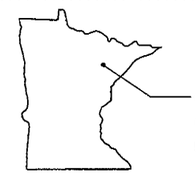
MESABI STATION
CONSTRUCTION DOCUMENTS
EVELETH, MN 55734

MINNESOTA DEPARTMENT OF TRANSPORTATION
SAINT LOUIS & LAKE COUNTIES REGIONAL RAILROAD AUTHORITY

CONSTRUCTION PLAN FOR: MESABI STATION

LOCATED FROM: STATE HWY #37 (0.2 MILES EAST OF STATE HWY. #53) IN EVELETH, MINNESOTA TO: 0.19 MILES WEST OF STATION 44 ROAD IN EVELETH, MINNESOTA

STATE PROJ. NO. S.P. 69-090-19



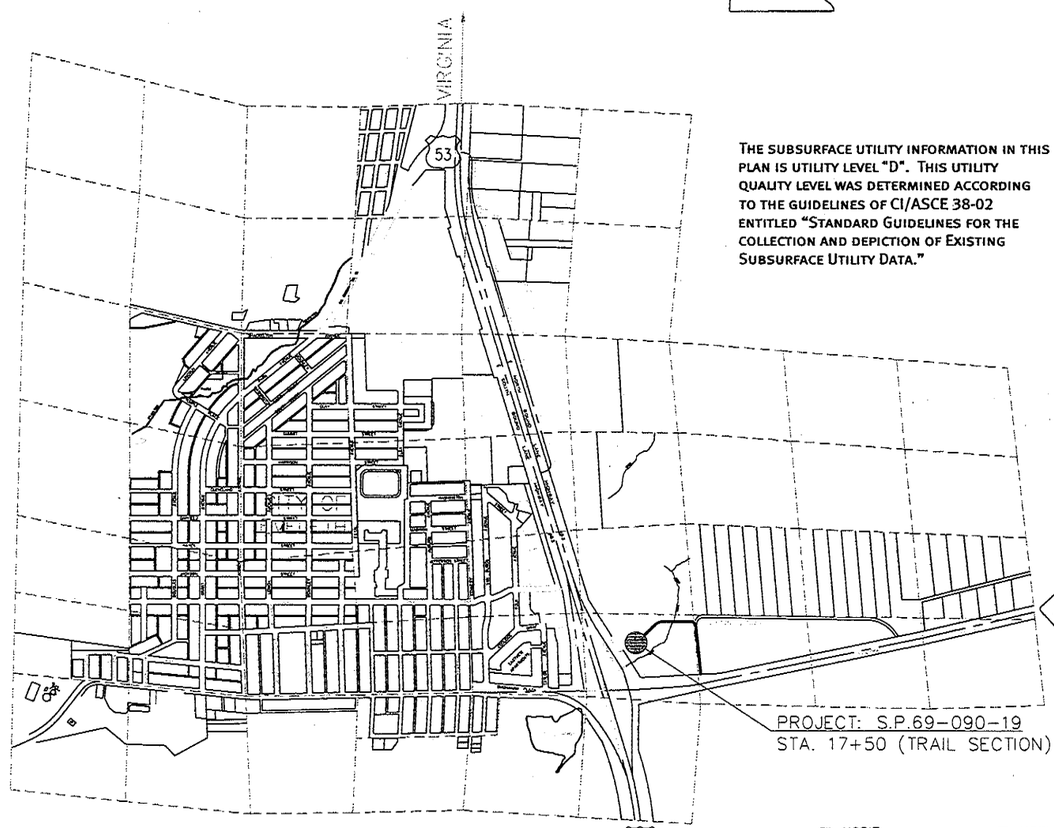
PROJECT LOCATION
COUNTY : ST.LOUIS
DISTRICT : 1 (DULUTH)

PLANS SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT-OF-WAY LINE
PRESENT RIGHT-OF-WAY LINE
CONTROL OF ACCESS LINE
PROPERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY LINE
RIVER OR CREEK
DRAINAGE DITCH
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
TREE
SHRUB
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame)
F-FRAME C-CONCRETE B-BRICK
S-STONE T-TILE ST-STUCCO
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE, OR METAL)
SLOPE EASEMENT

UTILITIES SYMBOLS

POWER OR TELEPHONE POLE LINE
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL)
GAS MAIN
WATER MAIN - EXISTING
WATER MAIN - PROPOSED
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE
BURIED ELECTRIC CABLE
SANITARY SEWER - EXISTING
SANITARY SEWER - PROPOSED
STORM SEWER - EXISTING
STORM SEWER - PROPOSED
CATCH BASIN - EXISTING
CATCH BASIN - PROPOSED
MANHOLE - EXISTING
MANHOLE - PROPOSED
PIPE CULVERTS-EXISTING
PIPE CULVERTS-PROPOSED
SIGN
FIRE HYDRANT
WATER SHUT OFF
REMOVE CONC. DRIVEWAY
REMOVE CONC. SIDEWALK
REMOVE CONC. C & G
PROPOSED CONC. DRIVEWAY
PROPOSED CONC. SIDEWALK
PROPOSED BITUMINOUS



THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL "D". THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02 ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

N
W E
S

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

PROFILE VERTICAL 5' HORIZ. 20'
CROSS SECTIONS VERTICAL 10' HORIZ. 10'
PLAN 20'
COVER MAP NONE

MN PROJECT NO. HPPH H107(001)

GOVERNING SPECIFICATIONS:
2005 EDITION OF MNDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION

INDEX TO PLANS
THIS PLAN CONTAINS 34 SHEETS

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ELECTRICAL SCHEDULES	E4.1

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

DIRECTOR ST. LOUIS AND LAKE CONTIES REGIONAL RAILROAD AUTHORITY DATE: 5/20/09

DATE: 04/24/09 LIC. NO. 17134 ARCHITECT JOHN GERZINA

RECOMMENDED FOR APPROVAL:

ST. LOUIS COUNTY ENGINEER DATE: 5/21/09

DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE-AID RULES/POLICY DATE: 5/21/09

APPROVED FOR FEDERAL AID FUNDING: for STATE AID ENGINEER DATE: 8/05/09

STATE PROJECT NO. S.P. 69-090-19 SHEET NO. 1 OF 34 SHEETS

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MESABI STATION
STATION 44 RD. & STATE HIGHWAY 37
EVELETH, MN 55734

project # 01074.0
date APRIL 24, 2009
file name 01074.0-A0.0 TITLE SHEET

drawn by MS
checked by RT
name JOHN GERZINA
reg. # 17139
sign date APRIL 24, 2009

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

signature

mark	revision/issue	date

S.P. 69-090-19

sheet title TITLE SHEET
sheet number A0.0

Plotted By: Author
Jun 18, 2009 - 11:27am
\\Mesa-dsfs\projects\2001 Projects\01074.4 Mesabi Station\Drawings\Mesabi Station\Sheets\01074.0-A0.0 Title Sheet.dwg

MESABI STATION
CONSTRUCTION DOCUMENTS

EVELETH, MN 55734

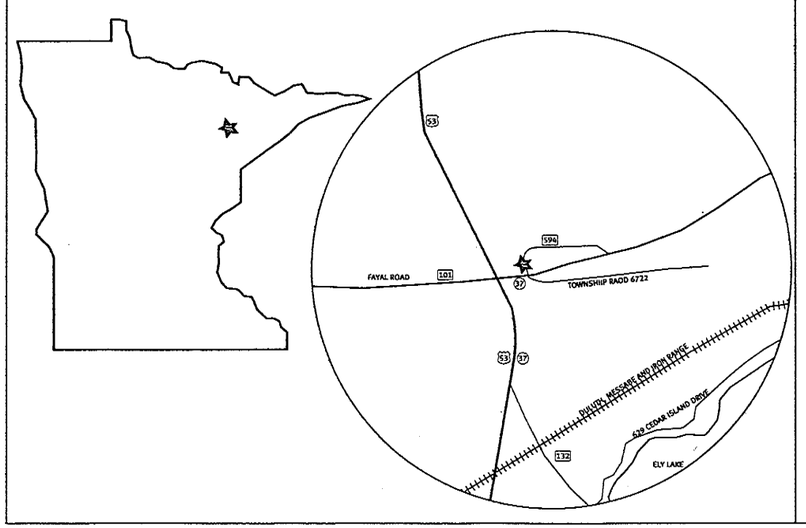
STATEMENT OF ESTIMATED QUANTITIES

NOTE	ITEM NO.	ITEM	UNITS	ESTIMATED QUANTITY	FINAL QUANTITY
(1)	2100.614	BUILDING DESIGN A	LUMP SUM	1	

ESTIMATE NOTES

1. ESTIMATED QUANTITY INCLUDES ALL DESIGN MATERIALS AND LABOR PER THE CONSTRUCTION DOCUMENTS.

LOCATION MAP



SYMBOLS

ELEVATION LABEL
100'-0"
T.O. STL.

MATCHLINE IDENTIFICATION
MATCH LINE

NOTE IDENTIFICATION
1 (LEADER OPTIONAL)

BREAKLINE

WALL TAG
A

ROOM IDENTIFICATION
TOILET ROOM
204
ROOM NAME
ROOM NUMBER

WINDOW TAG
W20

DOOR TAG
D34

TITLE MARKER
1 TITLE
1'-0" = 1'-0"

REVISION IDENTIFICATION
1
REVISION NUMBER

SECTION REFERENCE
1
A5.1
SECTION NUMBER
SHEET NUMBER

ELEVATION IDENTIFICATION
5
A8.1
ELEVATION NUMBER
SHEET NUMBER
A
B
C
D
4
A8.2

DETAIL REFERENCE
1
A7.1
DETAIL NUMBER
SHEET NUMBER
AREA TO BE DETAILED OR ENLARGED

NORTH ARROW
PLAN NORTH
ACTUAL NORTH (IF DIFFERENT)

DESIGN TEAM

OWNER

REGIONAL RAIL AUTHORITY
801 SW HWY 169, SUITE 4
CHISHOLM, MN 55719
PHONE: 218-254-0086
FAX:

CONTACT: BOB MANZOLINE
E-MAIL:

ARCHITECT

DSGW ARCHITECTS
417 SECOND STREET SOUTH
VIRGINIA, MN 55792
PHONE: 218-741-7962
FAX: 218-741-7967

CONTACT: RYAN TURNER
E-MAIL: RTURNER@DSGW.COM

STRUCTURAL CONSULTANT

NORTHLAND CONSULTING ENGINEERS
102 SOUTH 21ST AVENUE WEST
DULUTH, MN 55806
PHONE: 218-727-5995
FAX: 218-727-7779

CONTACT: MARK UDD
E-MAIL: MARK@NCE-DULUTH.COM

MECHANICAL CONSULTANT

FOSTER JACOBS & JOHNSON
345 CANAL PARK DRIVE
DULUTH, MN 55802
PHONE: 218-722-3060
FAX: 218-722-1931

CONTACT: CHIP JACOBS
E-MAIL: CHIPJ@FJJ.COM

ELECTRICAL CONSULTANT

FOSTER JACOBS & JOHNSON
345 CANAL PARK DRIVE
DULUTH, MN 55802
PHONE: 218-722-3060
FAX: 218-722-1931

CONTACT: BRUCE RESSMAN
E-MAIL: BRUCER@FJJ.COM

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A2.2 ROOF PLAN
A3.1 REFLECTED CEILING PLANS
A4.1 SCHEDULES
A4.2 DETAILS
A4.3 HEAD - JAMB - SILL DETAILS
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MECHANICAL

M2.1 FLOOR PLANS - MECHANICAL
M3.1 MECHANICAL SCHEDULES
M4.1 MECHANICAL DETAILS

PLUMBING

P2.1 FLOOR PLANS - PLUMBING
P3.1 PLUMBING RISERS

ELECTRICAL

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E2.1 FLOOR PLANS - LIGHTING
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E4.1 ELECTRICAL SCHEDULES

STANDARD PLATES

PLATE NO.	DESCRIPTION
80001	STANDARD BARRICADES

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MESABI STATION

STATION 44 RD. & STATE HIGHWAY 37
EVELETH, MN 55734

project # 01074.0
date APRIL 24, 2009
file name 01074.0-A0.1 TITLE

drawn by MS
checked by RT
name JOHN GERZINA
reg. # 17139
sign date APRIL 24, 2009

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

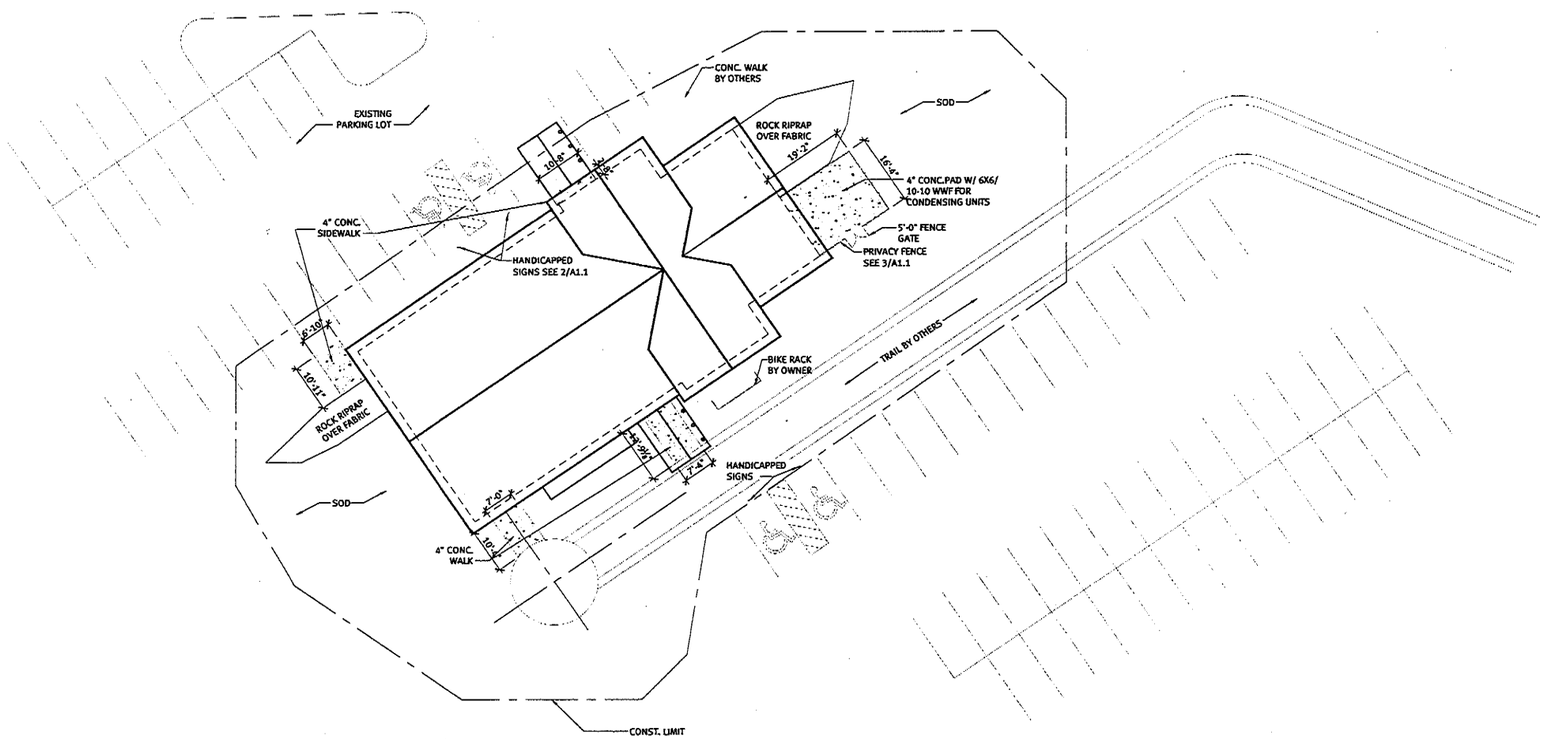
signature

mark	revision/issue	date

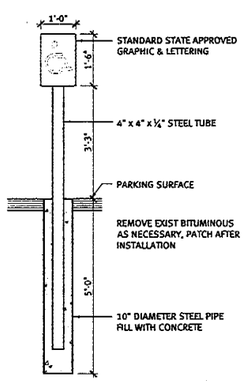
S.P. 69-090-19

sheet title TITLE SHEET
sheet number A0.1

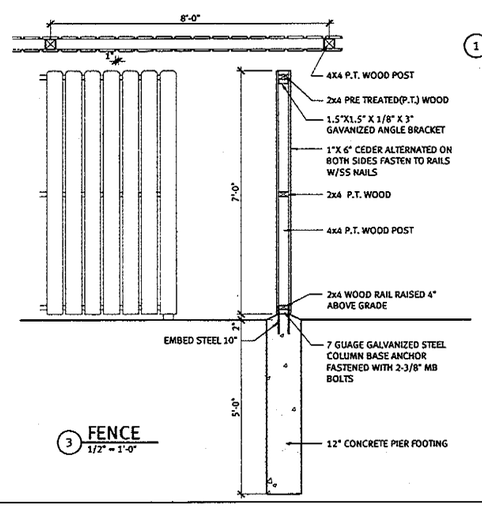
Last Saved: Apr 24, 2009 Plotted By: RT, BNEH (VWAS BH-19900) C:\DATA\PROJECTS\01074.0 MESABI STATION\DSGW\DSGW\MESABI STATION\01074.0-A0.1 TITLE.DWG



1 SITE PLAN
1/16" = 1'-0"



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



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

NOTE: ALL EXISTING SITE WORK TO BE PROTECTED THRU CONST. ALL DAMAGED AREAS TO BE REPAIRED TO MATCH EXISTING.

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MESABI STATION

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project #	01074.0
date	APRIL 24, 2009
file name	01074.0-A1.1 ARCHITECTURAL SITE PLAN
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name	JOHN GERZINA
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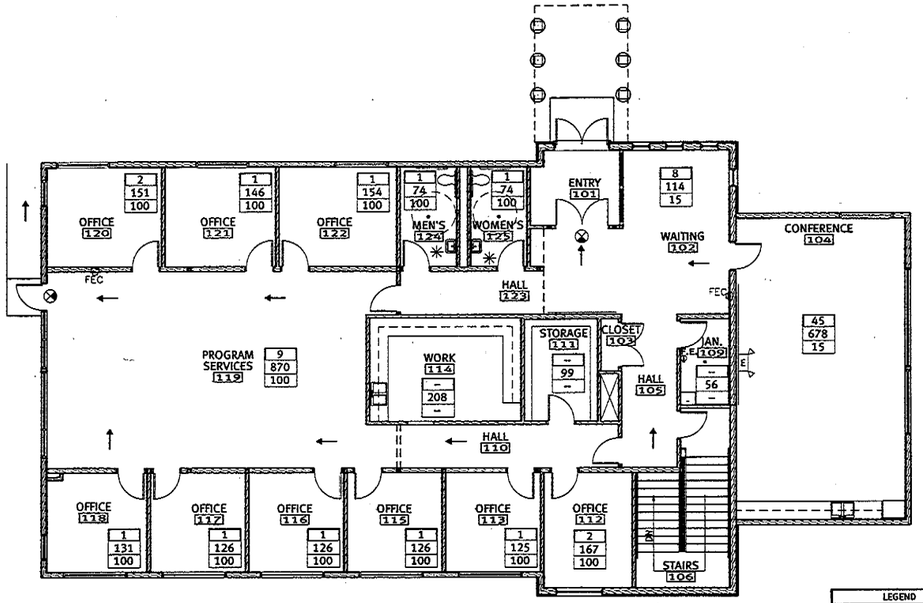
sheet title: ARCHITECTURAL SITE PLAN

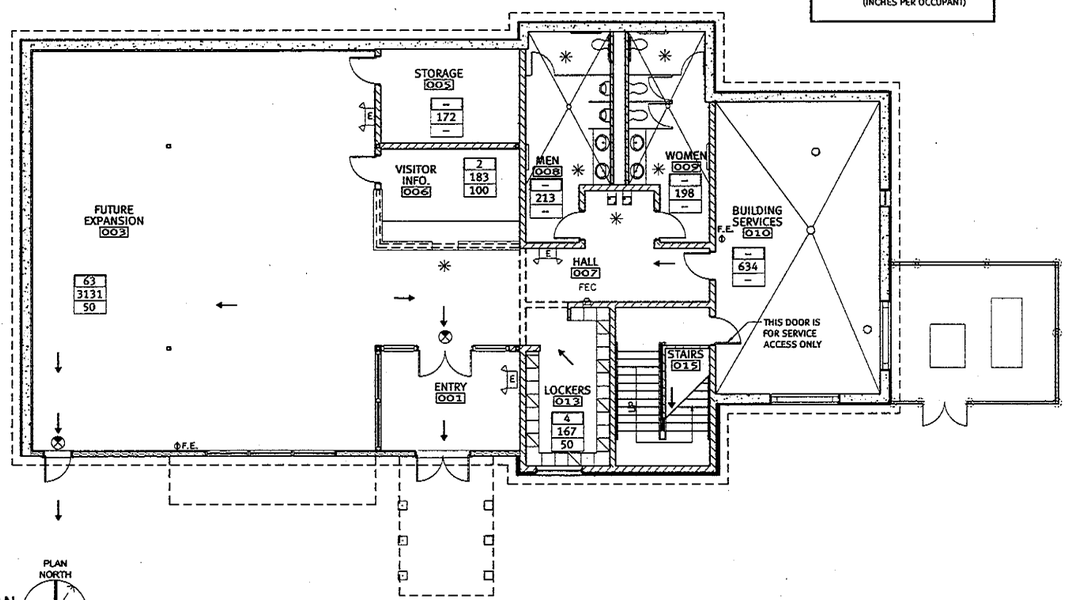
sheet number: A1.1



1 FIRST FLOOR CODE PLAN
1/8" = 1'-0"

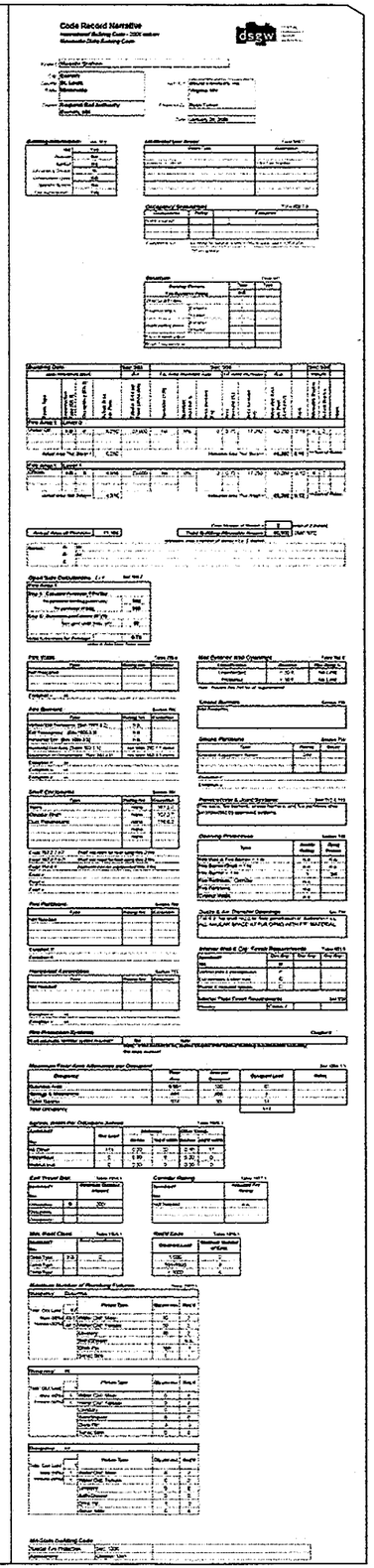
PLAN NORTH

LEGEND	
2 / 200 / 100	ROOM OCCUPANCY / SQUARE FEET / FACTOR NUMBER
⊗	EXIT SIGN
E	EMERGENCY LIGHTING
FEC	FIRE EXTINGUISHER CABINET
F.E.	FIRE EXTINGUISHER
→	PATH OF EGRESS
- - - -	1 HOUR RATED WALLS
— · —	2 HOUR RATED WALLS
✳	ACCESSIBLE FEATURE
.2	STAIRWAYS (INCHES PER OCCUPANT)
.15	OTHER EGRESS COMPONENTS (INCHES PER OCCUPANT)



2 LOWER LEVEL CODE PLAN
1/8" = 1'-0"

PLAN NORTH



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MESABI STATION

STATION 44 RD. & STATE HIGHWAY 37
EVELETH, MN 55734

project # 01074.0
date APRIL 24, 2009
file name 01074.0-A1.2 CODE PLAN

drawn by MS
checked by RT
name JOHN GERZINA
reg. # 17139
sign date APRIL 24, 2009

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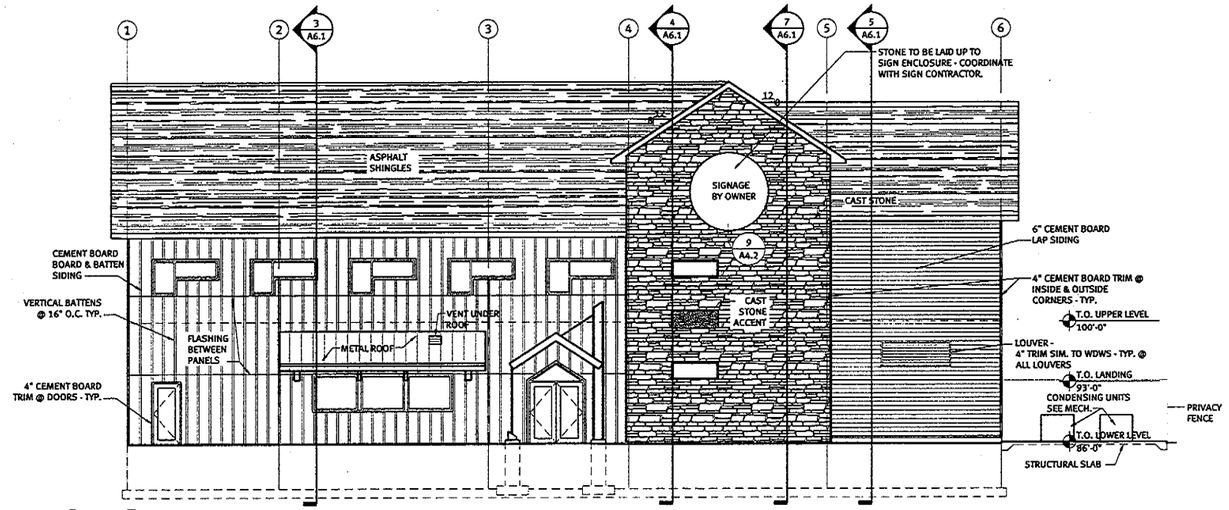
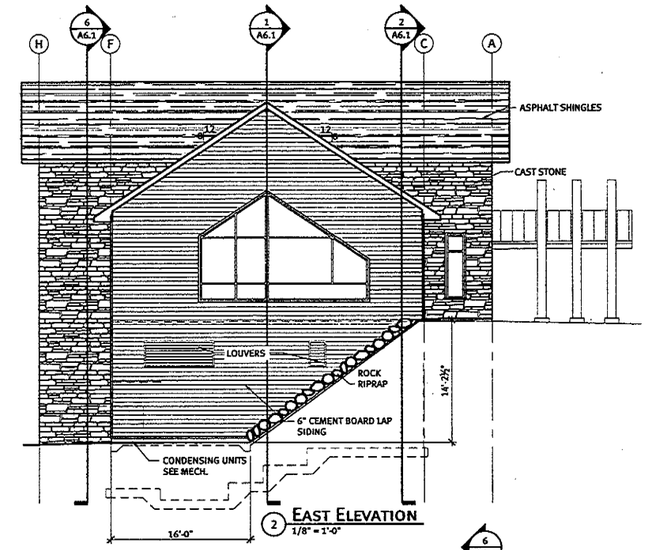
S.P. 69-090-19

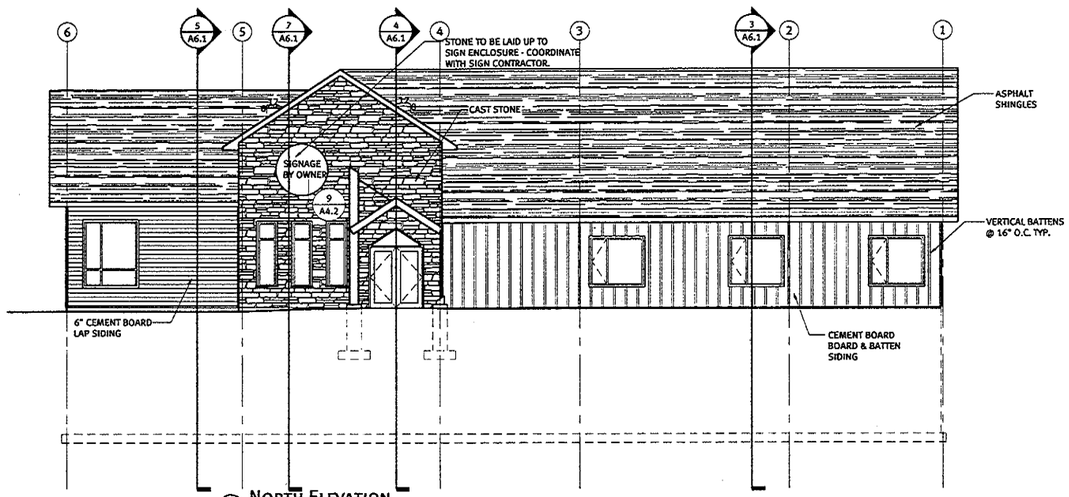
sheet title CODE PLANS
sheet number A1.2



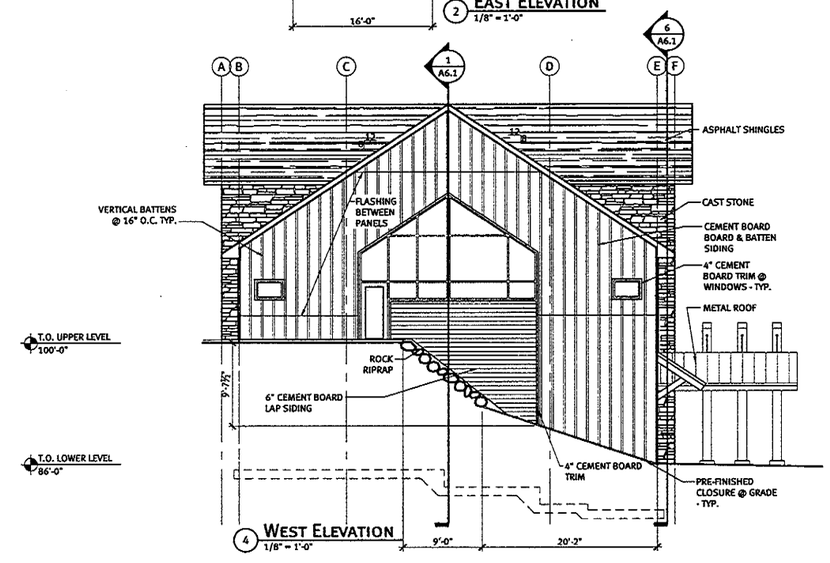
1 SOUTH ELEVATION
1/8" = 1'-0"



2 EAST ELEVATION
1/8" = 1'-0"



3 NORTH ELEVATION
1/8" = 1'-0"



4 WEST ELEVATION
1/8" = 1'-0"

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MESABI STATION

STATION 44 RD. & STATE HIGHWAY 37
EVELETH, MN 55734

project #	01074.0
date	APRIL 24, 2009
file name	01074.0-A5.1 EXTERIOR ELEVATIONS
drawn by	MS
checked by	RT
name	JOHN GERZINA
reg. #	17139
sign date	APRIL 24, 2009

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mark	revision/issue	date

S.P. 69-090-19

sheet title: EXTERIOR ELEVATIONS

sheet number: A5.1

Plotted By:RTURNER on July 22, 2009 P:\2001 PROJECTS\01074.6 MESABI STATION\DWG\MUSMESA3D SHEETS\01074-6 A5.1 EXTERIOR ELEVATIONS.DWG

STRUCTURAL GENERAL NOTES:

GENERAL CONSTRUCTION NOTES:

1. Reference Standards: Unless otherwise noted, all standards shall be current edition, with latest addenda if applicable.
2. Contractor shall verify all member sizes and field conditions prior to any fabrication, construction or installation and notify engineer if conditions, materials, sizes and dimensions are different from those shown.
3. The contract structural drawings and specifications represent the finished structure. Unless otherwise indicated, they do not indicate the means or method of construction. The contractor is solely responsible for the protection of the structure during all phases of demolition, construction and installation. Provide all measures necessary to protect the structure, workmen or other persons by means of shoring, bracing, etc.
4. Cross reference all dimensions and details with architectural and mechanical drawings before commencing any fabrication and/or construction.
5. Details and conditions not specifically shown shall be constructed in accordance with details shown for similar conditions and materials.
6. Shop drawings prepared by suppliers, subcontractors, etc. shall be reviewed, coordinated and signed/stamped by general contractor prior to submitting to the engineer.
7. Verify location of all box outs and openings with mechanical contractors. Opening sizes and locations shown for pipes, ducts, mechanical units, etc. are for general information only and shall be verified with mechanical contractor before commencing the work.
8. Contractor is solely responsible for protection of building during all phases of construction.

DESIGN CRITERIA LOADS AND STRESSES:
CODES:

1. 2007 Minnesota State Building Code (MSBC) adopting the 2006 edition of the International Building Code (IBC).
2. American Concrete Institute - (ACI 318-05 & ACI 530-95/ASCE 5-92).
3. American Institute of Steel Construction (AISC) 9th Edition.
4. American Welding Society (AWS)
5. Steel Deck Institute (SDI).

DESIGN LOADS

1. Ground snow load: 60 psf and drifting per Minnesota State building code and ASCE 7-05.
   A. flat roof snow load = 41.6 max.
   B. snow exposure factor, Ce = 0.9
   C. snow load importance factor, I = 1.0
   D. thermal factor, Ct = 1.0
2. Wind load
   A. basic wind speed, 90 mph.
   B. wind importance factor, I = 1.15
   C. wind exposure, exposure B
   D. internal pressure coefficient, ± 0.18
   E. component & cladding, design wind pressure = as per ASCE 7-05

DEAD LOADS:

20 PSF roof system

20 PSF Partition load, office areas

CONCRETE: (f'c) at 28 Days

4000 PSI Slab on grade

4000 PSI Footings, concrete walls

4000 PSI Exterior platforms and sidewalks

4000 PSI Concrete piers

3500 PSI Slab on steel deck.

All exterior concrete work shall have 5% to 7% air entrainment.

STEEL: (Fy)

60,000 PSI ASTM A615 grade 60 reinforcing
75,000 PSI ASTM A185 welded wire fabric
50,000 PSI ASTM A992 (w-shapes)
36,000 PSI ASTM A36 plates and angles, etc.
46,000 PSI ASTM A500 grade B structural tubes (HSS)
35,000 PSI ASTM A53 type E or S, grade B steel pipe
92,000 PSI ASTM A325 high strength erection bolts
36,000 PSI ASTM F1554 anchor rods & bolts (typ)
105,000 PSI ASTM F1554 anchor rods & bolts as specifically specified

GENERAL FOUNDATION NOTES:

1. All foundation excavations, backfill and compaction shall be inspected and certified by qualified soils testing firm prior to the construction of any footings. All reports are to be submitted to structural engineer.
2. Cross reference all architectural, mechanical, electrical and structural drawings to assure proper dimensions and placement of all anchor bolts, inserts, etc.
3. All footing elevations shown are to top of footings, unless noted otherwise.
4. All footings are centered under walls or columns above, unless noted otherwise.
5. Cast dowels in footings for concrete piers and walls above. Dowels to be same number and size, as the vertical reinforcing, unless noted otherwise. Dowels are to project from footings 30 bar diameters or a minimum of 24", whichever is greater. Provide 90 degree bend in column footing dowels. Wall footings dowels are straight, unless noted otherwise
6. Shore all foundation walls before backfilling and compacting.
7. Provide 6x6 W1.4xW1.4 W.W.F. (6x6 10/10 W.W.F.) in all slabs on grade and entrance platforms, unless noted otherwise.
8. Foundation design is based on 3,000 psf allowable soil bearing capacity. Please refer to GME soils report #0-4306 dated April 13, 2005 for subgrade preparation. Contractor specifications, backfill specifications...etc. Bedrock removal may be required on this site based on GME soils report.

GENERAL CONCRETE NOTES:

1. Concrete construction shall comply with all the requirements of the "ACI Manual of Concrete Practice" by the ACI.
2. The "ACI Detailing Manual" by the ACI shall govern detailing and fabrication of all reinforcing steel, unless noted otherwise.
3. Reinforcing supplier to provide all accessories, chairs, spacing bars and supports necessary to secure steel in accordance with "Manual of Standard Practice" by the Concrete Reinforcing Steel Institute.
4. Supplier shall provide plastic chairs and bar supports in all areas of exposed concrete.
5. Provide minimum concrete protection for all reinforcement as follows:
   Cast against and permanently exposed to earth = 3"
   Exposed to earth or weather:
   #5 bars and smaller = 1-1/2"
   #6 bars and larger = 2"
   Not exposed to weather or in contact with ground:
   Slabs, walls & joists (#3 to #11 bars) = 3/4"
   Beams, girders & columns, main reinforcement, ties, stirrups or spirals = 1-1/2"
6. Provide corner bars at all walls, grade beams and edge beams. Corner bar to be the same size and spacing as all horizontal bars.
7. At openings in slabs or walls, provide a minimum of two #6 bars each side of opening, bars to be 6'-0" longer than opening.
8. Provide minimum concrete wall reinforcing as follows: (unless noted otherwise)
   6" & 8" concrete walls:
   #4 @ 16" o.c. vert. & #4 @ 10" o.c. horiz. (center in wall)
   10" concrete walls:
   #4 @16" o.c. vert. & #4 @ 16" o.c. horiz. (each face)
   12" concrete walls:
   #4 @ 16" o.c. vert. & #4 @ 12" o.c. horiz. (each face)
   16" concrete walls:
   #4 @ 16" o.c. vert. & #4 @ 12" o.c. horiz. (each face)
9. Provide vertical control joints in exposed concrete walls at a maximum of 20'-0" intervals. See architectural drawings for joint detail.
10. No aluminum of any type shall be allowed in the concrete work, unless coated to prevent aluminum concrete reaction. Maximum outside diameter of embedded conduit shall be no larger than 1/3 of the slab thickness and the conduit shall be placed such that it does not significantly impair the strength of construction.
11. Synthetic fibers used for crack control per these plans must be approved by ES reports. Concrete supplier shall provide these reports to Arch./Eng. with mix design submittal.

GENERAL STEEL NOTES:

1. Construction of structural steel shall comply with all the requirements of the "Manual of Steel Construction" by the AISC, 9th Edition.
2. All shop connections shall be welded or bolted, field connections shall be bolted. Bolted connections shall be Bearing Type (snug-tightened) and shall be made with a minimum of 3/4" diameter ASTM A325-N Bolts. Direct-Tension indicators are acceptable substitutions.
3. All welds as per latest specifications of the AWS E70xx electrodes.
4. Concrete anchors shall be "HILTI KWIK BOLT" or "HILTI HIT ANCHORS" manufactured by "HILTI Fastening Systems" (or approved equal). Install anchors in strict conformance with bolt manufacturer's instructions.
5. Before encasing steel columns in concrete or masonry, paint column bases and tops of anchor bolts with asphaltic paint.
6. The structural fabricator shall furnish all plates and angles cast into support steel, beams and steel deck.
7. "C" denotes beam continuous over columns, "S" denotes beam splice.
8. All steel beams shall be true to line and elevation, column base plates grouted and anchor bolts tight before any loads are placed.
9. All column base and cap plates to be welded around all sides.
10. All welds not specified are 3/16" fillet weld, continuous and/or all around.
11. Structural fabricators shall show all field welding requirements on shop drawings.
12. Fabricator shall select AISC simple shear connections for steel beams capable of carrying either the reaction load indicated or the reaction load calculated and based on tributary area or at a minimum 50% of the total shear capacity calculated.
13. Fabricator shall select AISC simple shear connections for composite beams capable of carrying either the reaction load indicated or the reaction load calculated and based on tributary area or at a minimum 75% of the total shear capacity calculated.
14. Erect and maintain temporary bracing to insure the alignment and stability of the structure during erection until permanent connections have been completed.
15. Cuts, holes (opening), etc., required in structural steel members for the work of other trades shall be shown on the shop drawings. Burning of holes and cuts in structural steel members in the field shall not be allowed, except by written permission from the engineer.

2

PRE-ENGINEERED WOOD TRUSS NOTES

1. Pre-Engineered wood trusses shall meet the following requirements: shop drawings, connections and all calculations shall be stamped by a licensed Professional Engineer of the State of Minnesota and shall be submitted to the Engineer for review. The member supplier is responsible for providing all connection hardware, unless indicated on the drawings.

   Roof Truss - Top chord dead load - 15 psf
   - Bot. chord dead load - 5 psf
   - Top chord live load - 42 psf = drift per MN I.B.C.

   Flat Floor Truss - Top chord dead load - 15 psf
   - Bot. chord dead load - 5 psf
   - Top chord live load - 40 psf

2. Deflection shall meet the following requirements for all roof members:
   Live load deflection - l/360
   Total load deflection - l/240
3. Deflection shall meet the following requirements for all floor members:
   Live load deflection < 1/2"
4. Truss supplier shall provide Simpson H2.5A series truss ties for all roof truss bearing locations.

2

MASONRY NOTES

1. Concrete for core-fill @ vertical reinforcing, bond beams and below grade masonry shall have a maximum aggregate size of 3/8" and a compressive strength of 3000 PSI @ 28 days.
2. Provide 9 ga. galvanized ladder type horizontal reinforcing at every other block course or as shown on the drawing in all masonry walls
3. Vertical reinforcing shall be placed and grouted in vertical lifts of 4'-0".
4. Hollow concrete masonry units shall meet ASTM C-60, Grade N, Type 1, moisture controlled, normal weight, minimum net average compressive strength = 1500 PSI
5. Mortar shall conform to type "S" with a 28 day compressive strength of 1800 PSI (above grade). Use Type "M" 2500 PSI below grade (typ.)
6. All grout shall be consolidated @ the time of pouring by vibrating or other acceptable methods.
7. Vertical reinforcement shall be in alignment, as required, @ top and bottom of cores.
8. When grouting is stopped for one hour or longer, horizontal construction joints shall be formed by stopping the pour of grout 1 1/2" below the top of the uppermost unit.
9. Reinforce all bond beams with (2) #5 bottom bars, unless noted otherwise.
10. Provide lintels @ all openings in the non-bearing masonry wall as indicated in the specifications.
11. Reinforce all walls with (2) #5 verticals at all beam bearing locations & grout solid extending at least 2'-0" into foundation wall.
12. All Masonry below grade shall have all cores filled solid with concrete.

WOOD NOTES

1. Wood members shall meet the following requirements:

A. Dimensional Lumber: (2x4, 2x6)
Shall be Spruce-Pine-Fir No. 2 or better and meet the following min. base design values unless noted otherwise in drawings.

Fb = 750 psi in bending
Fv = 70 psi in horizontal shear
Fc = 975 psi in compression parallel to grain
Fc = 335 psi in compression perpendicular to grain
E = 1,100,000 psi in modulous of elasticity

Dimensional Lumber: (2x8, 2x10, 2X12)
Shall be Douglas Fir No. 2 or Southern Pine No. 2 and meet the following minimum base design values unless noted otherwise on drawings.

Fb = 875 psi in bending
Fv = 90 psi in horizontal shear
Fc = 1300 psi in compression parallel to grain
Fc = 555 psi in compression perpendicular to grain
E = 1,600,000 psi in modulous of elasticity

B. Laminated Veneer Lumber- (LVL)

Shall meet the following minimum requirements, the member supplier is responsible for providing connection hardware.

Fb = 2800 psi in bending
Fv = 250 psi in horizontal shear
Fc = 550 psi in compression perpendicular to grain
E = 2,000,000 psi in modulus of elasticity

C. Parallam Beams

Shall meet the following minimum requirements. The member supplier is responsible for connection hardware.

Fb = 2,900 psi in bending
Fv = 290 psi in horizontal shear
Fc = 2900 psi in compression parallel to grain
Fc = 600 psi in compression perpendicular to grain
E = 2,000,000 psi in modulous of elasticity

D. Timber Strand L.S.L.

Fb = 2,250 psi in bending
Fv = 400 psi in horizontal shear
Fc = 1950 psi in compression parallel to grain
Fc = 425 psi in compression perpendicular to grain
E = 1,500,000 psi in modulus of elasticity

2

2. Fasten multiple ply beam and columns together using (2) rows of 16d nails @ 12" o.c. (3 rows of 16d @ 12" o.c. for 14" 16" L.V.L.)
3. All wood beams and lintels shall be supported by built-up triple 2x6 wood columns & (1) addt'l full ht. stud unless noted
4. Roof sheathing shall be 19/32" (5/8") C-C (Exterior) sheathing w/ 10d nails @ 4" o.c. @ boundary and 6" o.c. @ all other edges and framing members. Arrange sheathing in case 1 (No unblocked edges or continuous joints)
5. Wall sheathing shall be 15/32" (1/2") exterior plywood sheathing w/ 8d nails @ 4" o.c. @ boundary and @ all other edges and framing members.

2

SPECIAL INSPECTION AND TESTING SCHEDULE

Material	Specification	Frequency	Agency	Frequency of Report	Description
Earthwork	02200	Full Time	Testing Agent	Work is done	1704.7
Concrete	03100/ 03300	Periodic	Testing Agent	Weekly	1704.4
Concrete Reinforcement	03200	Periodic	Testing Agent	Weekly	1903.5; 1907.1; 1907.7; 1914.4
General Masonry	04200	Periodic	Testing Agent	Weekly	1704.5
Welding Structural Steel	05120	Periodic	Testing Agent	Work is done	1704.3.1
High Strength Bolting	05120	Periodic	Testing Agent	Work is done	1704.3.3

2

EARTHWORK:

1. Observe all subgrades and excavation bases below footings and slabs before construction of footing is performed.
2. Verify footing bearing surfaces and depth of footing below frost depth.
3. Verify materials for backfilling excavation.
4. Verify compaction is performed in accordance with ASTM D698.
5. See Section 02200 for additional requirements.

CONCRETE FORM WORK:

1. Observe erected form work, shoring and bracing to ensure that work is in accordance with form work design and shop drawings.
2. See Section 03100 for additional requirements.

CONCRETE REINFORCEMENT:

1. Verify reinforcing bar grade.
2. Verify reinforcing bar size and placement.
3. Verify that bars are free of dirt, excessive rust and damage.
4. Verify reinforcing bars are adequately tied, chaired and supported to prevent displacement during concrete pour.
5. Verify proper clear distances between bars and to surfaces of concrete.
6. Verify bar laps for proper length and stagger, and bar bends for minimum diameter, slope and length.
7. See Section 03200 for additional requirements.

CONCRETE:

1. Submit proposed mix design for each class of concrete prior to commencement of the work.
2. Sample and test all cast in place concrete.
3. Verify ready mix concrete.
4. Observe placement of concrete.
5. Observe protection and curing of concrete.
6. Observe and inspect bolts and anchor rods installed in concrete.
7. See Section 03300 for additional requirements.

STRUCTURAL STEEL:

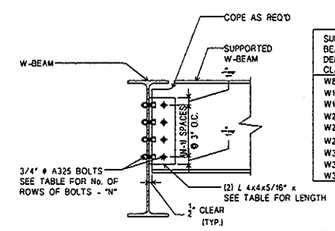
1. Observe high strength bolting.
2. Observe field welding.
3. Observe installation of mechanical anchorage devices.
4. See Sections 05100, 05200 and 05300 for additional requirements.

METAL DECK:

1. Verify type and gage of deck
2. Verify span is in proper direction.
3. Verify size, spacing and quality of puddle weld.
4. Verify side lap fastener spacing.
5. See Section 05300 for additional requirements.

SHEET INDEX

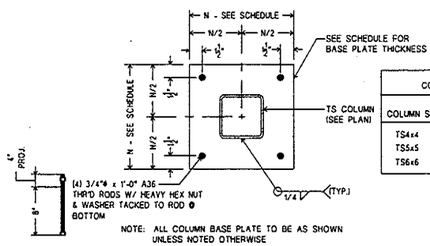
SHEET NO.	DISCRIPTION
S2.0	NOTES/ SHEET INDEX
S2.1	FOUNDATION PLAN/ FIRST FLOOR FRAMING PLAN
S2.2	ROOF FRAMING PLAN/ SECTIONS
S3.1	SECTIONS/ DETAILS
S3.2	SECTIONS/ DETAILS
S3.3	SECTIONS/ DETAILS
S3.4	SECTIONS/ DETAILS



SUPPORTED BEAM DEPTH CLASS	"N" -No. OF ROWS OF BOLTS	LENGTH OF CONN. L
W8, W10	2	5 1/2"
W12, W14	3	8 1/2"
W16, W18	4	11 1/2"
W21	5	1'-2 1/2"
W24	6	1'-5 1/2"
W27	7	1'-8 1/2"
W30	8	1'-11 1/2"
W33	9	2'-2 1/2"
W36	10	2'-5 1/2"

NOTE: THIS CONNECTION DETAIL SHOULD BE USED FOR ALL BEAM TO BEAM CONNECTIONS UNLESS NOTED OTHERWISE.

1 S2.0 TYPICAL BEAM TO BEAM CONNECTION
1" = 1'-0"



COLUMN BASE PLATE SCHEDULE		
COLUMN SIZE	BASE PLATE THICKNESS	BASE PLATE WIDTH = N
TS4x4	3/4"	10"
TS5x5	3/4"	11"
TS6x6	3/4"	12"

NOTE: ALL COLUMN BASE PLATE TO BE AS SHOWN UNLESS NOTED OTHERWISE

2 S2.0 TYPICAL COLUMN BASE PLATE-BEARING ON CONCRETE
1 1/2" = 1'-0"

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MESABI STATION

HWY. 53
EVELETH, MINNESOTA

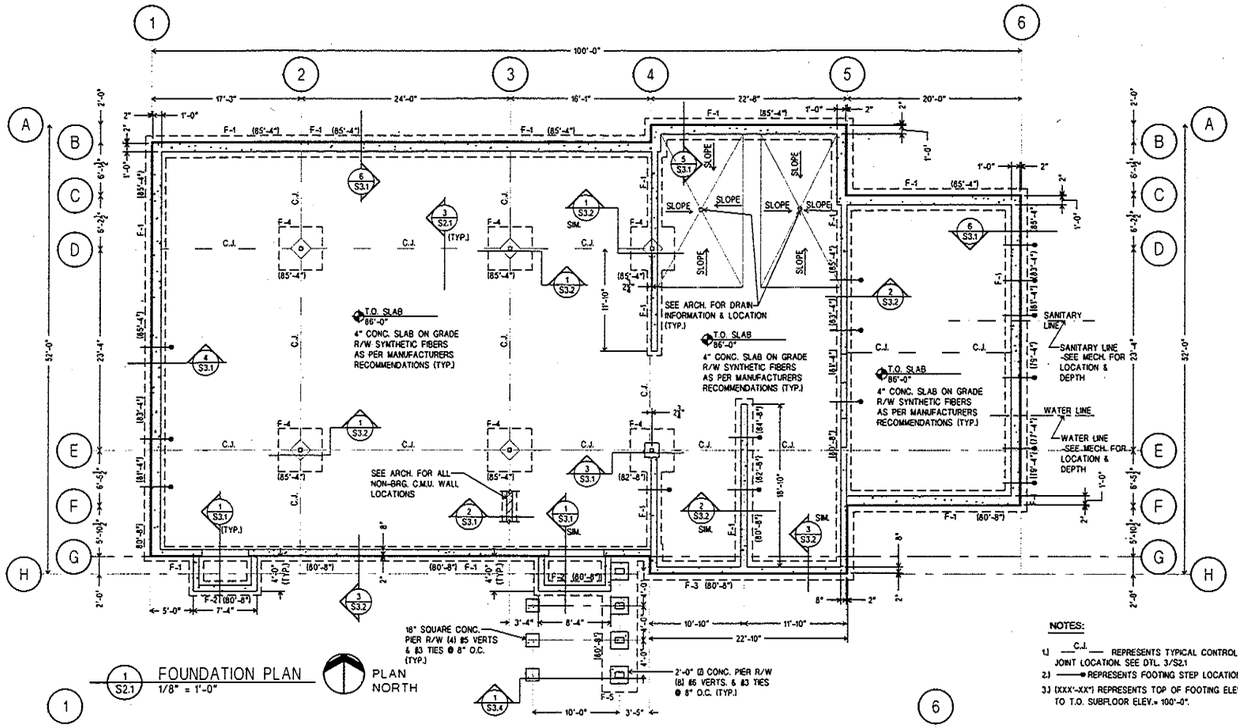
project # 07-466
date APRIL 24, 2009
file name
drawn by T.E.C.
checked by M.R.U.
name MARK R. UDD
reg. # 40443
sign date APRIL 24, 2009

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

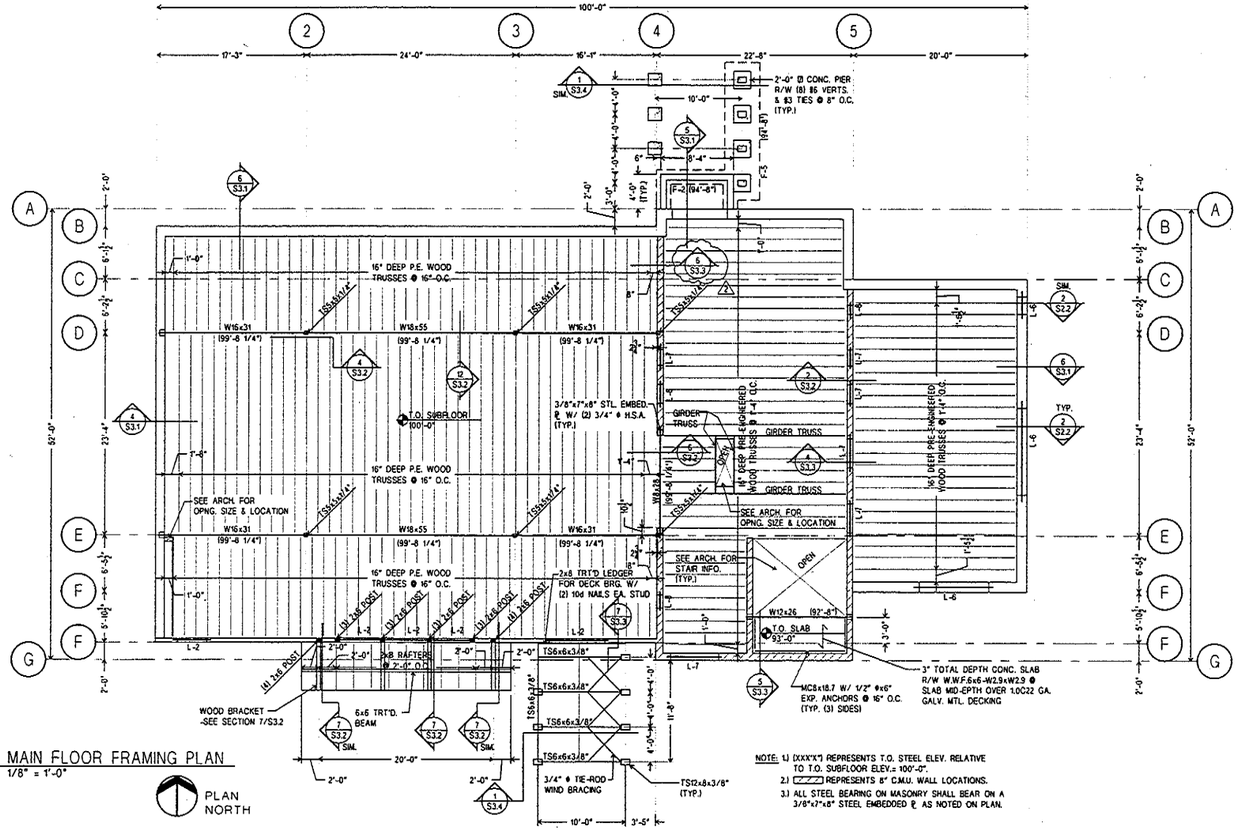
signature

mark	revision/issue	date
2		07-10-09

sheet title NOTES
sheet number S2.0



1 S2.1 FOUNDATION PLAN
1/8" = 1'-0"

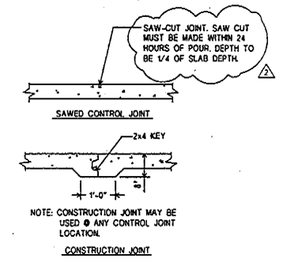


2 S2.1 MAIN FLOOR FRAMING PLAN
1/8" = 1'-0"

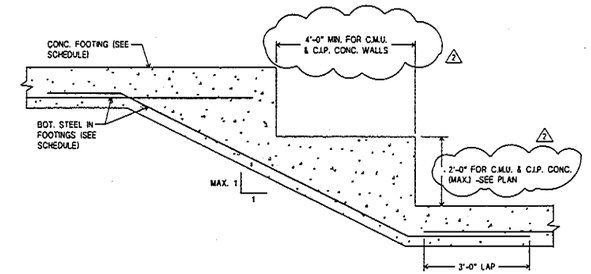
NOTE: 1.) (XXX'X") REPRESENTS T.O. STEEL ELEV. RELATIVE TO T.O. SUBFLOOR ELEV.= 100'-0".
2.) REPRESENTS 8" C.M.U. WALL LOCATIONS.
3.) ALL STEEL BEARING ON MASONRY SHALL BEAR ON A 3/8"x7"x8" STEEL EMBEDDED ℄ AS NOTED ON PLAN.

NOTES:

1.) C.J. REPRESENTS TYPICAL CONTROL JOINT/CONSTRUCTION JOINT LOCATION. SEE DTL. 3/S2.1
2.) REPRESENTS FOOTING STEP LOCATION. SEE DTL. 4/S2.1
3.) (XXX'-XX") REPRESENTS TOP OF FOOTING ELEVATION RELATIVE TO T.O. SUBFLOOR ELEV.= 100'-0".



3 S2.1 JOINT SECTIONS
1/2"=1'-0"



4 S2.1 TYPICAL FOOTING STEP DETAIL
1/2" = 1'-0"

FOOTING SCHEDULE

MARK	DESCRIPTION	REMARKS
F-1	2'-0" WIDEx1'-0" THICK x CONT. FTG. R/W (2) #5xCONT.	SEE DTL. 4/S3.1
F-2	1'-8" WIDEx1'-0" THICK x CONT. FTG. R/W (2) #5xCONT.	SEE DTL. 1/S3.1
F-3	1'-0" THICK MAT FOUNDATION -SEE SECTIONS FOR SIZE & REINF.	NO LONGER REQ'D
F-4	5'-0" SQUARE x 1'-0" THICK FTG. R/W (5) #5 EA. WAY	SEE DTL. 1/S3.2
F-5	4'-0" x 16'-0" x 1'-0" THICK FTG. R/W (4) #5 L.W. & #5 @ 18" O.C. S.W.	SEE DTL. 1/S3.4

LINTEL SCHEDULE

MARK	DESCRIPTION	REMARKS
L-1	(2) 2x6 BOX BM. LINTEL -MIN. 3" BRG. EA. END	SIM. TO 10/S3.2
L-2	(2) 2x12 BOX BM. LINTEL - MIN. 3" BRG. EA. END	SEE DTL. 10/S3.2
L-3	(2) 1 3/4"x11 1/4" LVL - MIN. 3" BRG. EA. END	SEE DTL. 11/S3.2
L-4	NO LONGER REQUIRED	NO LONGER REQ'D
L-5	W16x26	NO LONGER REQ'D
L-6	12" CONC. BEAM LINTEL -SEE SECTION FOR REINF.	SEE DTL. 2/S2.2
L-7	8"x16" DEEP C.M.U. LINTEL R/W (2) #5xCONT. BOTTOM BARS -MIN. 8" BRG. EA. END	SEE DTL. 4/S3.3
L-8	8"x8" DEEP C.M.U. LINTEL R/W (2) #5xCONT. BOTTOM BARS -MIN. 8" BRG. EA. END	NO DTL. SHOWN

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MESABI STATION

HWY. 53
EVELETH, MINNESOTA

project # 07-466
date APRIL 24, 2009
file name
drawn by T.E.C.
checked by M.R.U.
name MARK R. UDD
reg. # 40443
sign date APRIL 24, 2009

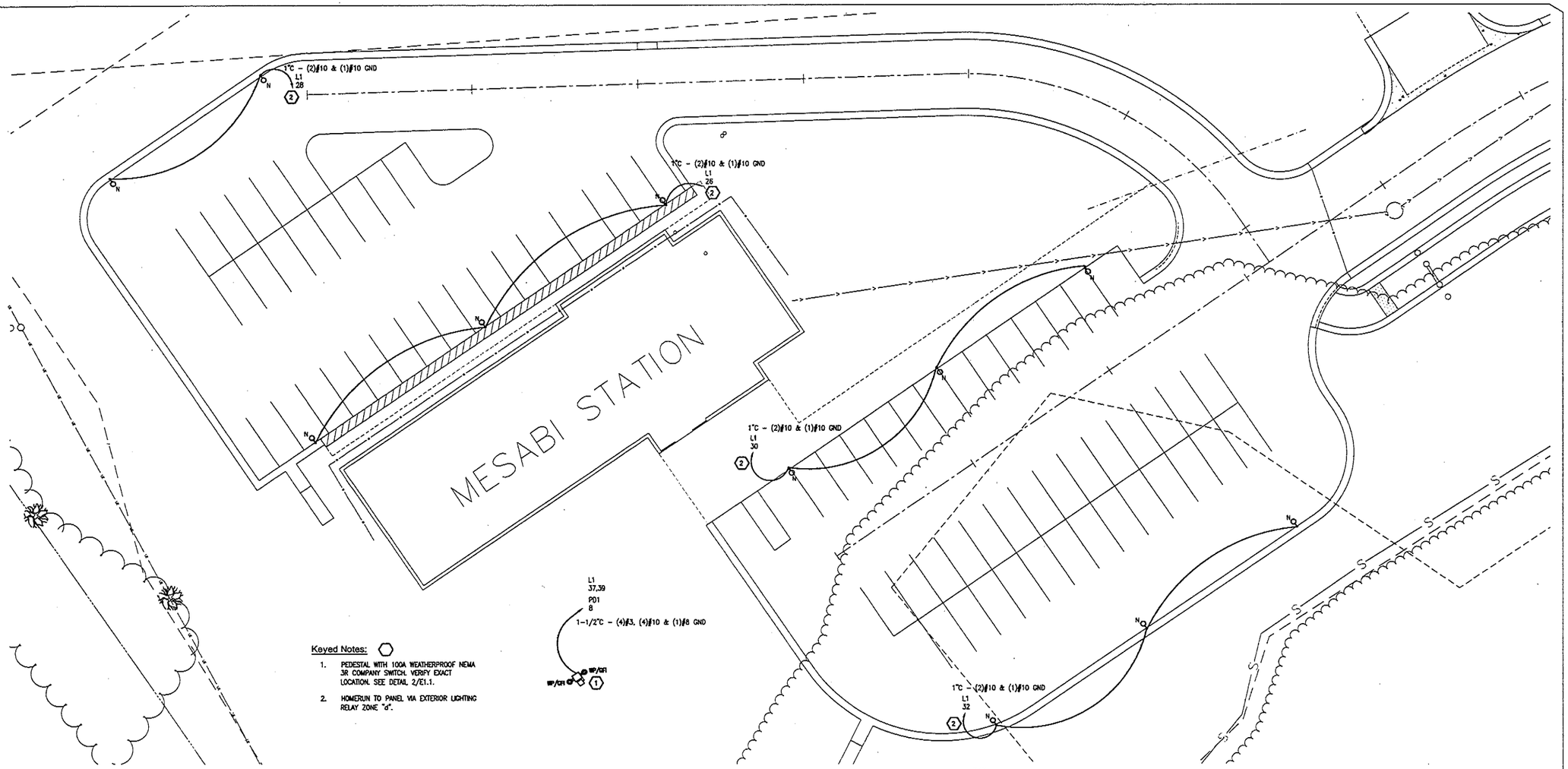
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

signature Mark R. Udd

mark	revision/issue	date
2		07-10-09

sheet title FOUNDATION PLAN / FLOOR FRAMING PLAN

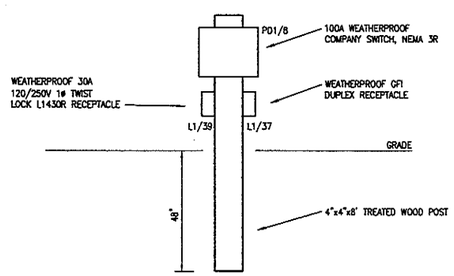
sheet number S2.1



Keyed Notes:

1. PEDESTAL WITH 100A WEATHERPROOF NEMA 3R COMPANY SWITCH. VERIFY EXACT LOCATION. SEE DETAIL 2/E1.1.
2. HOMERUN TO PANEL VIA EXTERIOR LIGHTING RELAY ZONE "d".

1 SITE PLAN
1/16" = 1'-0"



2 PEDESTAL DETAIL
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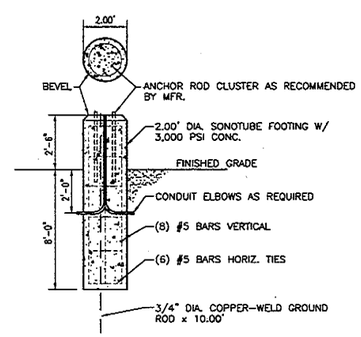
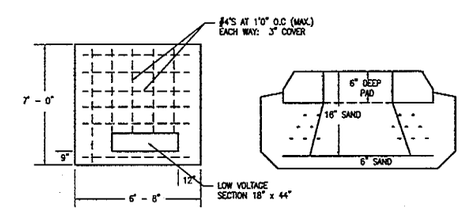


3 POLE BASE DETAIL
NO SCALE



NOTES:

1. AIR ENTRAINED CONCRETE - 4000 PSI AFTER 28 DAYS, MAX AGGREGATE 3/4".
2. STEEL FLOAT FINISH.
3. REINFORCEMENT: TYPE A - 305 NEW BILLET STOCK A.S.T.M. GRADE 60.
4. ALL REINFORCING TO BE NO. 4 12" O.C. EACH WAY. WIRE TIE ALL CROSSINGS.
5. APPLY MEMBRANE CURING COMPOUND, MEETING ASTM C 309, AT MANUFACTURER'S PRESCRIBED RATE AFTER REMOVAL OF FORMS.
6. CHAMFERED EDGE ALONG OUTSIDE EDGES.
7. VERIFY ALL PAD DIMENSIONS PRIOR TO PAD INSTALLATION. SIZE OF PAD AND HIGH/LOW VOLTAGE SECTION TO SUIT TRANSFORMER TO BE INSTALLED.
8. GROUND SLEEVE MAY BE PICKED UP AT MINNESOTA POWER SERVICE CENTER, MONDAY-FRIDAY, BETWEEN 8 AM - 3 PM.

4 TRANSFORMER PAD DETAIL
NO SCALE

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project #	06133
date	April 24, 2009
file name	6133E01.dwg
drawn by	BAR
checked by	TRL
name	Terence R. Larson
reg. #	17136
sign date	April 24, 2009

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

signature Terence R. Larson

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mark	revision/issue	date
CD	CD COMPLETION	APRIL 24, 2009

ELECTRICAL SITE PLAN

sheet title

sheet number E1.1