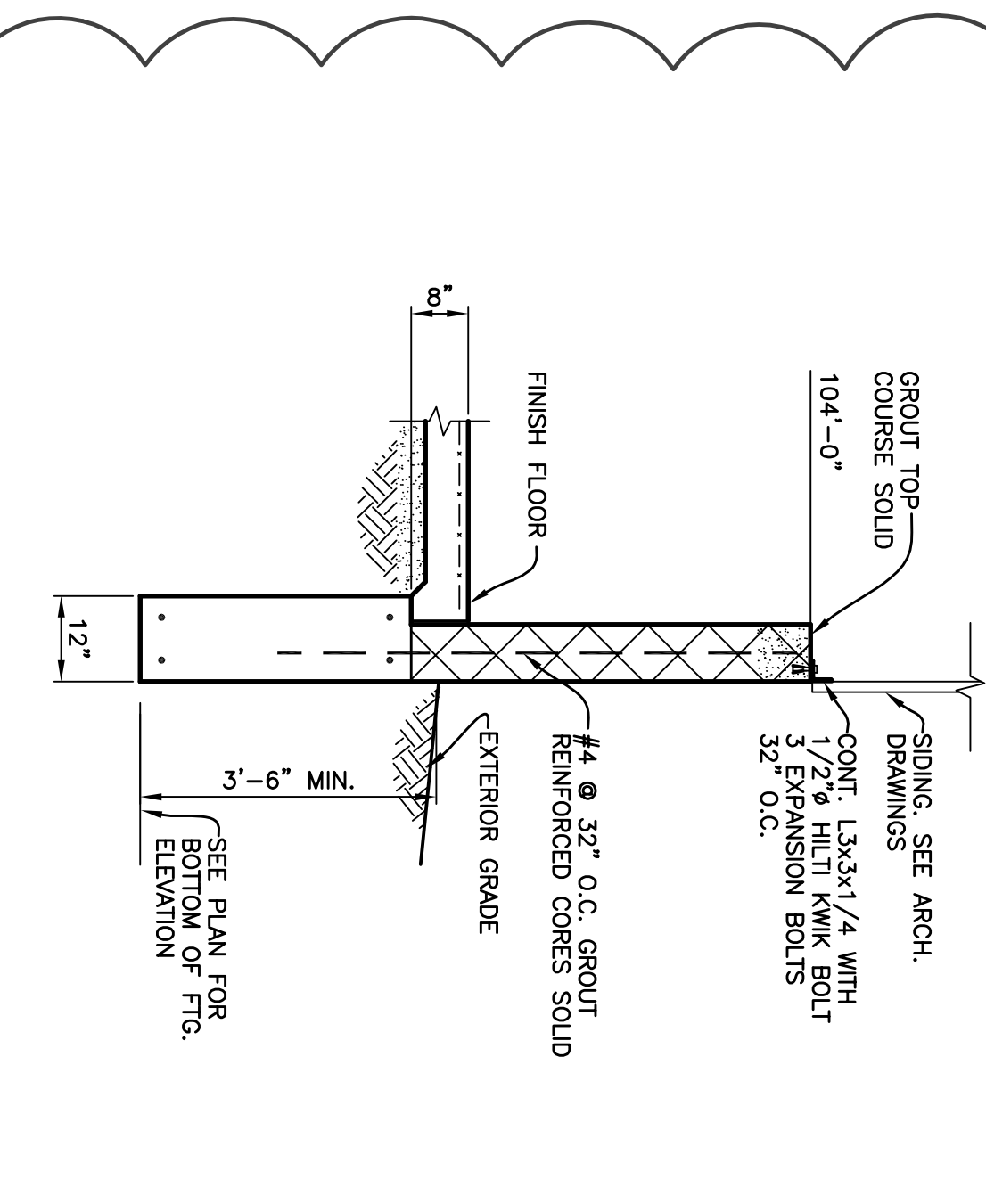
**8 FOUNDATION DETAIL
 AT OVERHEAD DOORS**
 SCALE : 1/2" = 1'-0"



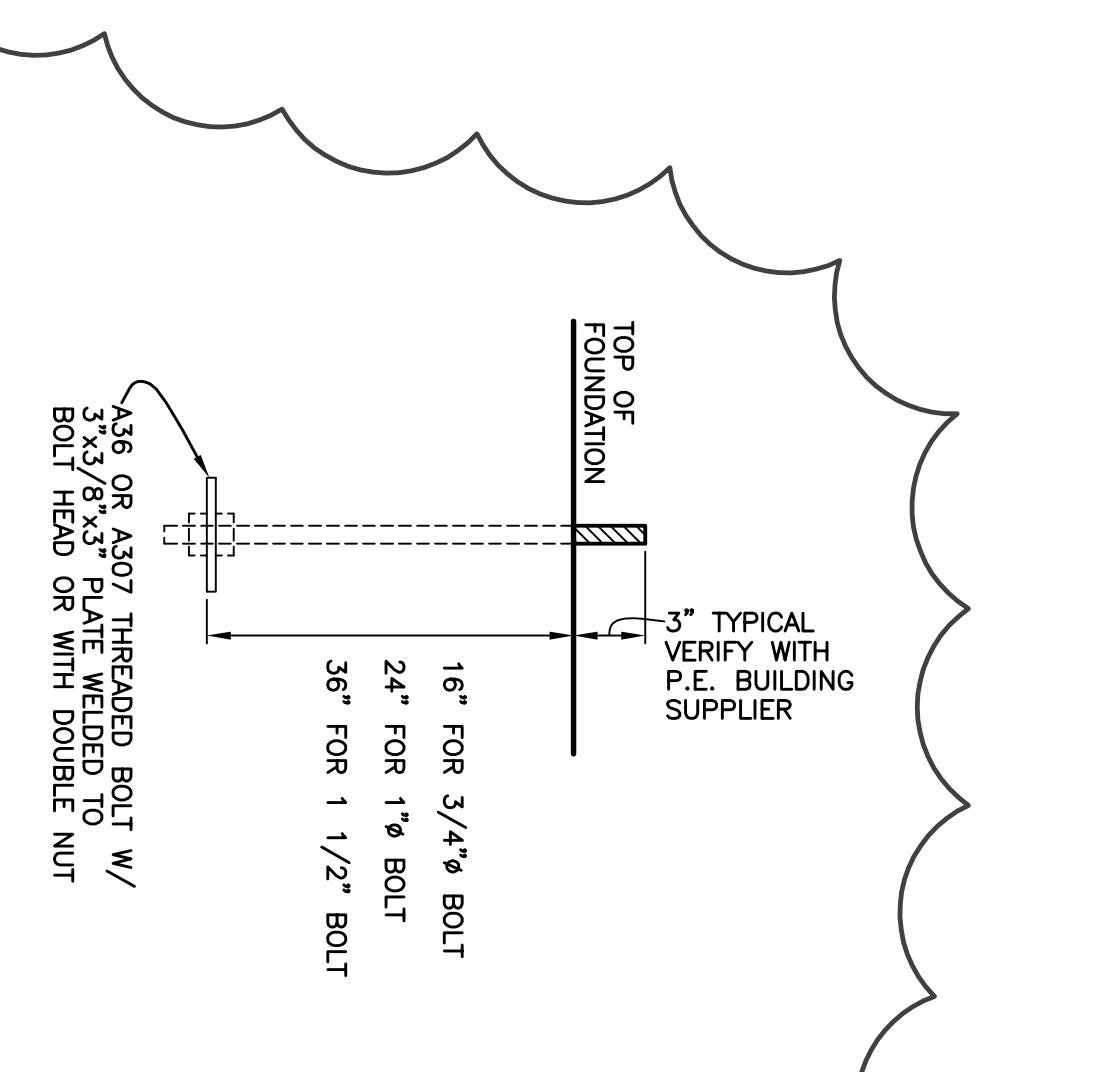
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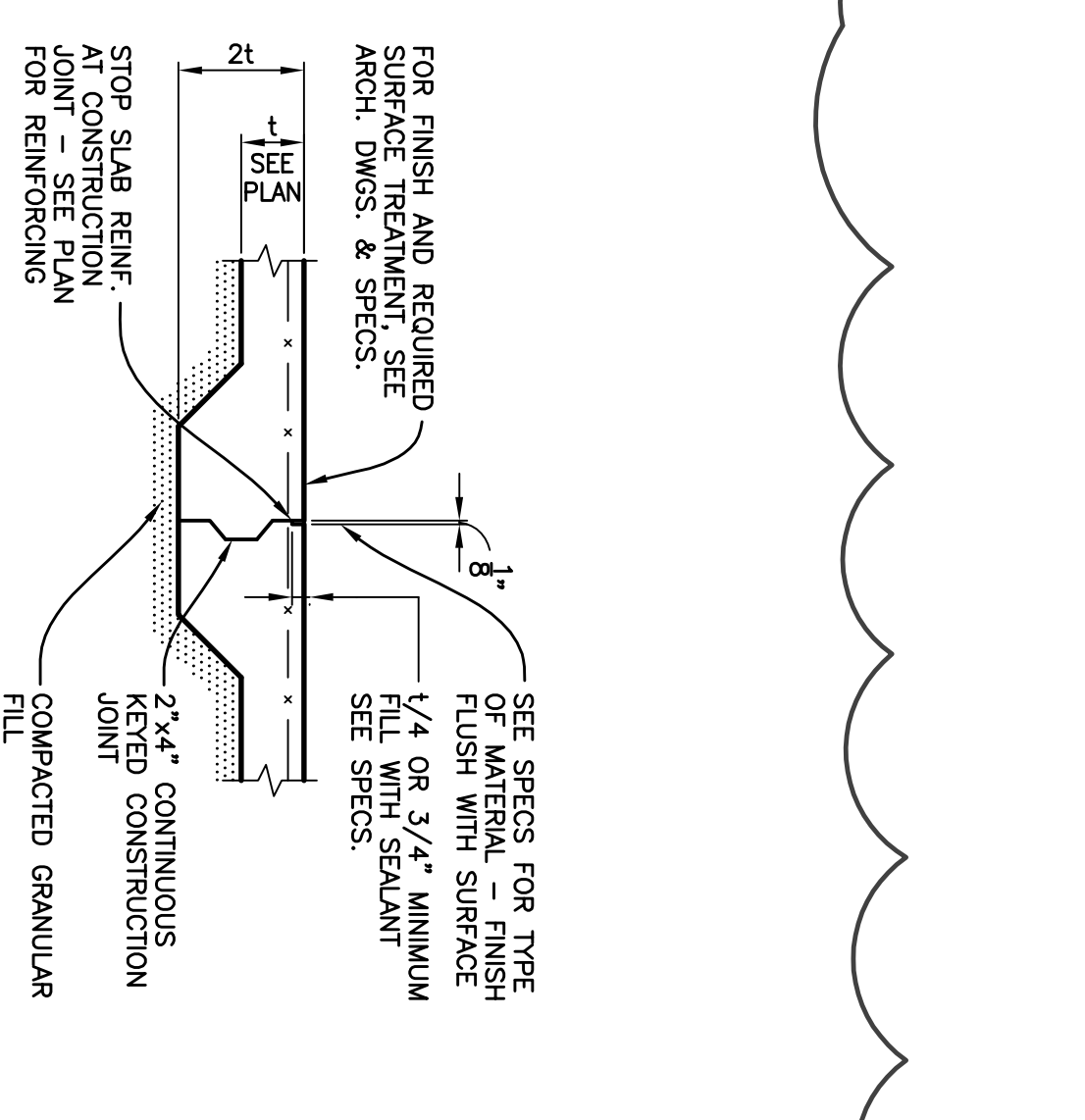
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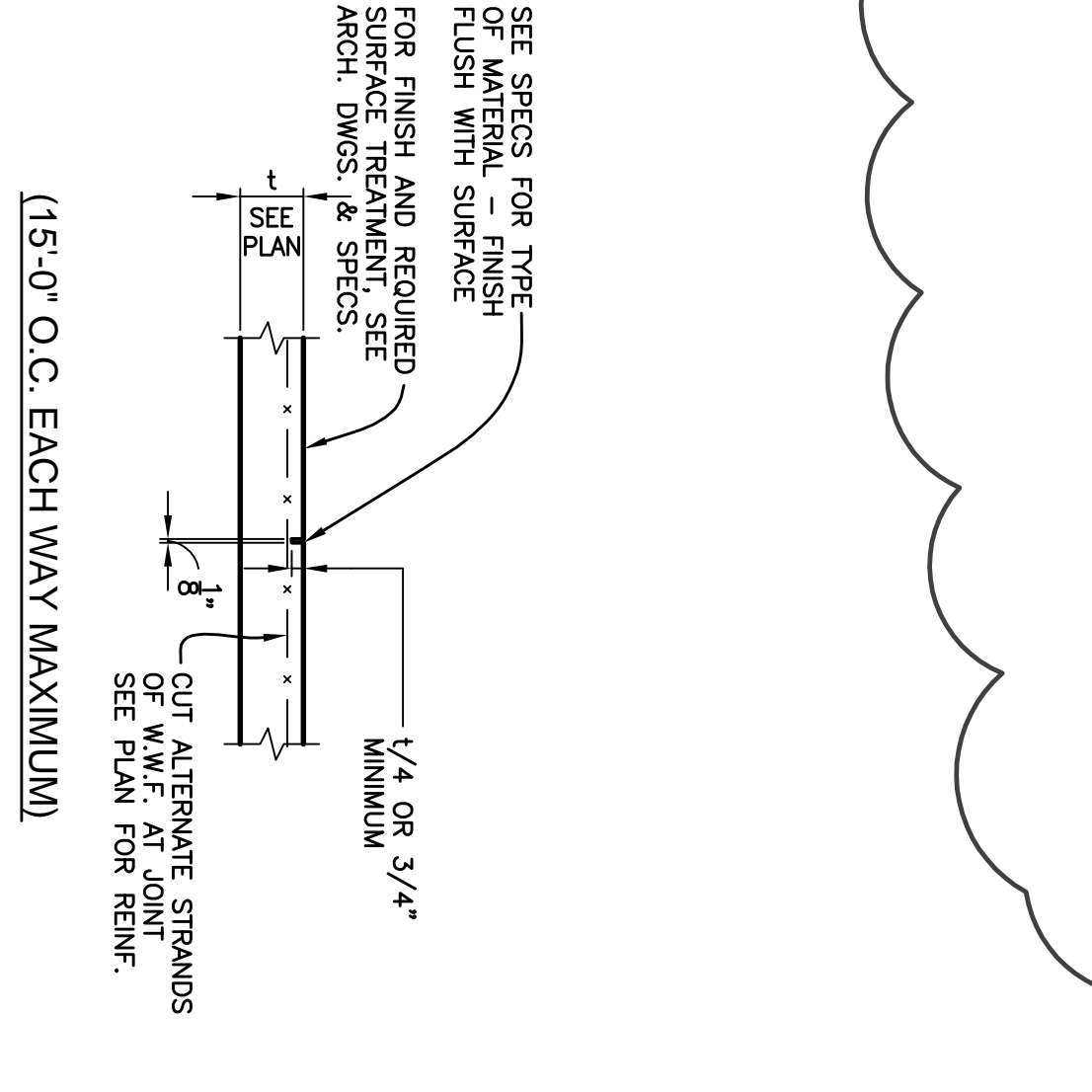
**7 TYPICAL SECTION AT
 PRE-ENGINEERED BUILDING**
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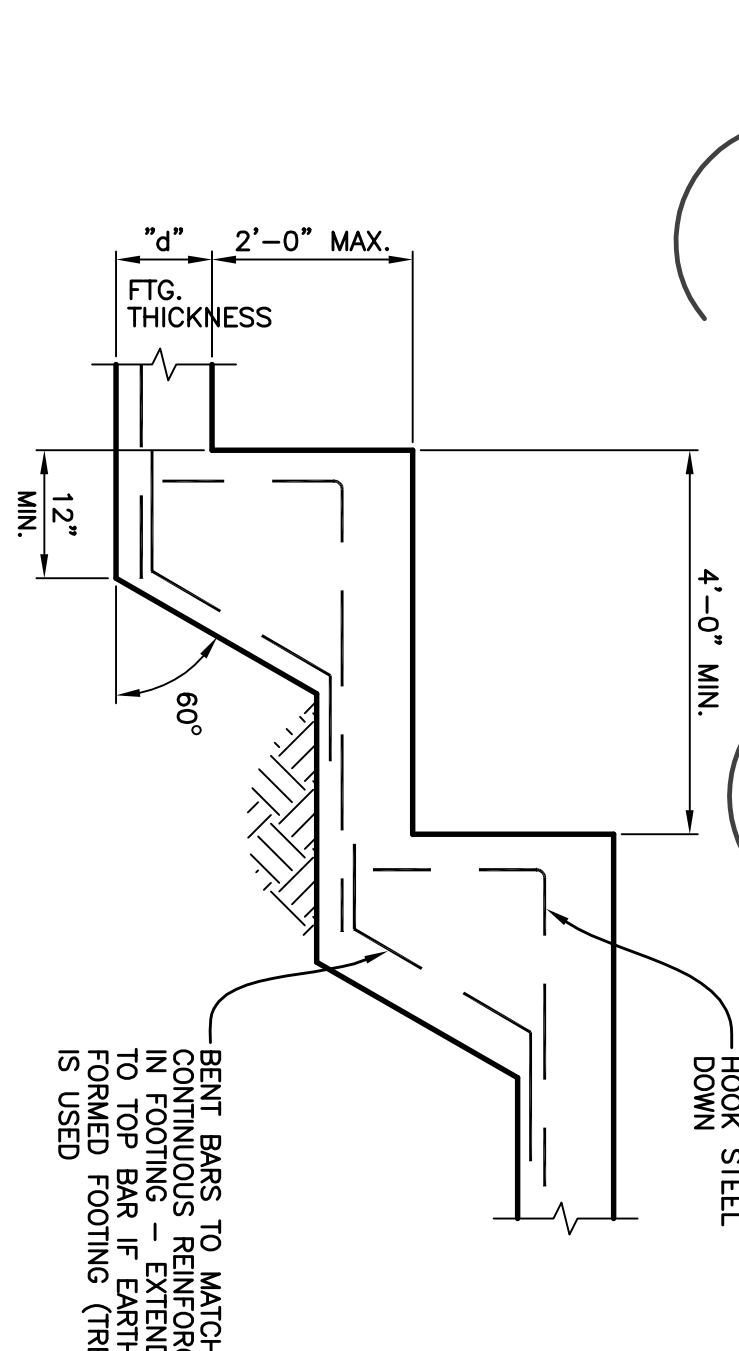
**6 TYPICAL PRE-ENGINEERED
 BLDG. ANCHOR BOLT DETAIL**
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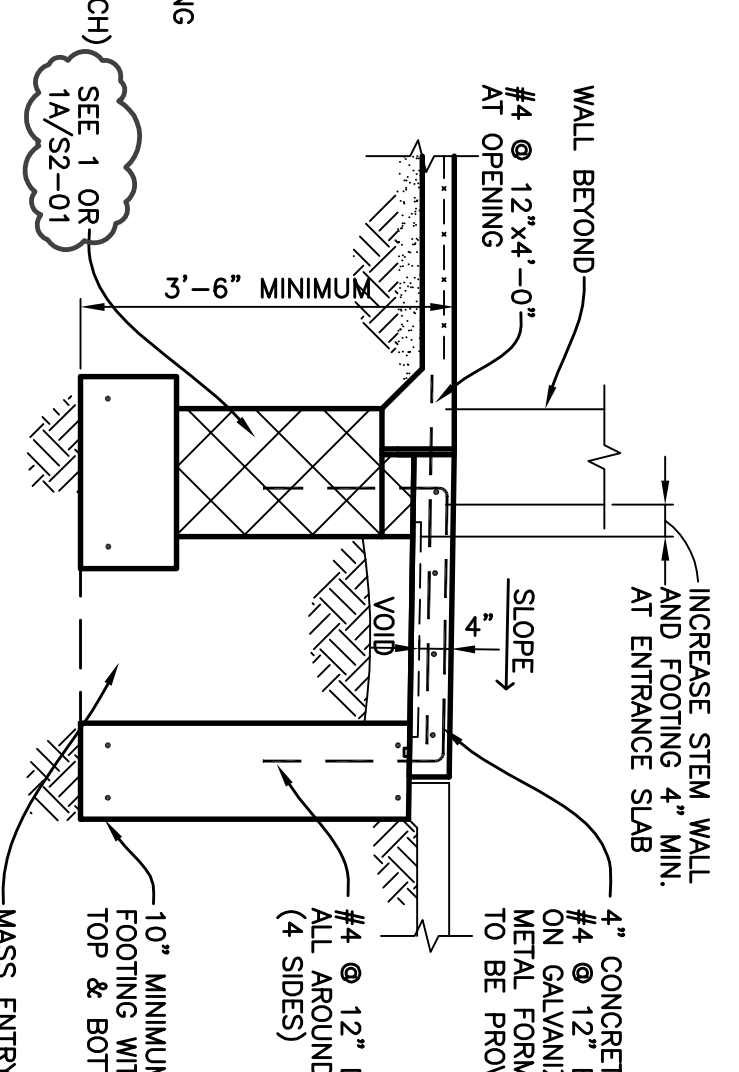
**5 TYPICAL
 FLOOR CONSTRUCTION JOINT**
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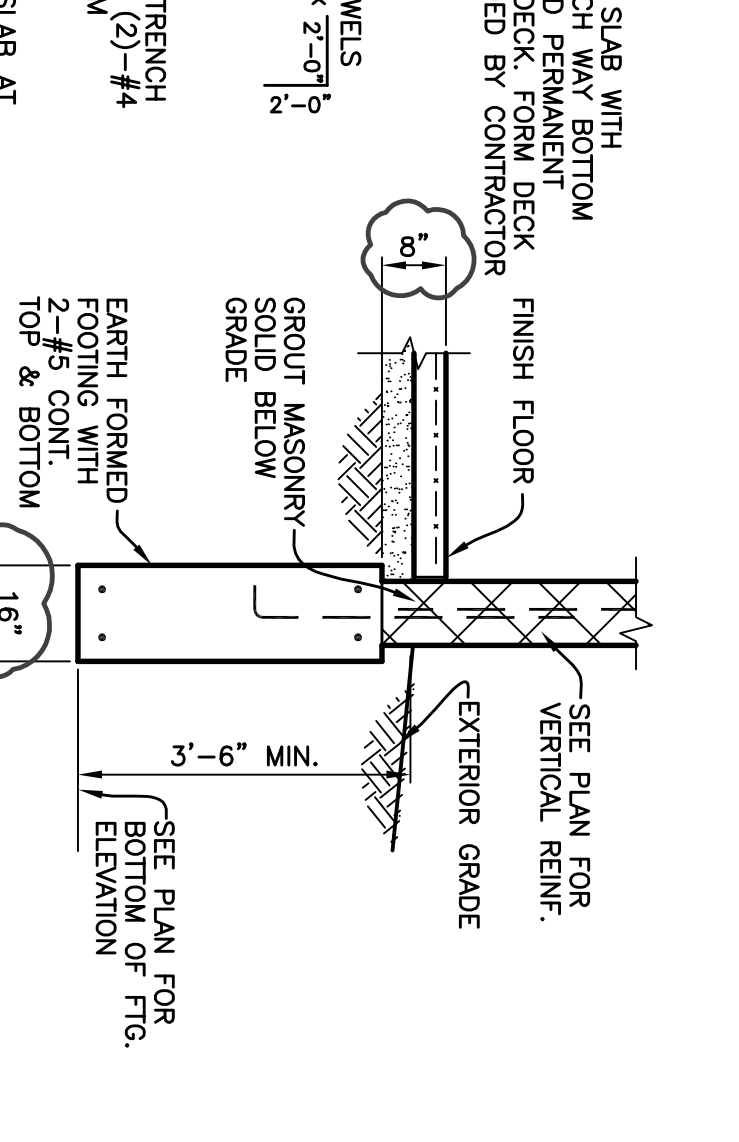
**4 TYPICAL
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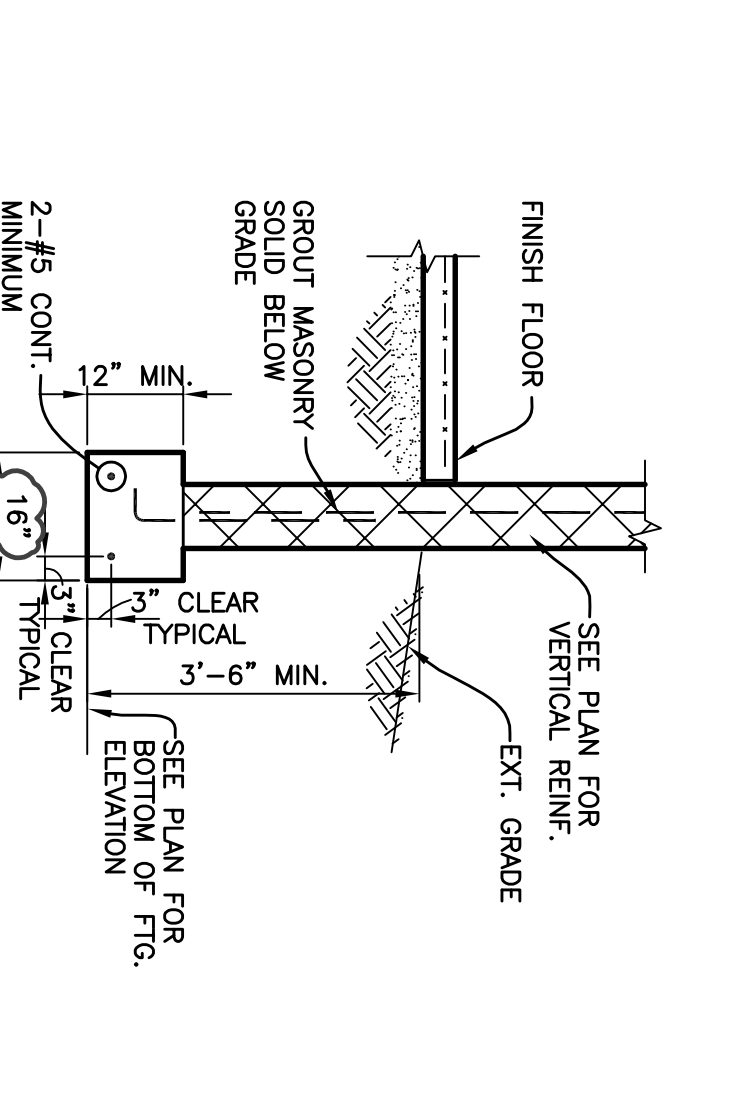
3 TYPICAL STEP FOOTING DETAIL
 SCALE : NONE
 (IF REQUIRED)



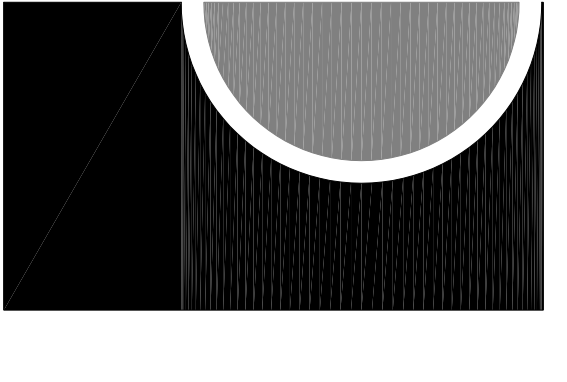
2 TYPICAL ENTRANCE SLAB
 SCALE : 1/2" = 1'-0"



**1A ALTERNATE EXTERIOR
 MASONRY WALL FOOTING**
 SCALE : 1/2" = 1'-0"
 (CONTRACTOR OPTION)
 NOTE: THIS DETAIL MAY BE USED IN LIEU OF DETAIL 1 AT CONTRACTOR'S OPTION IF ACCEPTABLE TO THE SOILS ENGINEER



**1 TYPICAL EXTERIOR
 MASONRY WALL PAD FOOTING**
 SCALE : 1/2" = 1'-0"



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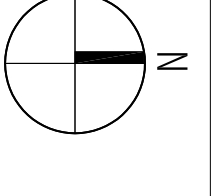
PROJECT NAME
**Department of
 Public Service
 Building Addition**

35389 Chicklenwood
 New Baltimore, MD 48047

PROJECT NO.
13-107

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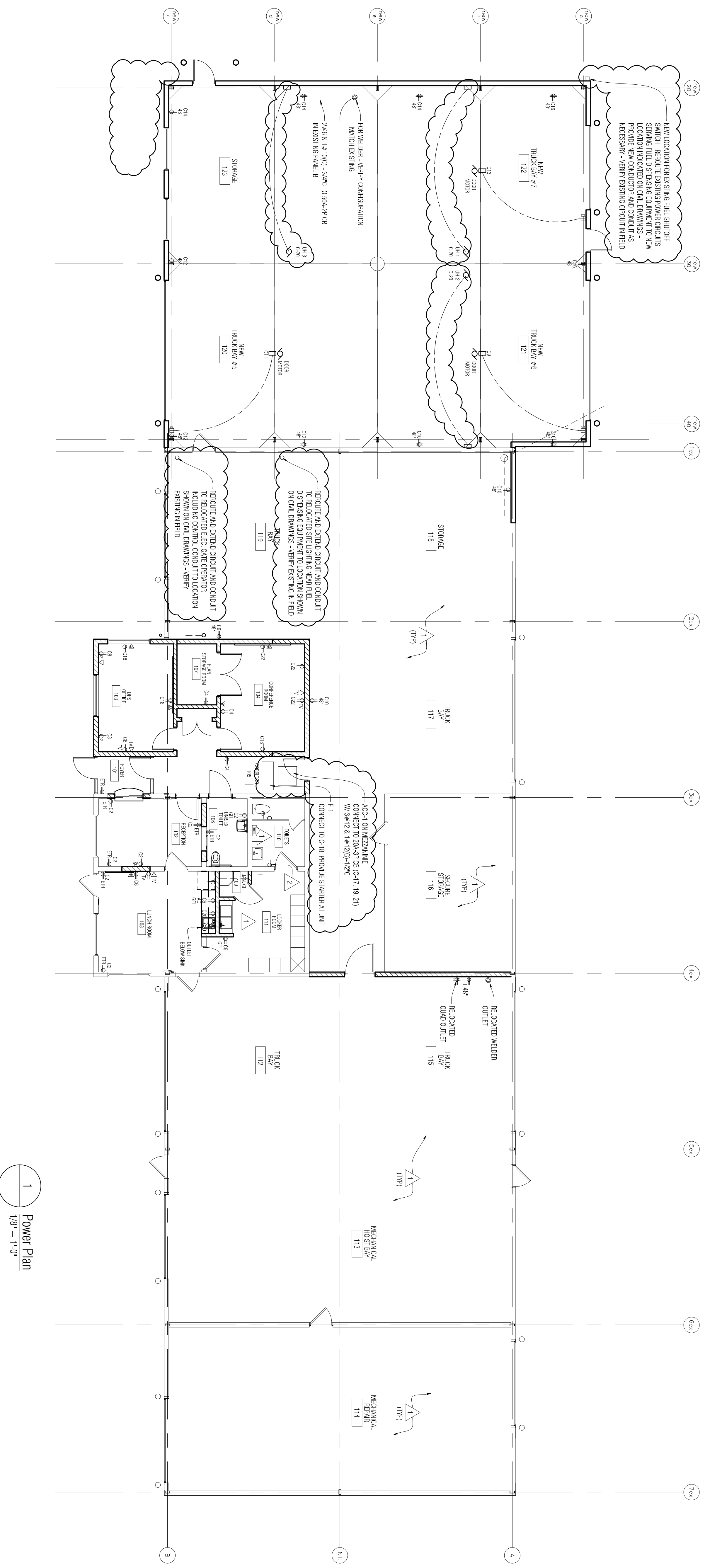
SHEET NAME
POWER PLAN

SHEET NO.
E3-01

Power Symbols Legend	
▽	TELECOMMUNICATION # 30 BOX W/ SINGLE FASTER HING AND 3/4" CONDUIT TO CEILING SPACE
▽	TELECOMMUNICATION OUTLET W/ 3/4" CONDUIT TO CEILING SPACE
▽ TV	TELECOMMUNICATION OUTLET W/ 3/4" CONDUIT TO CEILING SPACE FOR TV
∅ TV	DOUBLE RECEPTACLE AT 80" AFF FOR TV
∅	DOUBLE DUPLEX (QUAD) OUTLET
∅ dD	DOOR PUSH BUTTON
∅ dE	EXISTING ELECTRICAL DEVICE / OUTLET LOCATION TO REMAIN W/ NEW DEVICE BRANCH WIRING & COVER PLATE

NEW WORK KEY NOTES:

- ▲ EXISTING POWER RECEPTACLE TO REMAIN THIS UNLO.
- ▲ EXISTING RECEPTACLE TO BE REPLACED WITH CORRECT TYPE



1 Power Plan
 1/8" = 1'-0"