



CALHOUN COUNTY ROAD DEPARTMENT CHEMICAL STORAGE FACILITY

13300 15 MILE ROAD
MARSHALL, MICHIGAN

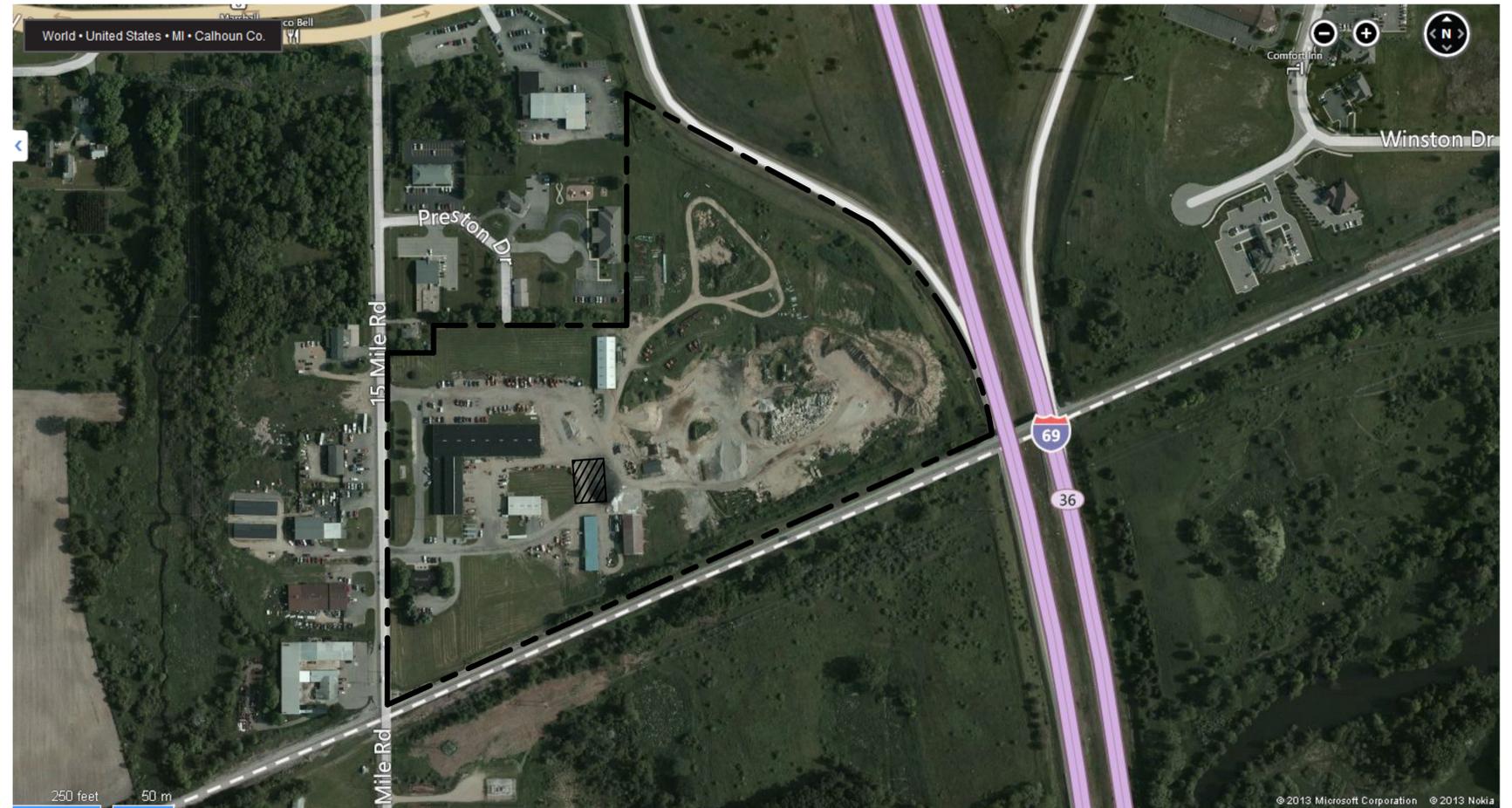
CONSTRUCTION DOCUMENTS

July 8, 2014

OWNER:
CALHOUN COUNTY ROAD DEPARTMENT
13300 15 MILE ROAD
MARSHALL, MI 49068

PROJECT LOCATION:
CALHOUN COUNTY ROAD DEPARTMENT
13300 15 MILE ROAD
MARSHALL, MI 49068

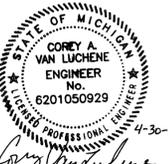
ARCHITECT:
DLZ MICHIGAN, INC.
1425 KEYSTONE AVE.
LANSING, MI 48911
PH: (517) 393-6800
FAX: (517) 272-7390



DLZ PROJECT NO.
1341.6538.90



ARCHITECT/ENGINEER:
DLZ MICHIGAN, INC.
1425 Keystone Avenue
Lansing, MI 48911
Tel: (517) 393-6800
Fax: (517) 272-7390

<p>SITE DEVELOPMENT</p>  <p>ROBERT M. SHERMAN, RLA</p>	<p>ARCHITECTURAL</p>  <p>ERIC T. BEAULIEU, AIA</p>	<p>STRUCTURAL</p>  <p>COREY A. VAN LUCHENE, P.E.</p>	<p>MECHANICAL</p>  <p>JOSHUA R. APLING, P.E.</p>	<p>ELECTRICAL</p>  <p>MARVIN L. HITCHCOCK, P.E.</p>
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Code Compliance Plans

BUILDING CODE: 2009 MICHIGAN BUILDING CODE
2011 NATIONAL ELECTRIC CODE
2012 MICHIGAN MECHANICAL CODE
2012 MICHIGAN PLUMBING CODE
2009 INTERNATIONAL FIRE CODE

BUILDING USE/ OCCUPANCY: CLASSIFICATION
(S-2) LOW-HAZARD STORAGE

CONSTRUCTION CLASSIFICATION: V-B

OCCUPANCY LOAD: N/A

SOIL BEARING PRESSURE: 2000 PSF

ROOF LOADS: 40 PSF

REFER TO S0.1 FOR ADDITIONAL LOADING DESIGN CRITERIA.

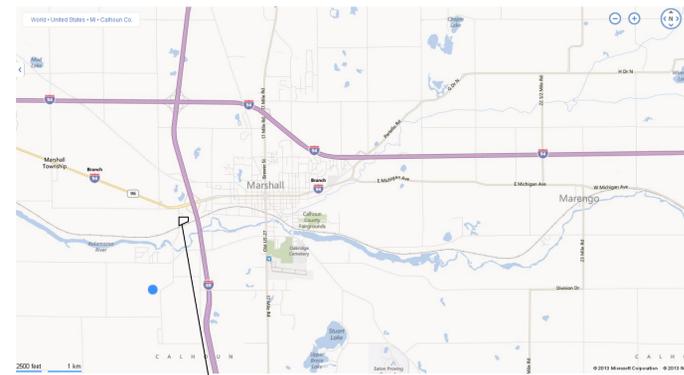
Symbols

SYMBOL	DESCRIPTION
	DRAWING NAME
	DRAWING TITLE
	DRAWING SCALE
	SHEET NUMBER
	ROOM NAME
	ROOM NUMBER
	DOOR MARK TARGET
	KEYNOTE TARGET
	WALL TYPE TARGET
	WINDOW TARGET
	EXTERIOR ELEVATION TARGET
	VERTICAL ELEVATION BUBBLE
	WALL SECTION TARGET
	BUILDING SECTION TARGET
	INTERIOR ELEVATION TARGET
	DETAIL TARGET
	NORTH ARROW

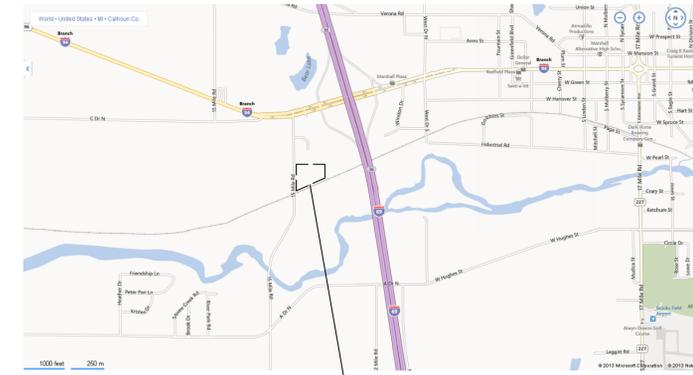
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Location Map



PROJECT LOCATION



PROJECT LOCATION

General Notes

- A. CONTRACTOR IS RESPONSIBLE TO CONFORM WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES AND REGULATIONS INCLUDING APPLICABLE ORDINANCES AND REFERENCED STANDARDS.
- B. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO SUBMITTING A BID OR BEGINNING ANY WORK. CONDITIONS FOUND TO BE IN VARIANCE FROM THE INFORMATION IN THE DRAWINGS OR PROJECT MANUAL SHALL BE SUBMITTED TO THE ARCHITECT IN WRITING FOR CLARIFICATION.
- C. KEY NOTES ARE MEANT AS A GENERAL GUIDE FOR TYPICAL LOCATIONS. CONTRACTOR TO PERFORM FULL EXTENT OF WORK REQUIRED TO ACCOMPLISH DESIGN INTENT.
- D. SPECIFIC WORK ITEMS SHALL BE COORDINATED AND INTERFACED WITH ALL OTHER TRADES TO ALLOW FOR NEW CONSTRUCTION AND COMPLETE INSTALLATION AS REQUIRED TO ACCOMPLISH DESIGN INTENT.
- E. REFER TO DRAWINGS OF EACH TRADE OR DISCIPLINE FOR ADDITIONAL GENERAL NOTES AND INFORMATION, INCLUDING CIVIL/SITE DEVELOPMENT, ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL.
- F. CONTRACTOR IS RESPONSIBLE FOR ALL WORK IDENTIFIED ON ALL DRAWINGS AND INFORMATION IN THE PROJECT MANUAL, AS A COMPLETE PROJECT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE SPECIFIC SCOPE OF WORK FOR ANY SUBCONTRACTORS FOR THIS PROJECT.
- G. FIELD VERIFY ACTUAL LOCATIONS OF EXISTING UNDERGROUND UTILITIES, STRUCTURES, WATER LINES, STORM AND SANITARY LINES, GAS LINES, ELECTRICAL CONDUIT, AND OTHER UNDERGROUND UTILITIES PRIOR TO PERFORMING EARTHWORK, EXCAVATION, OR UTILITY WORK. ENGAGE THE SERVICES OF A PRIVATE UTILITY LOCATE COMPANY IF NECESSARY TO COMPLETELY LOCATE EXISTING UNDERGROUND UTILITIES AND STRUCTURES.
- H. LOCATION OF ALL TEMPORARY FACILITIES SHALL BE COORDINATED WITH OWNER AND ARCHITECT PRIOR TO MOBILIZATION ON-SITE, INCLUDING BUT NOT LIMITED TO TEMPORARY STAGING AREA, MATERIAL STORAGE AREA, ACCESS DRIVE(S), PARKING AREA, TOPSOIL STOCKPILE AREA, WASTE DISPOSAL AREA, FIELD OFFICES AND TEMPORARY FACILITIES, JOB SIGN, AND TEMPORARY FENCING.
- I. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL MISCELLANEOUS BLOCKING REQUIRED FOR INSTALLATION OF ALL BUILDING COMPONENTS, INCLUDING BUT NOT LIMITED TO FURNISHINGS, FIXTURES, EQUIPMENT, HARDWARE, BRACKETS, AND OWNER-PROVIDED EQUIPMENT. CONTRACTOR SHALL COORDINATE SPECIFIC REQUIREMENTS ASSOCIATED WITH EACH TRADE AND WITH OWNER'S REPRESENTATIVE.
- J. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL MISCELLANEOUS WOOD AND METAL TRIM, FLASHING, CLIP ANGLES, ANCHORS, SUPPORTS, AND CLOSURE TRIM REQUIRED TO PROVIDE A COMPLETE, UNIFORM, AND WEATHERTIGHT ASSEMBLY AS REQUIRED TO ACCOMPLISH THE DESIGN INTENT.
- K. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS. CONTRACTOR SHALL PROVIDE AND INSTALL ALL ACCESSORY COMPONENTS AS REQUIRED TO FULLY COMPLY WITH MANUFACTURER'S RECOMMENDATIONS.
- L. WHERE DISCREPANCIES EXIST IN THE CONTRACT DOCUMENTS INCLUDING DISCREPANCIES BETWEEN DRAWINGS AND PROJECT MANUAL, CONTRACTOR SHALL REQUEST CLARIFICATION IN WRITING FROM ARCHITECT. THE CONTRACTOR SHALL NOT ASSUME ANY ITEM TAKES PRECEDENCE OVER THE OTHER. ANY ACTION THE CONTRACTOR MAKES PRIOR TO NOTIFICATION IN WRITING SHALL BE SOLELY AT THE CONTRACTOR'S RISK.
- M. CONTRACTOR SHALL SEAL ALL PENETRATIONS IN EXTERIOR WALL AND ROOF ASSEMBLIES WITH APPROPRIATE JOINT SEALANT(S) AND FLASHING(S) TO MAINTAIN A WEATHERTIGHT AND AIRTIGHT BUILDING ENVELOPE. ALL JOINTS AND PENETRATIONS SHALL BE SEALED, GASKETED, OR WEATHER-STRIPPED TO MINIMIZE AIR LEAKAGE, INCLUDING THE FOLLOWING:
 1. JOINTS AROUND FENESTRATION AND DOOR FRAMES.
 2. JUNCTIONS BETWEEN WALLS AND FOUNDATIONS, BETWEEN WALLS AT BUILDING CORNERS, BETWEEN WALLS AND FLOORS OR ROOFS, AND BETWEEN WALLS AND ROOF OR WALL PANELS.
 3. OPENINGS AT PENETRATIONS OF UTILITY SERVICES THROUGH ROOFS, WALLS, AND FLOORS.
 4. JOINTS, SEAMS, AND PENETRATIONS OF VAPOR RETARDERS.
 5. ALL OTHER OPENINGS IN THE BUILDING ENVELOPE.
- N. COORDINATE WITH OTHER CONSTRUCTION ACTIVITIES AND CONSTRUCTION SEQUENCING WITH OTHER PROJECT(S) AND WORK BEING PERFORMED CONCURRENTLY ON-SITE.
- O. BUILDING ELEVATION 100'-0" EQUALS SITE ELEVATION 908.5'.
- P. CONTRACTOR TO PROTECT ALL ITEMS WITHIN THE CONSTRUCTION LIMITS (INCLUDING SITE ELEMENTS) THAT ARE DESIGNATED TO REMAIN; ITEMS DAMAGED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT SHALL BE REPAIRED OR REPLACED TO ORIGINAL CONDITION.
- Q. THESE DRAWINGS SHALL NOT BE SCALED TO OBTAIN DIMENSIONS. IF THE DIMENSIONS CANNOT BE DETERMINED BY THE INFORMATION GIVEN, CONTRACTOR SHALL REQUEST CLARIFICATION FROM THE ARCHITECT.
- R. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL NECESSARY DEWATERING ACTIVITIES AS PART OF THE BASE BID AMOUNT.



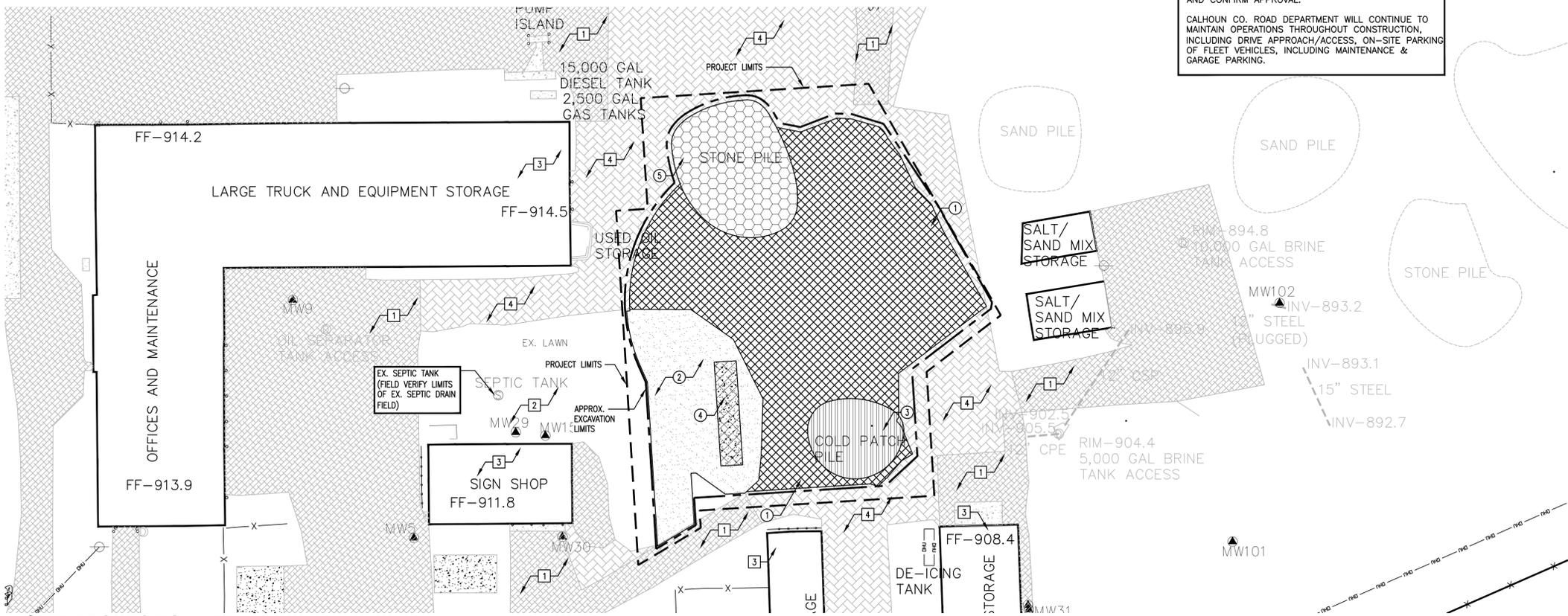
DRAWN: RMC	CHK'D: ETB
DESIGNED: RMC	
APPR'D: ETB	
DATE: MARCH 14, 2014	
PROJECT NUMBER	1341.6538.90

MICHIGAN
MARSHALL
CALHOUN COUNTY ROAD DEPARTMENT
CHEMICAL STORAGE FACILITY
INFORMATION & CODE COMPLIANCE PLAN

DRAWING NUMBER	G1.1
GENERAL	

CONSTRUCTION STAGING PRIOR TO MOBILIZING TO THE SITE, CONTRACTOR WILL COORDINATE STAGING AREAS & CONSTRUCTION ACCESS WITH THE OWNER AND CONFIRM APPROVAL.

CALHOUN CO. ROAD DEPARTMENT WILL CONTINUE TO MAINTAIN OPERATIONS THROUGHOUT CONSTRUCTION, INCLUDING DRIVE APPROACH/ACCESS, ON-SITE PARKING OF FLEET VEHICLES, INCLUDING MAINTENANCE & GARAGE PARKING.



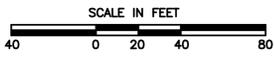
LEGEND

- X FENCE
- STORM SEWER, DMH
- ⊗ SEPTIC TANK ACCESS, CLEANOUT
- UTILITY POLE, LIGHT POLE
- ⊗ CONIFEROUS, DECIDUOUS TREE
- ⊗ MAILBOX, SIGN, GUARDBOOST
- ⊗ PROPERTY CORNER
- GUARDRAIL
- CONCRETE
- ⊗ WATER WELL
- OVERHEAD UTILITIES
- PAVED DRIVE OR LOT
- GRAVEL DRIVE OR LOT
- ⊗ MONITORING WELL
- ⊗ SURVEY CONTROL POINT
- FF-914.2 FINISHED FLOOR ELEVATION

- SITE PREPARATION/REMOVAL LEGEND**
- ① REMOVE, STOCKPILE, AND SALVAGE EX. GRAVEL FOR REUSE (COORDIN. LOCATION W/ OWNER)
 - ② REMOVE EX. TURF AND STRIP TOPSOIL
 - ③ REMOVE EX. COLD PATCH PILE (BY OWNER)
 - ④ REMOVE EX. CONCRETE PAVEMENT
 - ⑤ REMOVE EX. STONE PILE (BY OWNER)
 - PROJECT LIMITS
 - - - - - APPROX. LIMITS OF EXCAVATION
- GENERAL IMPROVEMENT NOTES**
1. UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY PRIOR TO CONSTRUCTION.
 2. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND RELATED SERVICES NEEDED FOR THE COMPLETE AND ACCEPTABLE INSTALLATION OF A NEW SLAT STORAGE BUILDING, INCLUDING ALL SITEWORK, GRAVEL SHAPING/PLACEMENT, BITUMINOUS PAVING, CONCRETE PAVEMENT, MECHANICAL AND ELECTRICAL WORK, IN ACCORDANCE WITH THE DESIGN PLANS, SPECIFICATIONS, STATE AND LOCAL CODES, INDUSTRY STANDARDS, AND AS DIRECTED BY THE ROAD DEPARTMENT PROJECT MANAGER TO COMPLETE THE WORK AT NOT ADDITIONAL COST TO THE OWNER.
 3. THE SUBBASE MATERIAL SHALL BE EVENLY SPREAD AND COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM UNIT WEIGHT, UNLESS NOTED OTHERWISE ON PLAN OR DIRECTED BY THE ROAD DEPARTMENT PROJECT MANAGER. THE SUBBASE MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 9 INCHES IN DEPTH.
 4. THE AGGREGATE BASE COURSE, MDT 22A, SHALL BE PLACED IN ONE UNIFORM LAYER AND COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM UNIT WEIGHT.
 5. ALL UNWANTED MATERIAL, RUBBISH, AND DEBRIS, SHALL BE LEGALLY DISPOSED OFF-SITE BY THE CONTRACTOR.
 6. REFER TO DRAWING NUMBER A2.1 FOR ELECTRICAL WORK AND REQUIREMENTS.
 7. PRIOR TO SUBMITTING BID, THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD CONDITIONS AND DETERMINE THE EXTENT OF THE WORK INVOLVED. THE CONTRACTOR SHALL NOTIFY THE ROAD DEPARTMENT PROJECT MANAGER OF ANY DISCREPANCIES WHICH MAY EFFECT THE WORK.
 8. ALL NEW HOT MIX ASPHALT PAVEMENT SHALL BE ADEQUATELY SLOPED (1% MIN.) FOR PROPER DRAINAGE TO EITHER CATCH BASINS OR GRAVEL AND GRASS AREAS. ALL NEW PAVEMENT SHALL SLOPE AWAY FROM BUILDINGS AND STRUCTURES. PONDING OF WATER ON NEW PAVEMENT WILL NOT BE ACCEPTABLE AND WILL HAVE TO BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ROAD DEPARTMENT PROJECT MANAGER AT NO ADDITIONAL COST TO THE OWNER.
 9. CONSTRUCTION LIMITS SHOWN ARE APPROXIMATE. ADJUSTMENTS TO THE LIMITS INCIDENTAL TO CONSTRUCTION ACTIVITIES MAY BE PERMITTED WITH THE APPROVAL OF THE ROAD DEPARTMENT PROJECT MANAGER. CONTRACTOR SHALL FIELD MARK ANY PROPOSED CHANGES TO THE CONSTRUCTION LIMITS FOR ARCHITECT APPROVAL PRIOR TO BEGINNING CONSTRUCTION.
 10. RESTORE ALL STREET SURFACES, DRIVEWAYS, STAGING AREAS, CULVERTS, ROADSIDE DRAINAGE DITCHES, AND OTHER PUBLIC OR PRIVATE STRUCTURES THAT ARE DISTURBED OR DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITIONS AND TO THE SATISFACTION OF THOSE HAVING JURISDICTION, UNLESS NOTED OTHERWISE ON THE PLANS.
 11. ALL AREAS DISTURBED, NOT BUILT, PAVED OR OTHERWISE COVERED BY CONSTRUCTION, SHALL BE SEEDED PER THE REQUIREMENTS OF SPEC. SECTION 329200. REFER TO SPECIFICATION SECTION 329200 FOR PLANTING/TOPSOIL MIX.
 12. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING THEIR OWN HORIZONTAL AND VERTICAL CONTROL POINTS, BENCHMARKS, ETC. CONTRACTOR IS RESPONSIBLE FOR PROVIDING CONSTRUCTION STAKING AND FIELD LAYOUT. IT IS RECOMMENDED THAT TWO (2) BENCHMARKS BE USED FOR VERIFICATION OF ALL CONSTRUCTION ELEVATIONS. SET ADDITIONAL BENCHMARKS, AS NEEDED TO FACILITATE CONSTRUCTION AND FIELD ENGINEERING.

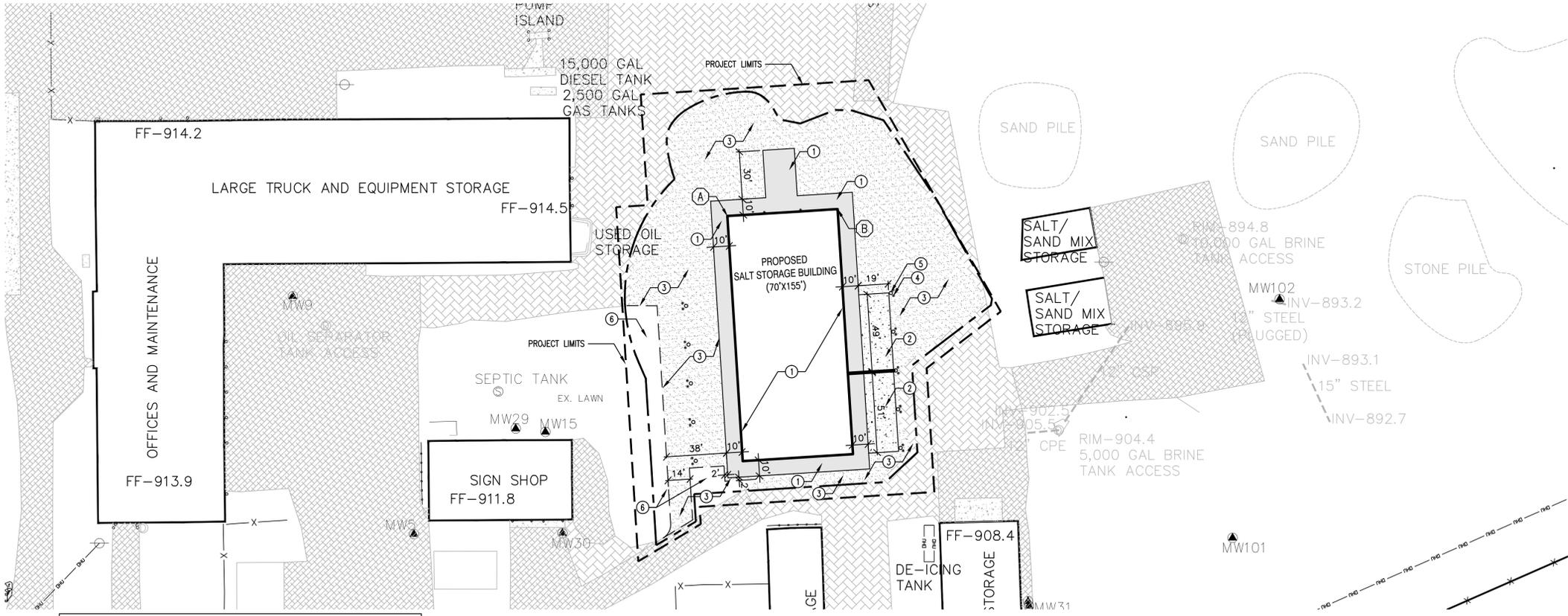
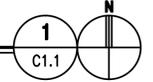
SITE PROTECTION KEY

- 1 EX. PAVEMENT TO REMAIN
- 2 EX. SEPTIC TANK & DRAIN FIELD TO REMAIN. FIELD VERIFY LIMITS AND PROTECT THROUGHOUT DURATION OF THE PROJECT.
- 3 EX. BUILDING TO REMAIN. PROTECT THROUGHOUT CONSTRUCTION
- 4 EX. AGGREGATE SURFACE TO REMAIN



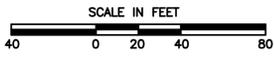
ENLARGED SITE PREPARATION PLAN

SCALE: 1"=40'



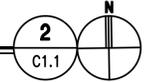
IMPROVEMENT COORDINATE SCHEDULE

KEY	NORTHING	EASTING	DESCRIPTION
A	4880.98	4865.24	NORTHWEST EXTERIOR FOUNDATION CORNER
B	4885.37	4935.10	NORTHEAST EXTERIOR FOUNDATION CORNER



ENLARGED SITE IMPROVEMENTS PLAN

SCALE: 1"=40'



- SITE IMPROVEMENT KEY**
- ① HMA PAVEMENT
 - ② CONCRETE SLAB, REFER TO STRUCTURAL DWGS FOR REQUIREMENTS
 - ③ AGGREGATE SURFACE
 - ④ 6" DIA STEEL BOLLARD
 - ⑤ COLUMN, REFER TO STRUCTURAL DWGS FOR REQUIREMENTS
 - ⑥ LAWN RESTORATION, REFER TO SPECIFICATION FOR REQUIREMENTS



Date: Mar 12, 2014, 9:29am User: ID: rsherman File: M:\PROJ\1341\6538 Calhoun County Salt Barn\Site\Sheets\C1.1 SITE PLAN.dwg



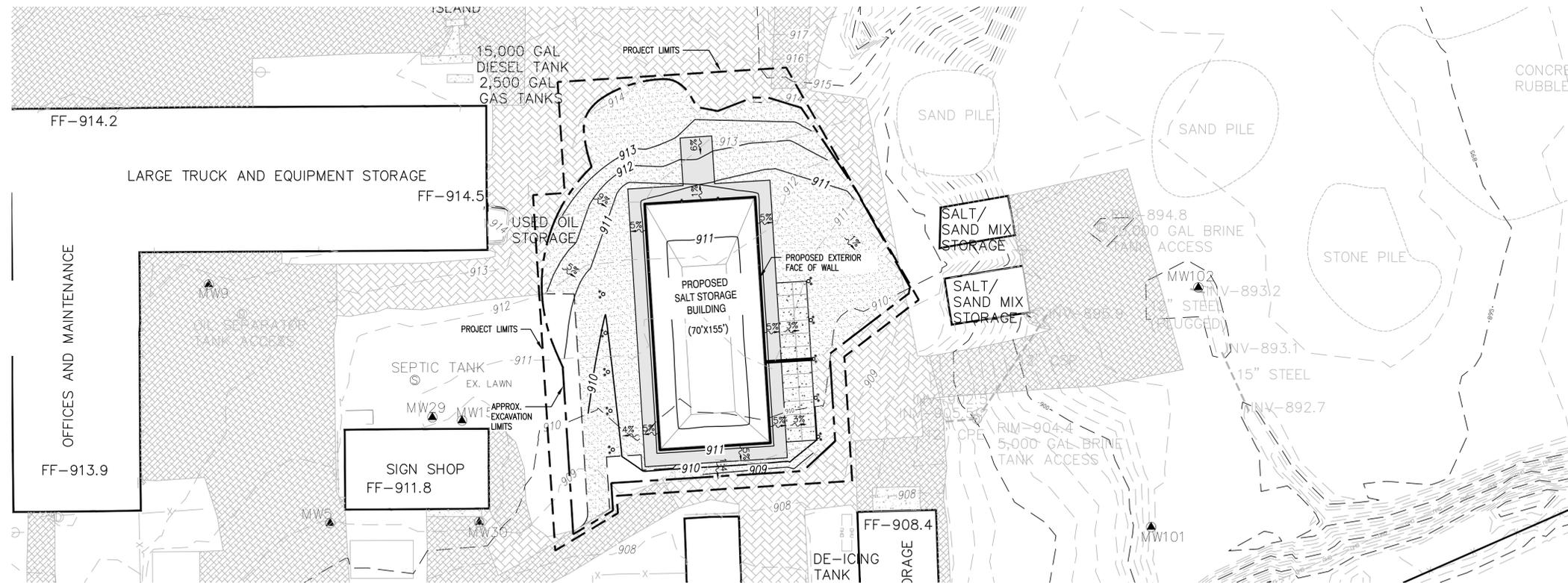
DLZ MICHIGAN, INC.

DRAWN: RMS	CHK'D: SCM
DESIGNED: RMS	
APPROVED: ETB	
DATE: MARCH 14, 2014	
PROJECT NUMBER	1341.6538.90

MARSHALL CALHOUN COUNTY ROAD DEPARTMENT CHEMICAL STORAGE FACILITY

CIVIL PREPARATION AND IMPROVEMENTS PLAN

DRAWING NUMBER C1.1 CIVIL



LEGEND

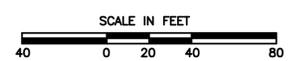
- FENCE
- STORM SEWER, DMH
- SEPTIC TANK ACCESS, CLEANOUT
- UTILITY POLE, LIGHT POLE
- CONIFEROUS, DECIDUOUS TREE
- MAILBOX, SIGN, GUARDPOST
- PROPERTY CORNER
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- WATER WELL
- OVERHEAD UTILITIES
- PAVED DRIVE OR LOT
- GRAVEL DRIVE OR LOT
- MONITORING WELL
- SURVEY CONTROL POINT
- FF-914.2 FINISHED FLOOR ELEVATION

GRADING LEGEND

- 809 --- EXISTING 1' CONTOUR
- 810 --- PROPOSED INDEX CONTOUR
- 809 --- PROPOSED CONTOUR
- ###x PROPOSED SPOT ELEVATION
- 3.2% PROPOSED DIRECTION OF SURFACE RUN-OFF
- PROJECT LIMITS
- APPROX. LIMITS OF EXCAVATION

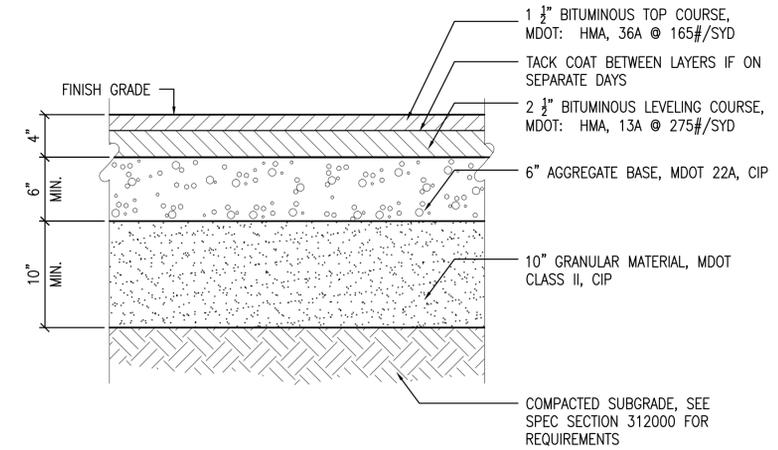
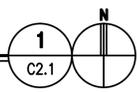
GENERAL GRADING NOTES

1. THREE (3) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT MISS DIG UTILITY PROTECTION SERVICE "811" TO VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES.
2. UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN WERE OBTAINED FROM ABOVE GROUND OBSERVATIONS. THE LOCATION OF UNDERGROUND UTILITIES HAS NOT BEEN DETERMINED IN FIELD SURVEY. THE DESIGN ENGINEER IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION OR THE LOCATION AT WHICH THESE SERVICES EXIST. DIFFERING FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. THE LOCATION OF ALL PUBLIC UTILITIES SHOWN ON THE PLANS ARE TAKEN FROM THE BEST AVAILABLE DATA. THE OWNER SHALL NOT BE RESPONSIBLE FOR ANY OMISSION OR VARIATIONS FROM THE LOCATIONS SHOWN.
3. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. ALL UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED WITH LIKE MATERIAL, IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. THE CONTRACTOR SHALL VERIFY THE DEPTH AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES. THE EXACT LOCATION OF EXISTING UTILITIES SHALL BE DETERMINED BY HAND DIGGING.
4. ALL AREAS DISTURBED OUTSIDE THE PROJECT LIMITS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING PRIOR TO CONSTRUCTION.
5. ALL SPOT GRADES AND GRADE LINES SHOWN ON THE PLANS ARE FINISH GRADES OF THE PROPOSED SURFACING AT GRADE POINTS PER THE TYPICAL SECTIONS.
6. CONTRACTOR SHALL MATCH ALL EXISTING GRADES AT THE PROJECT LIMITS, TYPICAL.
7. PROPOSED GRADES AND SLOPES SHALL MATCH EXISTING GRADES AND SLOPES AT PROJECT LIMITS OR AS SHOWN ON DRAWINGS. WHERE INTERSECTING SLOPE ELEVATIONS VARY, PROVIDE SMOOTH TRANSITIONAL EDGE.
8. TRANSITIONS FROM PROPOSED SIDEWALKS AND PAVEMENTS SHALL BE UNIFORM AND SMOOTH WITHOUT ABRUPT CHANGES IN GRADE OR ALIGNMENT.
9. PROPOSED FINISHED GRADES SHALL PROVIDE FOR POSITIVE DRAINAGE AWAY FROM THE BUILDING AND TO A DRAINAGE STRUCTURE, IF PRESENT, OR MATCH EXISTING GRADES. INFORM ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
10. CONTRACTOR MAY ADJUST PLAN GRADES AS NEEDED TO FACILITATE MATCHING EXISTING PAVEMENT AND LAWN GRADES TO PROVIDE SURFACE DRAINAGE AND PREVENT PONDING STORM WATER.
11. CONTRACTOR SHALL FILL LOW/DEPRESSIONAL GRADES WHICH MAY OCCUR THROUGH REQUIRED DEMOLITION, AS WELL AS, ANY AREA WITHIN THE PROJECT LIMITS, SO AS TO PROVIDE CONSTANT UNIFORM SLOPES
12. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING AN EARTHWORK CALCULATION FOR CUT AND FILL REQUIREMENTS, AND IS RESPONSIBLE FOR INCLUDING IMPORT AND EXPORT OF MATERIALS IN THEIR RESPECTIVE BASE BID OR ALTERNATE BID.
13. THE SUPPORT, PROTECTION AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE COST OF THIS WORK SHALL BE INCLUDED IN THE CONTRACTOR'S BID FOR THE VARIOUS WORK ITEMS.
14. NO EXTRA COMPENSATION WILL BE PAID TO THE CONTRACTOR BY REASON OF COMPLIANCE WITH ANY OF THE REQUIREMENTS INDICATED ON THE PLANS, BUT PAYMENT SHALL BE DEEMED TO BE INCLUDED IN THE BASE AND ALTERNATE BID ITEMS, AS BID UPON, UNLESS OTHERWISE SPECIFICALLY PROVIDED.
15. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING THEIR OWN HORIZONTAL AND VERTICAL CONTROL POINTS, BENCHMARKS, ETC. CONTRACTOR IS RESPONSIBLE FOR PROVIDING CONSTRUCTION STAKING AND FIELD LAYOUT. IT IS RECOMMENDED THAT TWO (2) BENCHMARKS BE USED FOR VERIFICATION OF ALL CONSTRUCTION ELEVATIONS. SET ADDITIONAL BENCHMARKS, AS NEEDED, TO COMPLY WITH THIS REQUIREMENT.



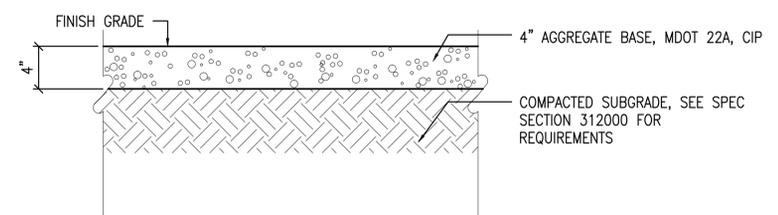
SITE GRADING PLAN

SCALE: 1"=40'



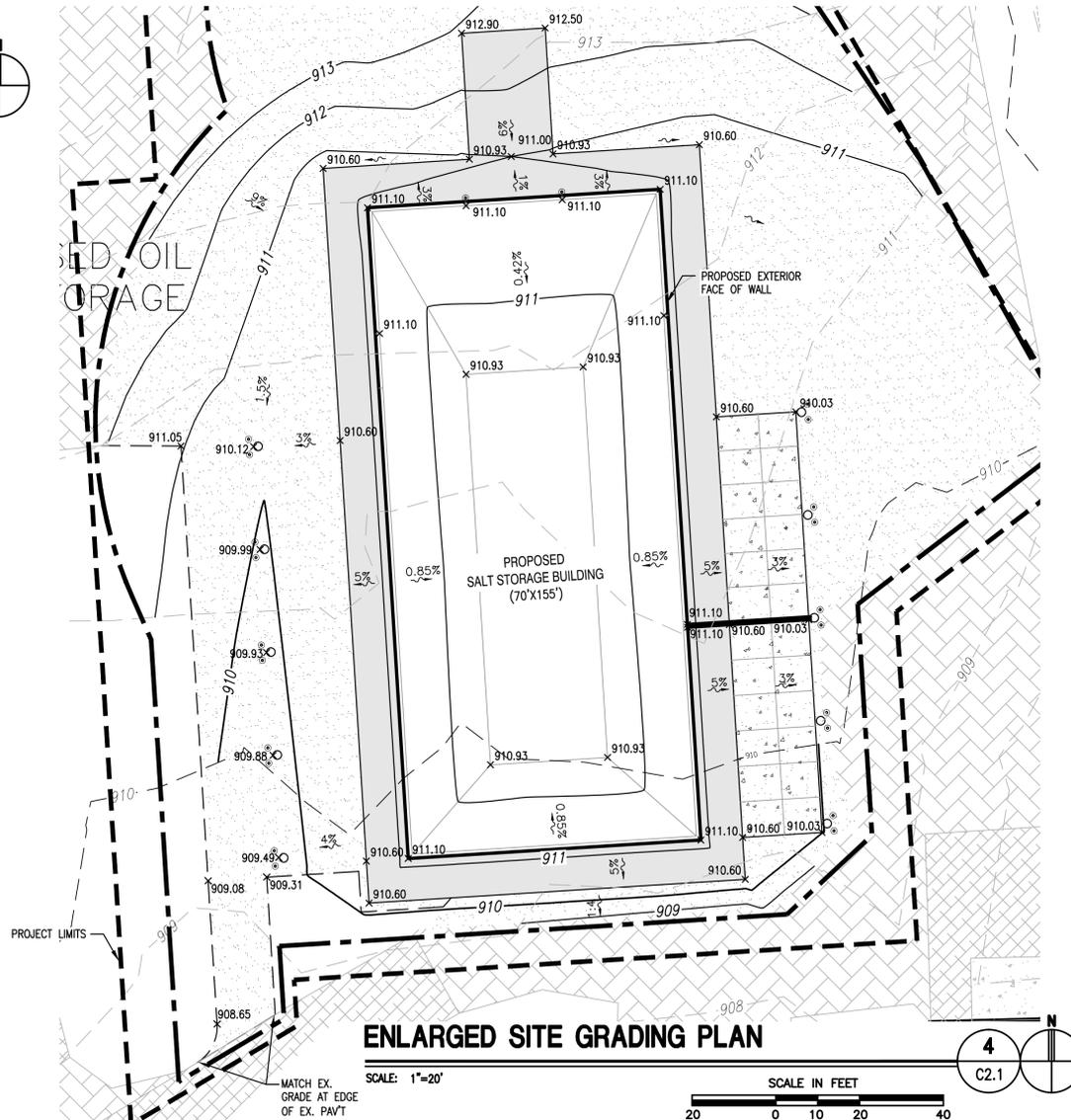
HMA PAVEMENT

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



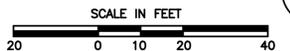
AGGREGATE SURFACE

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



ENLARGED SITE GRADING PLAN

SCALE: 1"=20'



Date: Mar 12, 2014, 9:29am User: ID: rsherman File: M:\PROJ\1341\6538 Calhoun County Salt Storage\Site\Drawings\C2.1 GRAD.DTL(S.dwg)



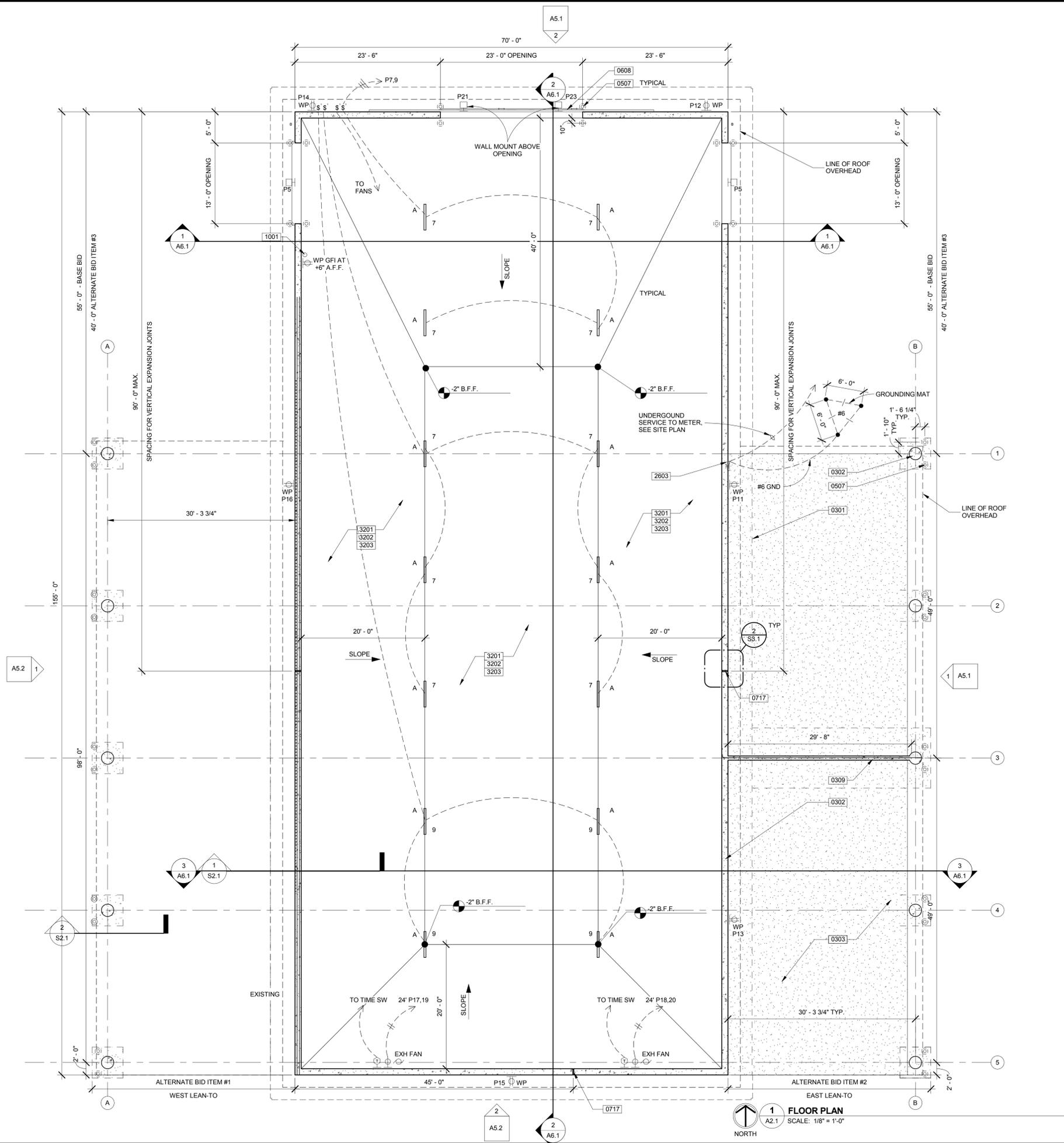
DRAWN: RMS	CHK'D: SCM
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MICHIGAN
MARSHALL
CALHOUN COUNTY ROAD DEPARTMENT
CHEMICAL STORAGE FACILITY
CIVIL
SITE GRADING AND TYPICAL DETAILS PLAN

DRAWING NUMBER
C2.1
CIVIL



Know what's below.
Call before you dig.



NOTES:

- A. REFER TO G1.1 FOR ADDITIONAL GENERAL NOTES AND INFORMATION.
- B. ALL COLORS INDICATED ARE PRELIMINARY AND ARE SUBJECT OF FINAL COLOR SELECTIONS AND APPROVAL OF MOCKUPS.
- C. ONLY WALL PLATE, EAVE AND RAKE FASCIA TO BE TREATED LUMBER.
- D. 3" MINIMUM COVER ON FOOTING REBAR. 2" MINIMUM COVER ON WALL REBAR.

KEYNOTE LEGEND

0301	8'-6" x 1'-6" REINFORCED CONCRETE FOOTING
0302	12" REINFORCED CONCRETE WALL
0303	4" CONCRETE SLAB-ON-GRADE
0309	8" REINFORCED CONCRETE WALL
0507	6" DIA. GALVANIZED STEEL BOLLARD, 48" HIGH
0608	WOOD DOOR
0717	EXPANSION JOINT, 90'-0" MAX SPACING
1001	BRACKET-MOUNTED FIRE EXTINGUISHER, TYPE A-B-C
2603	NEW CIRCUIT BREAKER PANEL "P" - SEE SCHEDULE
3201	1 1/2" TOP COURSE, MDOT: HMA, 36A @ 165#/SYD
3202	2 1/2" BITUMINOUS LEVELING COURSE, MDOT: HMA, 13A @ 275#/SYD
3203	6" AGGREGATE BASE, MDOT 22A, CIP

ELECTRICAL SYMBOLS

- LED - TYPE A SURFACE MOUNTED
- SINGLE PHASE MOTOR
- LED WALL MOUNTED ABOVE DOOR
- CONV OUTLET FOR FAN (SINGLE) (240V, 1P)
- WP WEATHER PROOF GFI CONV. OUTLET (DOUBLE)
- THERMAL PROTECTION SWITCH
- SINGLE POLE SWITCH TIME SWITCH

PANELBOARD SCHEDULE

CIRCUIT NO.	POLES/TRIP	CIRCUIT IDENT.	REMARKS
P 120/240V, 1Ø 3W, 70A, MCB, 30 POLE, SURFACE, NEMA 3R, SQUARE D QO 30M 100RB			
1-4	1-20	SPARE	
5	1-20	EXTERIOR LIGHTS (E-W)	PHOTOCELL AT EACH LIGHT
6	1-20	BRINE PUMP CONTROLS OUTLET	
7,9	1-20	INTERIOR LIGHTS	
8,10	2P-25	SPARE	
11,13,15	1P-20	EXTERIOR RECEPTACLES	
12,14,16	1P-20	EXTERIOR RECEPTACLES	
22,24-30	1P	SPACE	
(17,19) (18,20)	2P-20	EXHAUST FAN 1 1/2 HP	TWO FANS
21,23	1P-20	EXTERIOR LIGHTS (NORTH)	TWIN LIGHT TWO CIRCUITS

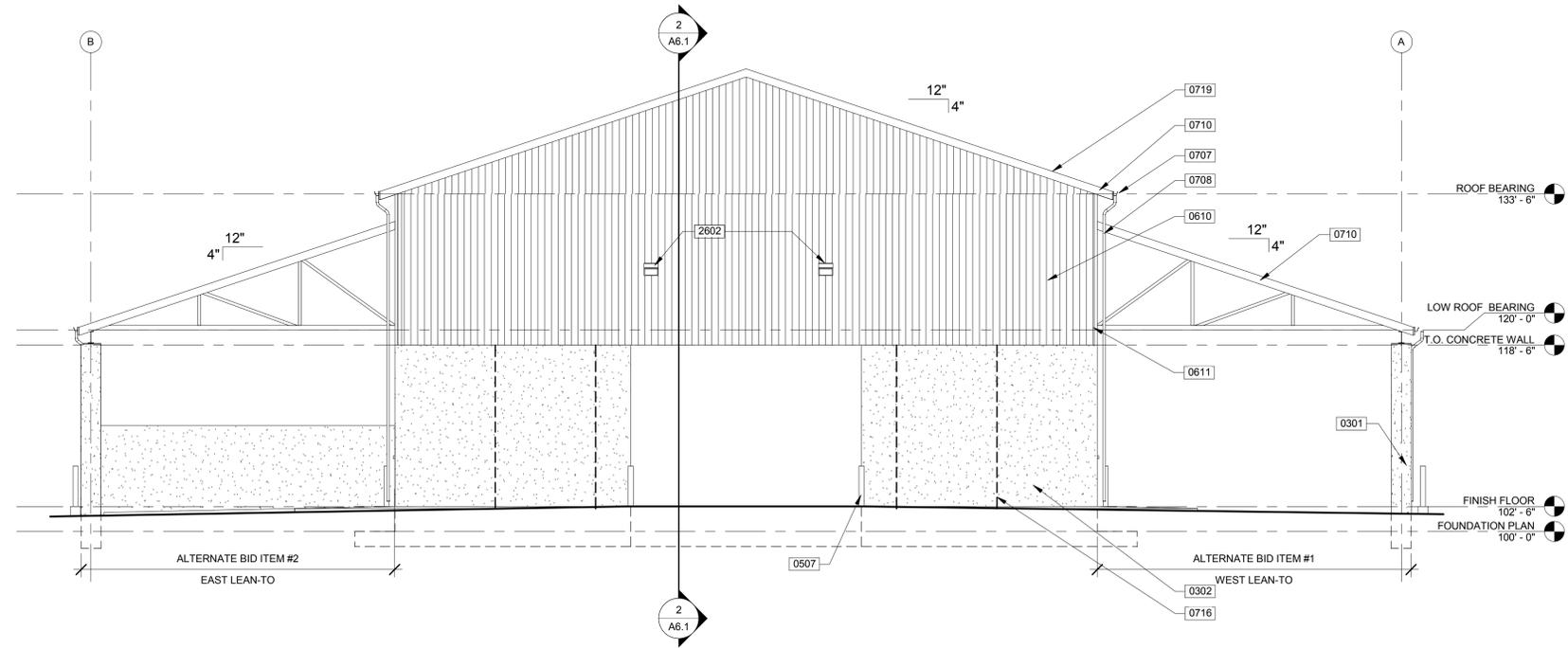


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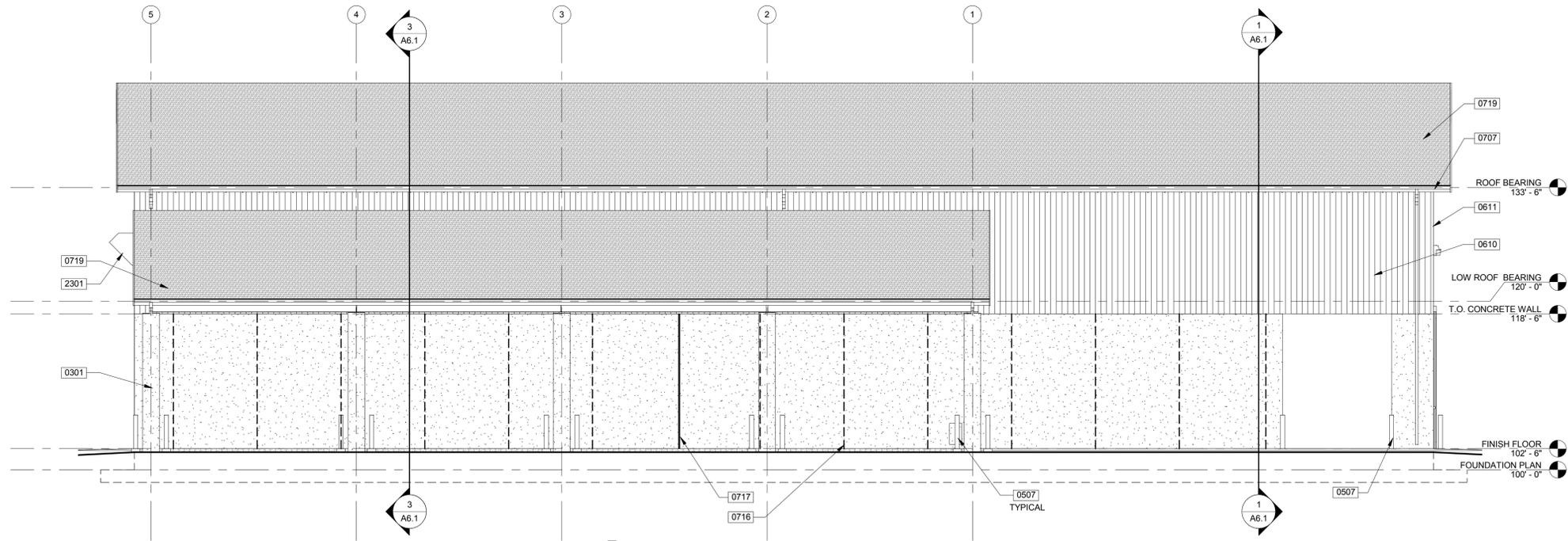
DRAWN: RMC
DESIGNED: RMC
APPROV'D: EIB/WH
DATE: MARCH 14, 2014
PROJECT NUMBER
1341.6538.90

MICHIGAN
MARSHALL
CALHOUN COUNTY ROAD DEPARTMENT
CHEMICAL STORAGE FACILITY

DRAWING NUMBER
A2.1
ARCHITECTURAL
FLOOR PLAN



2 NORTH ELEVATION
 A5.1 SCALE: 1/8" = 1'-0"



1 EAST ELEVATION
 A5.1 SCALE: 1/8" = 1'-0"

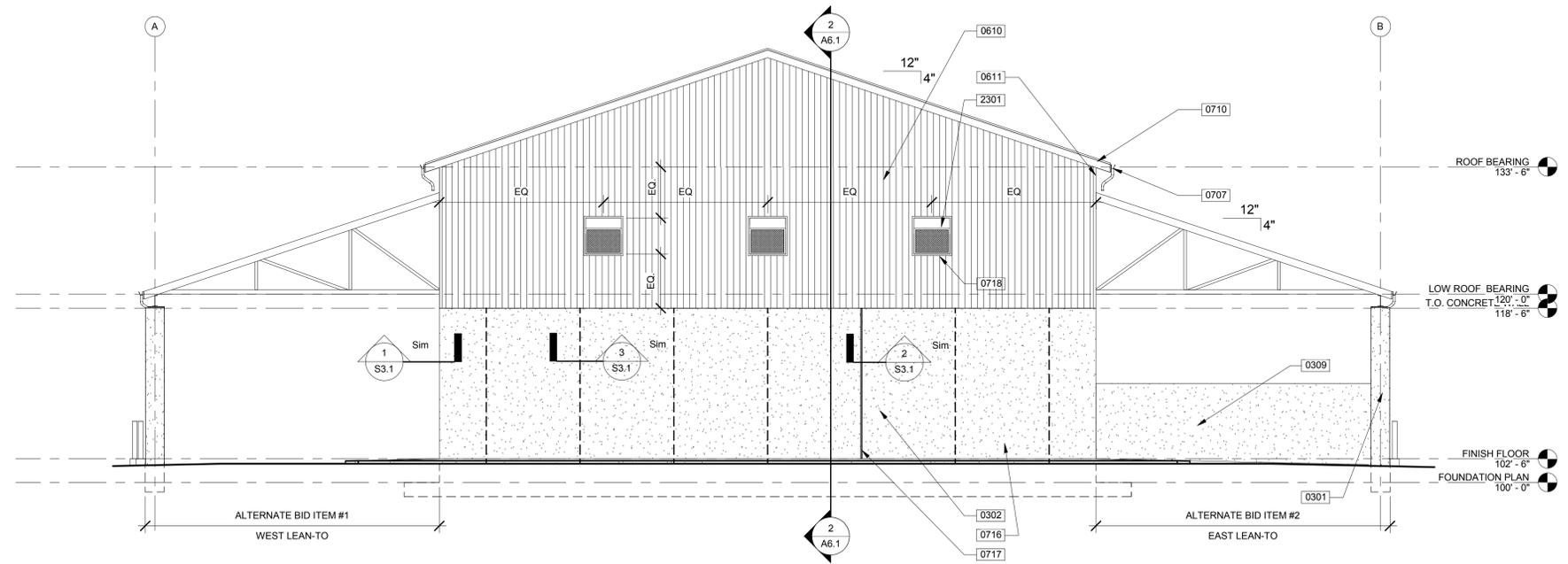
KEYNOTE LEGEND

0301	8'-6" x 1'-6" REINFORCED CONCRETE FOOTING
0302	12" REINFORCED CONCRETE WALL
0507	6" DIA. GALVANIZED STEEL BOLLARD, 48" HIGH
0610	5/8" T1-11 PLYWOOD
0611	1"x4" BOARDS AT EACH CORNER
0707	5" METAL GUTTER, BEVEL PROFILE
0708	5" METAL DOWNSPOUT
0710	SHEET METAL FLASHING WITH DRIP EDGE
0716	CONTROL JOINTS AT 10'-0" O.C., TYPICAL
0717	EXPANSION JOINT, 90'-0" MAX SPACING
0719	ASPHALT SHINGLES ON 15# FELT ON 3/4" ROOF SHEATHING
2301	EXHAUST FAN WITH WEATHERHOOD AND BIRDSCREEN
2602	LED LIGHT FIXTURE, WALL MOUNTED

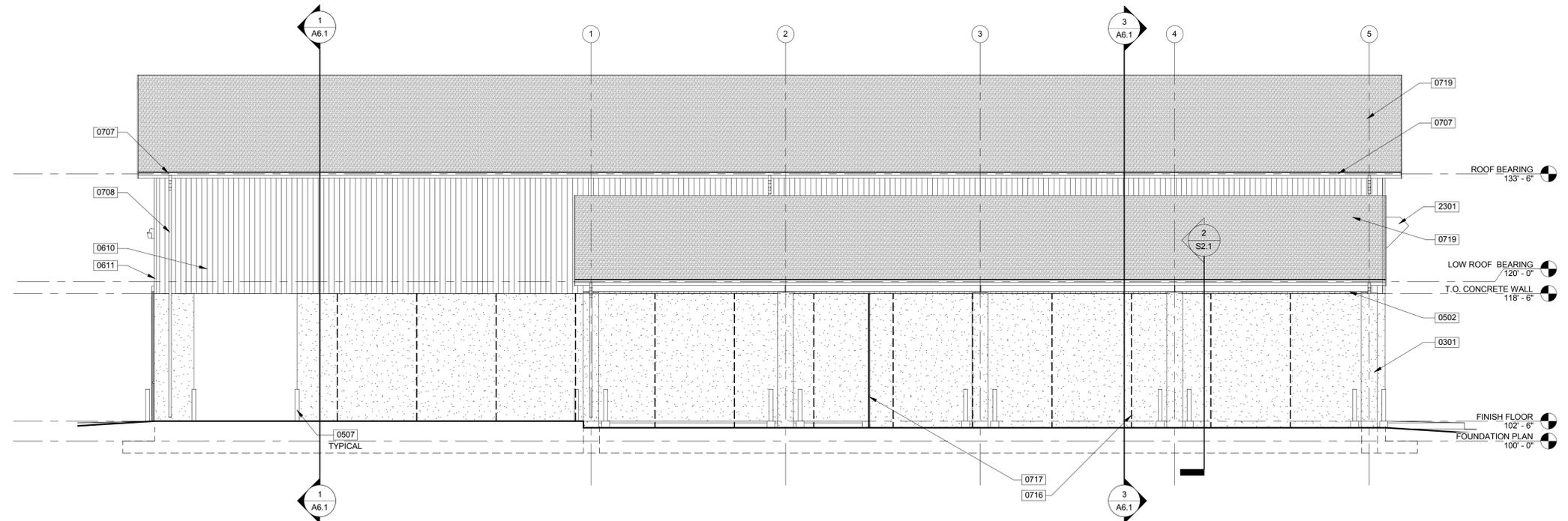
DRAWN: RMC	CHK'D: ETB
DESIGNED: RMC	
APPR'D: ETB	
DATE: MARCH 14, 2014	
PROJECT NUMBER	1341.6538.90

MARSHALL	MICHIGAN
CALHOUN COUNTY ROAD DEPARTMENT	
CHEMICAL STORAGE FACILITY	
EXTERIOR ELEVATIONS	

DRAWING NUMBER	A5.1
ARCHITECTURAL	



2 SOUTH ELEVATION
 A5.2 SCALE: 1/8" = 1'-0"



1 WEST ELEVATION
 A5.2 SCALE: 1/8" = 1'-0"

KEYNOTE LEGEND

- 0301 8'-6" x 1'-6" REINFORCED CONCRETE FOOTING
- 0302 12" REINFORCED CONCRETE WALL
- 0309 8" REINFORCED CONCRETE WALL
- 0502 STEEL BEAM
- 0507 6" DIA. GALVANIZED STEEL BOLLARD, 48" HIGH
- 0610 5/8" T-1-11 PLYWOOD
- 0611 1"x4" BOARDS AT EACH CORNER
- 0707 5" METAL GUTTER, BEVEL PROFILE
- 0708 5" METAL DOWNSPOUT
- 0710 SHEET METAL FLASHING WITH DRIP EDGE
- 0716 CONTROL JOINTS AT 10'-0" O.C., TYPICAL
- 0717 EXPANSION JOINT, 90'-0" MAX SPACING
- 0718 METAL MOLDING
- 0719 ASPHALT SHINGLES ON 15# FELT ON 3/4" ROOF SHEATHING
- 2301 EXHAUST FAN WITH WEATHERHOOD AND BIRDSCREEN

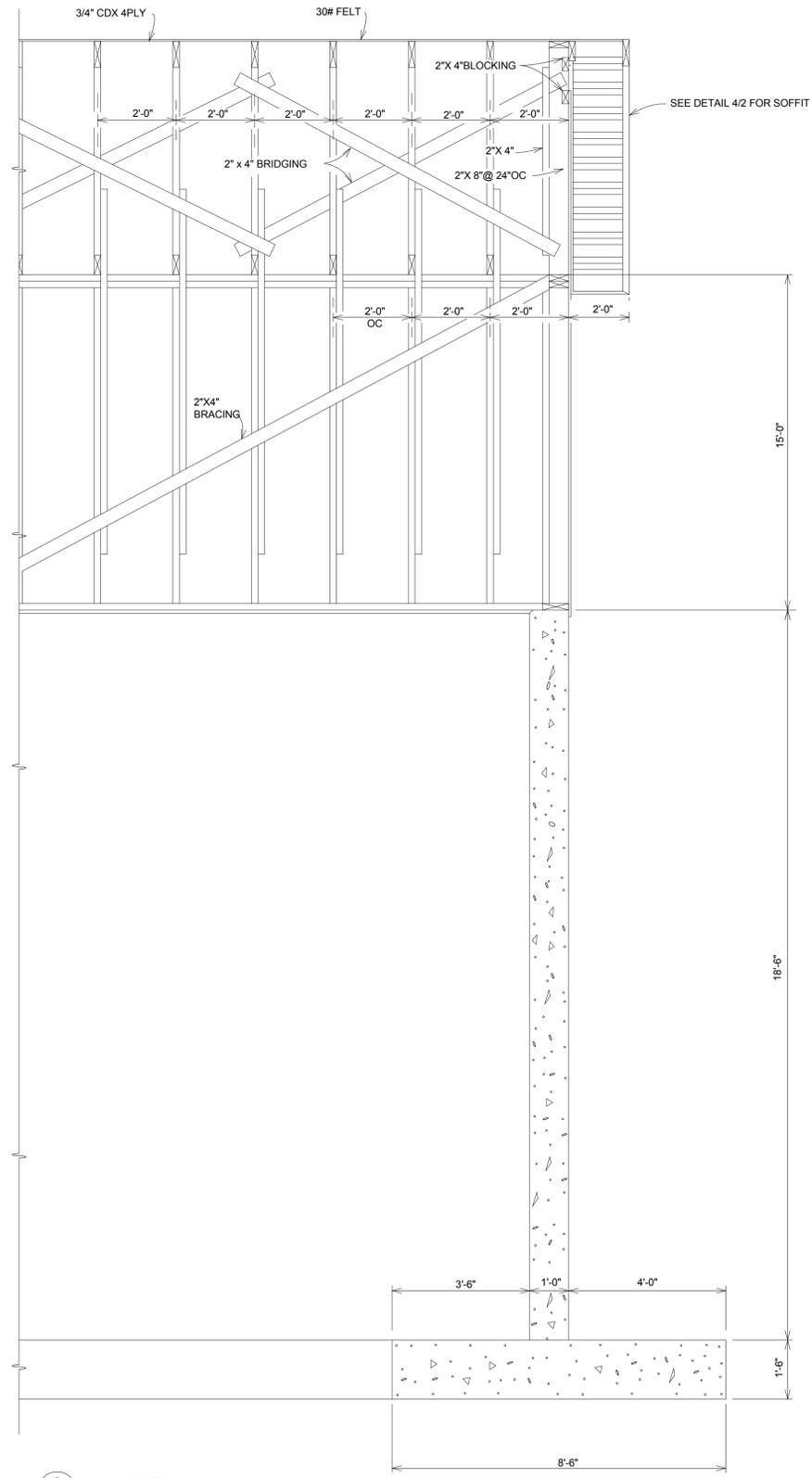


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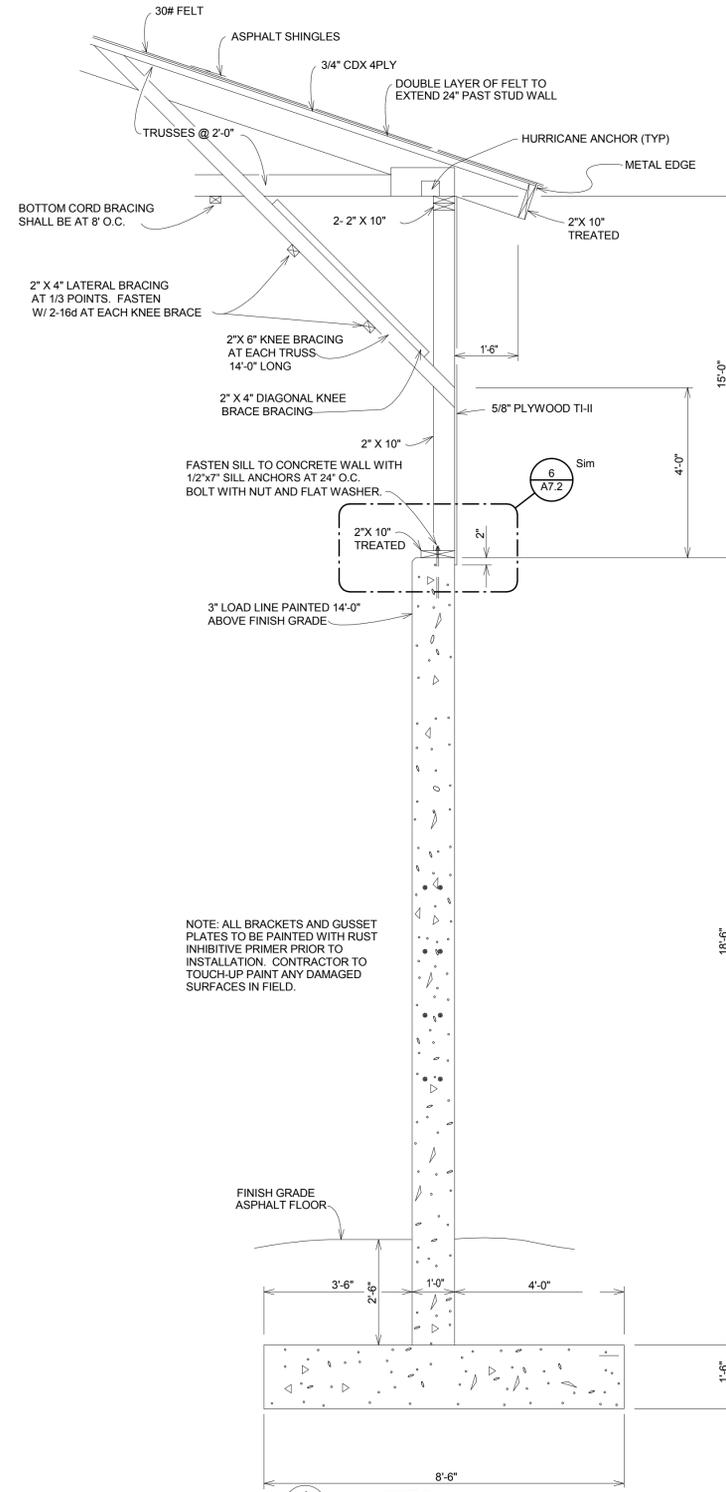
DRAWN: RMC	CHK'D: ETB
DESIGNED: RMC	
APPROV'D: ETB	
DATE: MARCH 14, 2014	
PROJECT NUMBER	1341.6538.90

MICHIGAN
 MARSHALL
 CALHOUN COUNTY ROAD DEPARTMENT
 CHEMICAL STORAGE FACILITY
 EXTERIOR ELEVATIONS

DRAWING NUMBER
A5.2
 ARCHITECTURAL

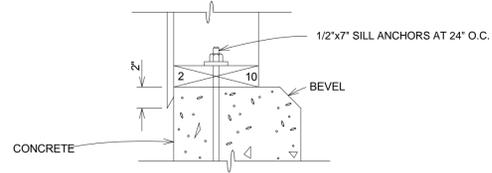


3 WALL SECTION
 A7.1 SCALE: 1 1/2" = 1'-0"

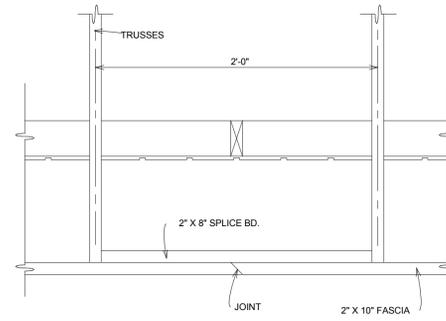


1 WALL SECTION
 A7.1 SCALE: 1 1/2" = 1'-0"

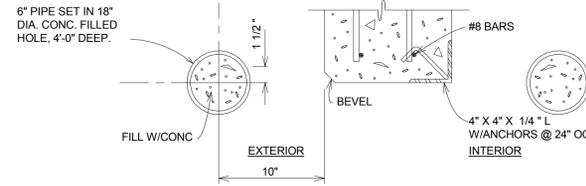
		MICHIGAN	
		MARSHALL	
CALHOUN COUNTY ROAD DEPARTMENT CHEMICAL STORAGE FACILITY		DRAWING NUMBER A7.1	PROJECT NUMBER 1341.6538.90
WALL SECTIONS - 1		ARCHITECTURAL	
		DLZ MICHIGAN, INC.	



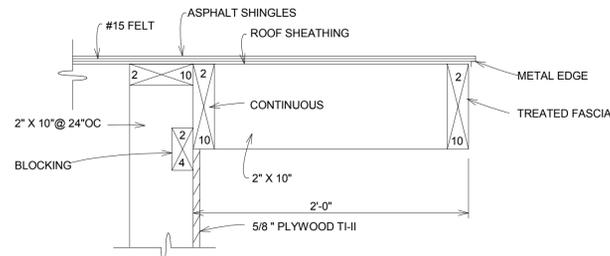
6 DETAIL
 A7.2 SCALE: 1 1/2" = 1'-0"



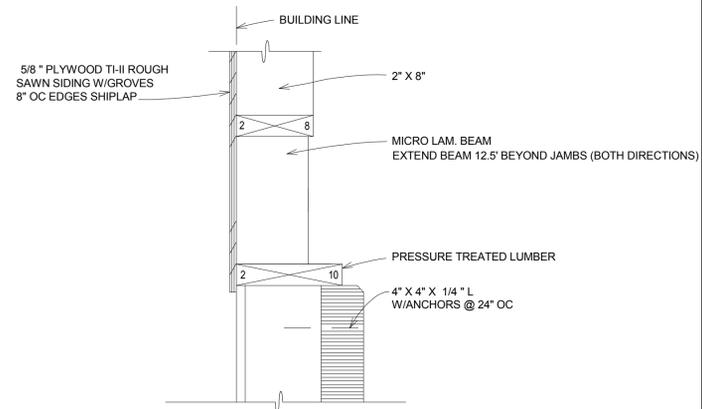
4 FASCIA SPLICE DETAIL
 A7.2 SCALE: 1" = 1'-0"



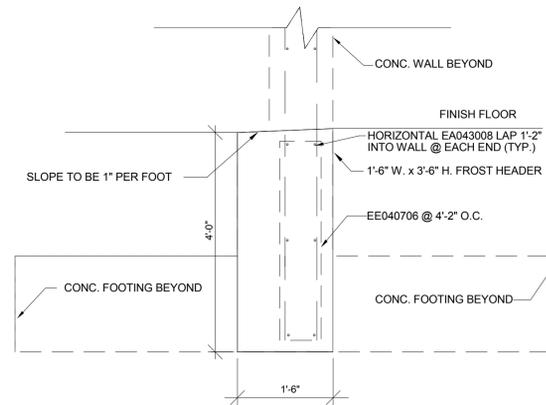
5 DETAIL
 A7.2 SCALE: 1 1/2" = 1'-0"



3 DETAIL
 A7.2 SCALE: 1 1/2" = 1'-0"



2 DETAIL
 A7.2 SCALE: 1 1/2" = 1'-0"



1 FROST HEADER DETAIL
 A7.2 SCALE: 1 1/2" = 1'-0"

KEYNOTE LEGEND



DLZ MICHIGAN, INC.

DRAWN: RMC
 DESIGNED: RMC
 APPR'D: ETB
 DATE: MARCH 14, 2014
 PROJECT NUMBER
 1341.6538.90

MICHIGAN
 MARSHALL
 CALHOUN COUNTY ROAD DEPARTMENT
 CHEMICAL STORAGE FACILITY
 WALL SECTION DETAILS

DRAWING NUMBER
A7.2
 ARCHITECTURAL

DESIGN DATA

- DESIGN DATA:
ALL DESIGN IS IN CONFORMANCE WITH THE 2009 INTERNATIONAL BUILDING CODE (IBC) AND ASCE 7-05 "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES" AS AMENDED BY THE MICHIGAN ADMINISTRATIVE CODE. BUILDING CATEGORY IS TYPE I.
- DESIGN DEAD LOADS:
WEIGHT OF ALL MATERIALS OF CONSTRUCTION INCORPORATED INTO THE BUILDING INCLUDING BUT NOT LIMITED TO WALLS, ROOFS, FINISHES, CLADDING, EQUIPMENT AND OTHER SIMILARLY INCORPORATED ITEMS AND EQUIPMENT.
ROOF TOP CHORD - 12 PSF
ROOF BOTTOM CHORD - 5 PSF
- DESIGN LIVE LOADS:
UNIFORM (PSF) CONC. (LBS)
ROOF LIVE LOAD 40 2000
DRIVEWAYS SUBJECT TO TRUCKING 250 8000
- WIND LOADING CRITERIA:
BASIC 3-SECOND WIND SPEED V=90 MPH
I= 0.87
EXPOSURE C
GCPI=0.18 (ENCLOSED STRUCTURES)
GCPI=0.00 (OPEN STRUCTURES)
REFER TO DETAIL 6/S3.1 FOR COMPONENT AND CLADDING PRESSURES
- SNOW LOADING CRITERIA:
PG=30 PSF
PF=20 PSF
I=0.80
CE=1.00
CT=1.20
- SEISMIC DESIGN CRITERIA:
I=1.00
SS=0.118
S1=0.048
SDS=0.126
SD1=0.077
SITE CLASS D
SEISMIC DESIGN CATEGORY B
BASIC SEISMIC FORCE RESISTING SYSTEM - VERTICAL COMBINATION OF LIGHT-FRAMED WALLS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SEAR RESISTANCE AND ORDINARY REINFORCED CONCRETE SHEAR WALLS
SEISMIC RESPONSE COEFFICIENT - CS = 0.031
RESPONSE MODIFICATION FACTOR - R = 4
DESIGN BASE SHEAR - V = 7.4 KIPS
ANALYSIS PROCEDURE-EQUIVALENT LATERAL FORCE
- SOIL INFORMATION:
NET ALLOWABLE SOIL BEARING PRESSURE BELOW FOOTINGS ON NATURAL MATERIAL IS 3500 PSF. IF ALLOWABLE SOIL BEARING PRESSURE CANNOT BE ACHIEVED, OVER EXCAVATE AS SHOWN IN DETAIL 4/S3.1.
- MATERIALS:
CAST-IN-PLACE CONCRETE F'C=4000 PSI
REINFORCING STEEL FY=60 KSI (ASTM A615 U.N.O.)
WELDED WIRE FABRIC - ASTM A185
STRUCTURAL STEEL:
W-SECTIONS - ASTM A992
PLATES, BARS, RODS, ANGLES AND CHANNELS - A36
ANCHOR RODS - ASTM F1554, GRADE 36
HIGH STRENGTH BOLTS: A325
SNUG TIGHT CONNECTIONS SHALL BE PERMITTED FOR ALL CONNECTIONS
- STUD WALL FRAMING
SOUTHERN PINE NO. 2
KILN DRY TO 19% MAXIMUM MOISTURE CONTENT
VISUALLY GRADED
ROOF RAFTER
SOUTHERN PINE NO. 2
KILN DRY TO 19% MAXIMUM MOISTURE CONTENT
VISUALLY GRADED
ROOF SHEATHING
THICKNESS = 3/4"
GRADE = STRUCTURAL 1
SPAN RATING = #3
WALL SHEATHING
THICKNESS = 5/8"
GRADE = STRUCTURAL 1
SPAN RATING = #3
WOOD FRAMING FASTENERS
NAILS AND STAPLES SHALL CONFORM TO ASTM F1667 AND ITS SUPPLEMENTARY REQUIREMENTS.
NAILS SHALL BE COMMON NAILS UNLESS NOTED OTHERWISE.
NAILS SHALL BE STAINLESS STEEL. HOT DIP GALVANIZED SHALL NOT BE ALLOWED.
- DESIGN STANDARDS:
ACI 318-08 "BUILDING CODE REQUIREMENTS FOR CONCRETE"
ANSI/AISC 360-05 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" - ASD
NDS 2005 "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" - ASD

SOILS AND FOUNDATIONS

- REMOVE TOPSOIL, ORGANIC MATERIAL, FILL, ASPHALT, CONCRETE, ANY DEBRIS FOUND AND ANY LOOSE MATERIAL OR SOILS INDICATED IN THE SOILS REPORT. THE EXPOSED SUBGRADE SHALL BE PROOF ROLLED WITH A MEDIUM-WEIGHT ROLLER TO CHECK FOR SOFT MATERIAL AS DIRECTED BY THE GEOTECHNICAL ENGINEER. BACKFILL SHALL BE ENGINEERED FILL COMPACTED TO 95% OF MODIFIED PROCTOR ASTM D-1557 MAXIMUM DRY DENSITY.
- THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL INVESTIGATION REPORT BY SME DATED 10-11-13
- CONSTRUCTION JOINTS IN STRIP FOOTINGS AND WALLS MAY BE LOCATED AT THE DISCRETION OF THE CONTRACTOR SUBJECT TO REVIEW BY THE ENGINEER. UNLESS SPECIFICALLY NOTED OTHERWISE REINFORCING SHALL BE CONTINUOUS ACROSS JOINTS. SEE TYPICAL CONCRETE WALL AND FOOTING CONSTRUCTION JOINT DETAIL 1/S2.1.
- AFTER FOUNDATION CONSTRUCTION IS COMPLETE, PROPERLY PLACE AND COMPACT BACKFILL MATERIAL. WALLS BACKFILLED ON BOTH SIDES SHALL HAVE BACKFILL PLACED AGAINST BOTH FACES SIMULTANEOUSLY.
- FOR BELOW GRADE WALLS PLAN AREA OF EXCAVATION SHOULD EXTEND OUTWARD FROM THE OUTSIDE EDGE OF THE STRUCTURES FOUNDATION A DISTANCE EQUAL TO THE DEPTH OF OVEREXCAVATION (IF APPLICABLE) PLUS 3 FEET. THE SIDE OF THE EXCAVATION SHOULD BE SLOPED OR BRACED AS REQUIRED PER LOCAL STATE AND FEDERAL SAFETY REGULATIONS. PLACE AND COMPACT SOIL IN 9 INCH LOOSE LIFTS TO AND COMPACT TO 95% OF MODIFIED PROCTOR ASTM D-1557 MAXIMUM DRY DENSITY.
- PROVIDE EITHER ROUGHENED SURFACE OR 3 1/2"x1 1/2" KEYWAY AT HORIZONTAL CONSTRUCTION JOINTS, I.E. BETWEEN FOOTING AND FOUNDATION WALL, FOOTING AND PIER OR SIMILAR LOCATIONS, AT THE CONTRACTOR'S OPTION.

ACI 318 COVER REQUIREMENTS	
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
CONCRETE EXPOSED TO EARTH, OR WEATHER	2"
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:	
SLABS, WALLS, JOISTS BEAMS & COLUMNS	1" 1 1/2"

1
S0.1
ACI 318 COVER REQUIREMENTS
SCALE: 1/8" = 1'-0"

GENERAL

- THE INFORMATION ON THIS SHEET SHALL APPLY TO ALL STRUCTURAL DRAWINGS.
- INFORMATION ON THIS SHEET SUPPLEMENTS THE PROJECT SPECIFICATIONS. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- NUMEROUS OPENINGS MAY BE REQUIRED THROUGH THE ROOF. SEE ALL OTHER TRADES' DRAWINGS FOR SIZE AND EXACT LOCATION. PENETRATIONS LESS THAN 10" ARE NOT INDICATED. PENETRATIONS LESS THAN 10" SHALL HAVE AT LEAST 1'-0" CLEAR BETWEEN OPENINGS, UNLESS APPROVED IN WRITING BY THE SER.
- UNLESS OTHERWISE NOTED, ALL DETAILS, SECTIONS AND NOTES ON THE DRAWINGS ARE INTENDED TO INDICATE DESIGN INTENT AND ARE TO BE TYPICAL FOR SIMILAR SITUATIONS ELSEWHERE.
- THESE DRAWINGS ARE NOT TO BE USED FOR SHOP DETAILING UNLESS SPECIFICALLY STAMPED BY THE STRUCTURAL ENGINEER ON THE DRAWINGS. FOR DETAILING, THESE DRAWINGS ARE NOT TO BE REPRODUCED FOR THE PURPOSE OF USING THEM AS SHOP DRAWINGS. ANY SHOP DRAWINGS SUBMITTED WITH COPIES OF THESE DRAWINGS WITHOUT PRIOR APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD WILL BE REJECTED AND RESUBMITTAL WILL BE REQUIRED.
- THE INFORMATION CONTAINED ON THE STRUCTURAL DRAWINGS IS IN ITSELF INCOMPLETE AND VOID UNLESS USED IN CONJUNCTION WITH ALL OTHER DISCIPLINE DRAWINGS, THE SPECIFICATIONS, TRADE PRACTICES, OR APPLICABLE STANDARDS, CODES, ETC.
- CONTRACTOR IS TO ASSUME FULL RESPONSIBILITY, UNRELIEVED BY REVIEW OF SHOP DRAWINGS OR PERIODIC OBSERVATION OF CONSTRUCTION FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS. FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED ON THE JOB SITE AND BETWEEN INDIVIDUAL DRAWINGS OR SETS OF DRAWINGS FOR FABRICATION PROCESSES AND CONSTRUCTION TECHNIQUES (INCLUDING EXCAVATION, SHORING, SCAFFOLDING, BRACING, ERECTION, FORMWORK, ETC.), FOR COORDINATION OF THE VARIOUS TRADES, AND FOR SAFE CONDITIONS ON THE JOB SITE. VARIATIONS IN FIELD CONDITIONS RELATIVE TO THE CONTRACT DOCUMENTS SHALL BE REPORTED TO THE ENGINEER AS SOON AS THEY ARE FOUND. WORK SHALL NOT PROGRESS UNTIL WRITTEN PERMISSION FROM THE ENGINEER IS OBTAINED.
- TRUSS BRACING IS DIAGRAMMATICAL. CONTRACTOR SHALL PROVIDE SIGNED AND SEALED DRAWINGS AND CALCULATIONS, BY A REGISTERED MICHIGAN DESIGN PROFESSIONAL, FOR THE PERMANENT AND TEMPORARY TRUSS BRACING PRIOR TO INSTALLATION OF ANY TRUSS. CONTRACTOR TO NOTE, TRUSSES WITH LONG SPANS ARE UNSTABLE AND REQUIRE SPECIAL DESIGN AND DETAILING.
- WHERE CONFLICTS OR DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS EXIST THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR CLARIFICATION. THE CONTRACTOR SHALL NOT ASSUME ANY ITEM TAKES PRECEDENCE OVER THE OTHER. ANY ACTION THE CONTRACTOR MAKES PRIOR TO NOTIFICATION SHALL BE AT THE CONTRACTORS RISK.
- SITE OBSERVATION BY THE ENGINEER IS SOLELY FOR THE PURPOSE OF DETERMINING IF THE WORK OF THE CONTRACTOR IS PROCEEDING IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION SHOULD NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO GUARD THE OWNER AGAINST DEFECTS OR DEFICIENCIES IN THE WORK OF THE CONTRACTOR.
- THE DRAWINGS, SPECIFICATIONS, BIM MODEL AND OTHER DOCUMENTS PREPARED BY DLZ MICHIGAN, INC. (DLZ) FOR THIS PROJECT ARE INSTRUMENTS OF THE ENGINEER'S SERVICE, AND MAY BE USED SOLELY WITH RESPECT TO THE PROJECT AND, UNLESS OTHERWISE PROVIDED, THE ENGINEER SHALL BE DEEMED THE AUTHOR OF THESE PLANS AND RETAINS ALL COMMON LAW RIGHTS, TITLES AND INTEREST THEREIN. THE OWNER SHALL BE PERMITTED TO RETAIN COPIES, INCLUDING REPRODUCIBLE COPIES, OF THE ENGINEER'S DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS FOR INFORMATION AND REFERENCE IN CONNECTION WITH THE OWNERS USE AND OCCUPANCY OF THE PROJECT. DLZ SHALL NOT BE LIABLE FOR ANY HARM OR DAMAGE SUFFERED BY ANY PARTY BY REASON OF THE UNAUTHORIZED USE OF THESE PLANS. DLZ EXPRESSLY RESERVES ITS COPYRIGHTS IN THESE PLANS. THESE PLANS MAY NOT BE REPRODUCED, CHANGED, OR COPIED IN ANY FORM OR MANNER WHATSOEVER, NOR MAY THEY BE ASSIGNED OR OTHERWISE MADE AVAILABLE TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPRESS WRITTEN CONSENT OF DLZ.
- DO NOT SUSPEND ANY ITEMS, SUCH AS DUCTWORK, MECHANICAL OR ELECTRICAL FIXTURES, CEILINGS, ETC. FROM WOOD ROOF SHEATHING.

STRUCTURAL AND MISCELLANEOUS STEEL

- THE STRUCTURAL STEEL FOR THIS STRUCTURE AS SHOWN ON THE STRUCTURAL DOCUMENTS WITH ALL RELATED DETAILS ARE NON-SELF SUPPORTING AS DEFINED BY THE A.I.S.C. CODE OF STANDARD PRACTICE AND REMAIN SO UNTIL ALL OF THE STRUCTURAL ELEMENTS, INCLUDING ANY MASONRY WALLS, CONCRETE FLOORS AND SLABS-ON-GRADE ARE IN PLACE AND FULLY CONNECTED AS INDICATED IN THESE DOCUMENTS. THE STRUCTURE IS LATERALLY UNSTABLE UNTIL ALL ELEMENTS ARE IN PLACE, HAVE ATTAINED DESIGN STRENGTH, AND ARE FULLY SECURED TO THE BUILDING, INCLUDING COMPLETION OF FLOOR AND ROOF CONSTRUCTION. ADEQUATE TEMPORARY BRACING IS THE RESPONSIBILITY OF THE CONTRACTOR, AND CONTRACTOR SHALL SEQUENCE CONSTRUCTION OPERATIONS AS REQUIRED, UNTIL THE PERMANENT SYSTEMS ARE EFFECTIVE.
- ALL EXTERIOR STEEL, STEEL LINTELS AND RELIEF ANGLES SHALL BE HOT-DIP GALVANIZED AND PAINTED. REPAIR ANY DAMAGE TO THESE COATINGS THAT MAY OCCUR DURING CONSTRUCTION ACTIVITIES.
- WELD CERTIFICATES FOR REQUIRED WELD POSITIONS SHALL BE SUBMITTED AND APPROVED PRIOR TO ANY STEEL BEING ERECTED.

TIMBER

- MINIMUM FASTENING REQUIREMENTS SHALL BE AS INDICATED IN IBC TABLE 2304.9.1. PORTIONS OF THESE REQUIREMENTS ARE ON DETAIL 3/S0.1.
- PROVIDE ALL HANGERS AND CONNECTORS AS NECESSARY TO SUPPORT INDUCED LOADS TO COMPLETE WORK.
- NUMEROUS PIPES AND DUCTS MAY BE REQUIRED TO PASS THROUGH TRUSSES. WOOD TRUSS MANUFACTURER TO COORDINATE REQUIRED OPENINGS IN TRUSS WITH ALL TRADES AND PROVIDE OPENINGS AS REQUIRED.
- WHERE MEMBER SIZES ARE GIVEN THEY SHALL BE NOMINAL UNLESS SPECIFICALLY DESIGNATED AS ACTUAL DIMENSIONS.
- TIMBER TRUSSES SHALL BE DESIGNED BY A QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS TO BE BUILT IN ACCORDANCE WITH THE LOADING INFORMATION AS PROVIDED AND WITH THE TRUSS LOADING DIAGRAMS. DESIGNER SHALL ACCOUNT FOR DRIFTING, UNBALANCED LOADS, UPLIFTS AND A CONCENTRATED LOAD OF 2000 LBS. PLACED ANYWHERE ON THE BOTTOM CHORD.
- SHOP-FABRICATED WOOD TRUSSES SHALL BE FABRICATED FROM LUMBER OF TREATED SPRUCE-PINE-FIR (SPF) OR SOUTHERN YELLOW PINE (SPY) WITH TYPE 304 STAINLESS STEEL OR G180 GALVANIZED STEEL CONNECTOR PLATES.
- SILL PLATES SHALL BE ANCHORED TO THE CONCRETE FOUNDATIONS WITH 1/2" DIAMETER X 7" (MINIMUM EMBED) HOOK BOLTS SPACED AT 24" O.C. (MAX).
- PROVIDE TIMBER FRAMING MEMBERS THAT ARE PLUMB, SQUARE, AND TRUE TO LINE WITH CONNECTIONS SECURELY FASTENED ACCORDING TO REFERENCED AF&PA SPECIFICATIONS, STANDARDS, AND MANUFACTURER'S WRITTEN INSTRUCTIONS.

4000 PSI CONCRETE				
BAR SIZE	LAP LENGTH		DEVELOPMENT LENGTH	
	TOP	OTHER	TOP	OTHER
#3	36"	29"	29"	23"
#4	48"	38"	38"	29"
#5	60"	47"	47"	36"
#6	72"	56"	56"	44"
#7	105"	81"	81"	63"
#8	120"	93"	93"	72"
#9	137"	105"	105"	81"

2
S0.1
CONCRETE REINFORCING LAP & DEVELOPMENT LENGTH REQUIREMENTS - EPOXY COATED
SCALE: NTS

CONCRETE AND REINFORCING STEEL

- ALL REINFORCEMENT LAP AND DEVELOPMENT LENGTHS SHALL SATISFY THE MINIMUM REQUIREMENTS INDICATED IN DETAIL 2/S0.1.
- WHERE BARS OF TWO DIFFERENT SIZES ARE SPLICED, THE SPLICE LENGTH SHALL BE THE REQUIRED LAP LENGTH FOR THE SMALLER BAR, BUT NOT LESS THAN THE DEVELOPMENT LENGTH FOR THE LARGER BAR.
- CONTRACTOR MAY ELECT TO USE MECHANICAL BAR SPLICE, WHICH DEVELOPS 125% OF THE BAR STRENGTH, IN LIEU OF LAPPING REINFORCEMENT.
- ALL REINFORCING BARS SHALL BE CONTINUOUS AT CORNERS. PROVIDE DOWELS OR CORNER BARS AS REQUIRED AND INSTALL PRIOR TO PLACING CONCRETE.
- SLABS-ON-GRADE: FIBER REINFORCED WITH POLYOLEFIN MACRO-FIBERS AT THE RATE OF 3 POUNDS PER CUBIC YARD OF CONCRETE.
- CONCRETE REINFORCEMENT SHOWN IS DIAGRAMMATIC AND ONLY INTENDED TO SHOW THE GENERAL CONFIGURATION, SIZE AND QUANTITY OF REINFORCEMENT. CONTRACTOR/FABRICATOR SHALL FOLLOW THE LAP AND EMBEDMENT LENGTHS PROVIDED AND ACI 315 "ACI DETAILING MANUAL" FOR PROPER DETAILING REQUIREMENTS AND THE CONCRETE REINFORCING STEEL INSTITUTES' (CRSI) "MANUAL OF STANDARD PRACTICE"
- ALL CONTROL OR CONSTRUCTION JOINTS IN CONCRETE SLABS-ON-GRADE TO BE PLACED AT A MAXIMUM OF 12 FEET ANY DIRECTION. IN NO CASE SHALL LENGTH-TO-WIDTH RATIO OF CONCRETE SLAB ON GRADE EXCEED 1.25 ALL CONTROL JOINTS TO BE SAW CUT WITHIN 6 HOURS AFTER PLACING CONCRETE.
- CONCRETE STANDARDS SHALL CONFORM TO ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE".
- CHAMFER EXPOSED CONCRETE EDGES 3/4" U.N.O.
- REINFORCEMENT SHALL BE SUPPORTED IN ITS SPECIFIED AND PROPER POSITION BY USE OF BRICKS, WIRES, OR CHAIRS. SUCH DEVICES SHALL BE SUFFICIENTLY STRONG AND PROPERLY PLACED AT FREQUENT INTERVALS SO AS TO MAINTAIN THE COVER BETWEEN THE REINFORCING AND THE SURFACE OF THE CONCRETE. THE REINFORCEMENT SHALL BE PLACED AS SHOWN ON THE PLANS WITHIN ±1/4". PLATFORMS FOR THE SUPPORT OF WORKERS AND EQUIPMENT DURING CONCRETE PLACEMENT SHALL BE SUPPORTED DIRECTLY ON THE GRADE AND NOT ON THE REINFORCING STEEL.
- FIELD BENDING OF REINFORCING BARS IS NOT PERMITTED.
- ALL REINFORCING SHALL BE EPOXY COATED**

SPECIALTY STRUCTURAL ENGINEERING

- THE SPECIALTY STRUCTURAL ENGINEER (SSE) IS DEFINED AS A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MICHIGAN WHO IS NOT THE STRUCTURAL ENGINEER OF RECORD (SER), WHO PERFORMS DELEGATED DESIGN FUNCTIONS NECESSARY FOR THE SPECIALTY SYSTEM COMPONENTS OF THE STRUCTURE TO BE COMPLETED, AND WHO HAS SHOWN EXPERIENCE AND/OR TRAINING IN THE SPECIFIC SPECIALTY.
- THE SSE AND CONTRACTOR SHALL REVIEW THE CONSTRUCTION DOCUMENTS TO DETERMINE THE APPROPRIATE SCOPE OF ENGINEERING.
- THE INTENT OF THE CONSTRUCTION DOCUMENTS IS TO PROVIDE SUFFICIENT INFORMATION FOR THE SSE TO PERFORM THE ANALYSIS, DESIGN, AND ASSEMBLY OF SHOP DRAWINGS. IN THE EVENT THE SSE DETERMINES THERE IS INSUFFICIENT INFORMATION PROVIDED IN CONTRACT DOCUMENTS, THE SSE SHALL, IN A TIMELY MANNER, CONTACT THE SER IN WRITING FOR CLARIFICATION. THE CONTRACTOR AND SSE SHALL PROVIDE A COMPLETE SYSTEM.
- ALL DOCUMENTS PREPARED BY THE SSE SHALL BE SIGNED AND SEALED BY A REGISTERED DESIGN PROFESSIONAL.
- EXAMPLES OF COMPONENTS REQUIRING SSE INCLUDE, BUT ARE NOT LIMITED TO:
GLUE-LAMINATED WOOD FRAMING SYSTEMS
SHOP-FABRICATED WOOD TRUSSES AND BRACING SYSTEMS
- WHEN MODIFICATIONS ARE PROPOSED TO COMPONENTS UNDER THE DESIGN AND CERTIFICATION OF AN SSE, WRITTEN AUTHORIZATION BY THE SSE MUST BE OBTAINED AND SUBMITTED TO THE SER FOR REVIEW, PRIOR TO PERFORMING THE PROPOSED MODIFICATION.
- ALL SUBMITTALS GENERATED BY THE DESIGN OF THE SSE MUST BE REVIEWED AND APPROVED BY THE SSE PRIOR TO REVIEW BY THE SER. SUBMITTALS RECEIVED WITHOUT THE APPROVAL OF THE SSE WILL BE REJECTED WITHOUT FURTHER REVIEW.
- THE CONTRACT DOCUMENTS ONLY DISPLAY THE DESIGN INTENT OF THE SPECIALTY SYSTEM COMPONENTS. FINAL ANALYSIS, DESIGN, AND ASSEMBLY OF SHOP DRAWINGS IS THE RESPONSIBILITY OF THE SSE.
- THE SSE SHALL SUBMIT CALCULATIONS AND SUPPORT REACTIONS FOR HIS/HER SYSTEM 15 DAYS (MIN.) PRIOR TO THE REVIEW OF ANY SHOP DRAWINGS FOR THE DEPENDENT SYSTEMS. THE SHOP DRAWINGS FOR THE DEPENDENT SYSTEMS WILL NOT BE REVIEWED UNTIL THE SSE APPROVES, SIGNED, AND SEALED SHOP DRAWINGS AND CALCULATIONS FOR THE SPECIALTY SYSTEM(S) HAVE BEEN SUBMITTED AND REVIEWED. COSTS FOR ANY CHANGES RELATED TO THE CALCULATIONS AND SHOP DRAWINGS SUBMITTED BY THE SSE SHALL BE BORNE BY THE CONTRACTOR.

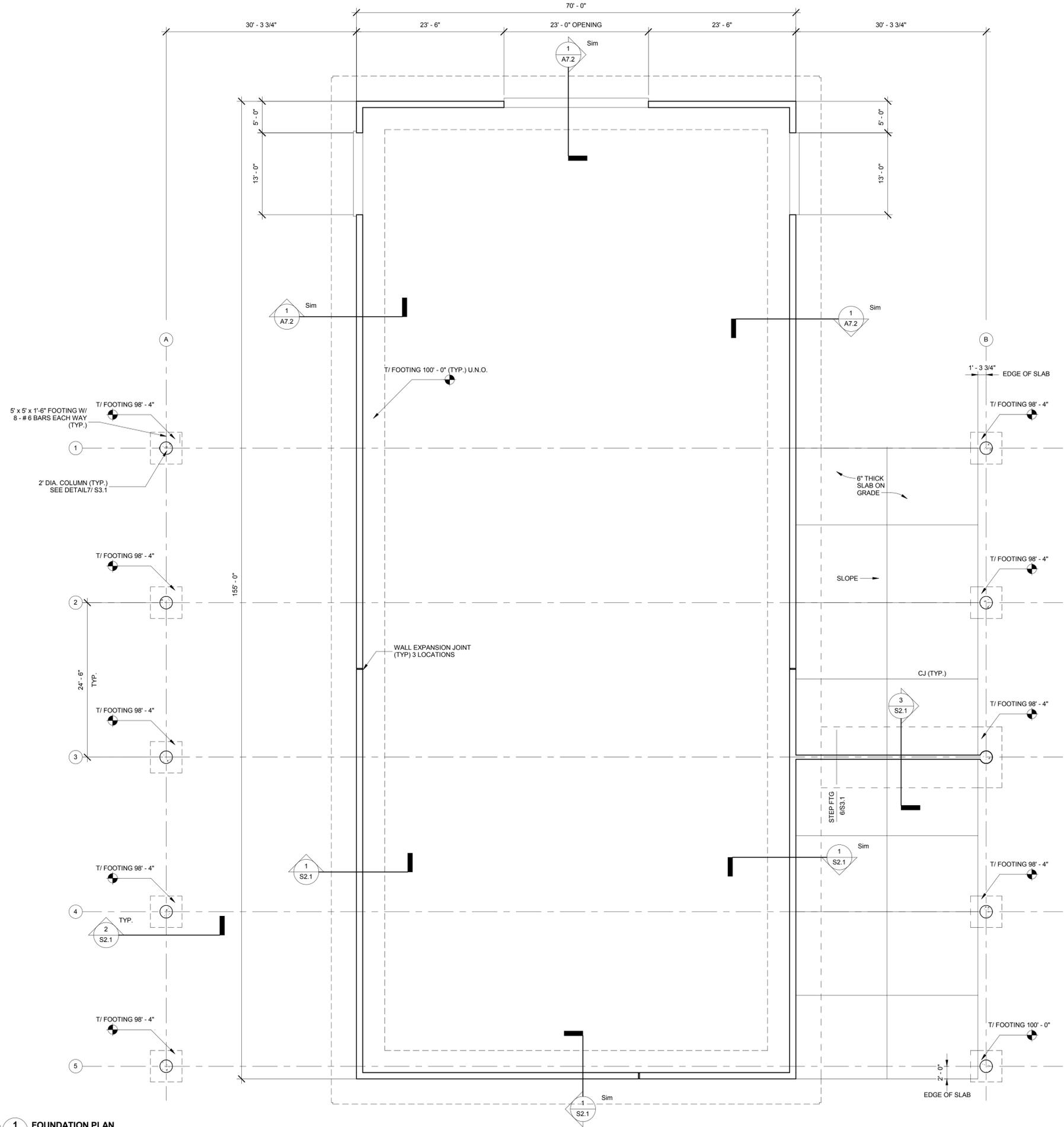
MINIMUM FASTENING SCHEDULE (U.N.O.)		
CONNECTION	FASTENING	LOCATION
TOP PLATE TO STUD	2-16d COMMON (3 1/2"x0.162") 3-3"x0.131" NAILS	END NAIL
STUD TO SOLE PLATE	4-8d COMMON (2 1/2"x0.131") 4-3"x0.131" NAILS	TOENAIL
	2-16d COMMON (3 1/2"x0.162") 3-3"x0.131" NAILS	END NAIL
DOUBLE STUDS	16d (3 1/2"x0.135") AT 24" O.C. 3"x0.131" NAILS AT 8" O.C.	FACE NAIL
DOUBLE TOP PLATES	16d (3 1/2"x0.135") AT 16" O.C. 3"x0.131" NAILS AT 12" O.C.	TYPICAL FACE NAIL
BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	3-8d COMMON (2 1/2"x0.131") 3-3"x0.131" NAILS	TOENAIL
TOP PLATES, LAPS AND INTERSECTIONS	2-16d COMMON (3 1/2"x0.162") 3-3"x0.131" NAILS	FACE NAIL
CONTINUOUS HEADER TO STUD	4-8d COMMON (2 1/2"x0.131")	TOENAIL
BUILT-UP CORNER STUDS	16d COMMON (3 1/2"x0.162") 3"x0.131" NAILS	24" O.C. 16" O.C.
BUILT-UP GIRDER AND BEAMS	20d COMMON (4"x0.192") 32" O.C. 3"x0.131" NAIL @ 24" O.C.	FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
	2-20d COMMON (4"x0.192") 3-3"x0.131" NAILS	FACE NAIL AT ENDS AND AT EACH SPLICE
LEDGER STRIP	3-16d COMMON (3 1/2"x0.162") 4-3"x0.131" NAILS	FACE NAIL

- COMMON OR BOX NAILS ARE PERMITTED TO BE USED EXCEPT WHERE OTHERWISE STATED.
- NAILS SPACED AT 6 INCHES ON CENTER AT EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS EXCEPT 6 INCHES AT SUPPORTS WHERE SPANS ARE 48 INCHES OR MORE. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.
- COMMON OR DEFORMED SHANK (6d-2"x0.113"; 8d-2 1/2"x0.131"; 10d-3"x0.148")
- COMMON (6d-2"x0.113"; 8d-2 1/2"x0.131"; 10d-3"x0.148")
- DEFORMED SHANK (6d-2"x0.113"; 8d-2 1/2"x0.131"; 10d-3"x0.148")
- FASTENERS SPACED 3 INCHES ON CENTER AT EXTERIOR EDGES AND 6 INCHES ON CENTER AT INTERMEDIATE SUPPORTS, WHEN USED AS STRUCTURAL SHEATHING. SPACING SHALL BE 6 INCHES ON CENTER ON THE EDGES AND 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS FOR NONSTRUCTURAL APPLICATIONS.
- CORROSION-RESISTANT ROOFING NAILS WITH 1/8" INCH DIAMETER HEAD AND 1 1/2" INCH LENGTH FOR 1/2" INCH SHEATHING AND 1 3/8" INCH SHEATHING.
- FOR ROOF SHEATHING APPLICATIONS, 8d NAILS (1 1/2"x0.113") ARE THE MINIMUM REQUIRED FOR WOOD STRUCTURAL PANELS.
- FOR ROOF SHEATHING APPLICATIONS, FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS.
- FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS.



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FOUNDATION PLAN
SCALE: 1/8" = 1'-0"
NORTH



PLAN NOTES:

- A. REFER TO G1.1 & S0.1 FOR ADDITIONAL NOTES.
- B. REFER TO SHEETS S3.1 FOR TYPICAL DETAILS NOT REFERENCED.



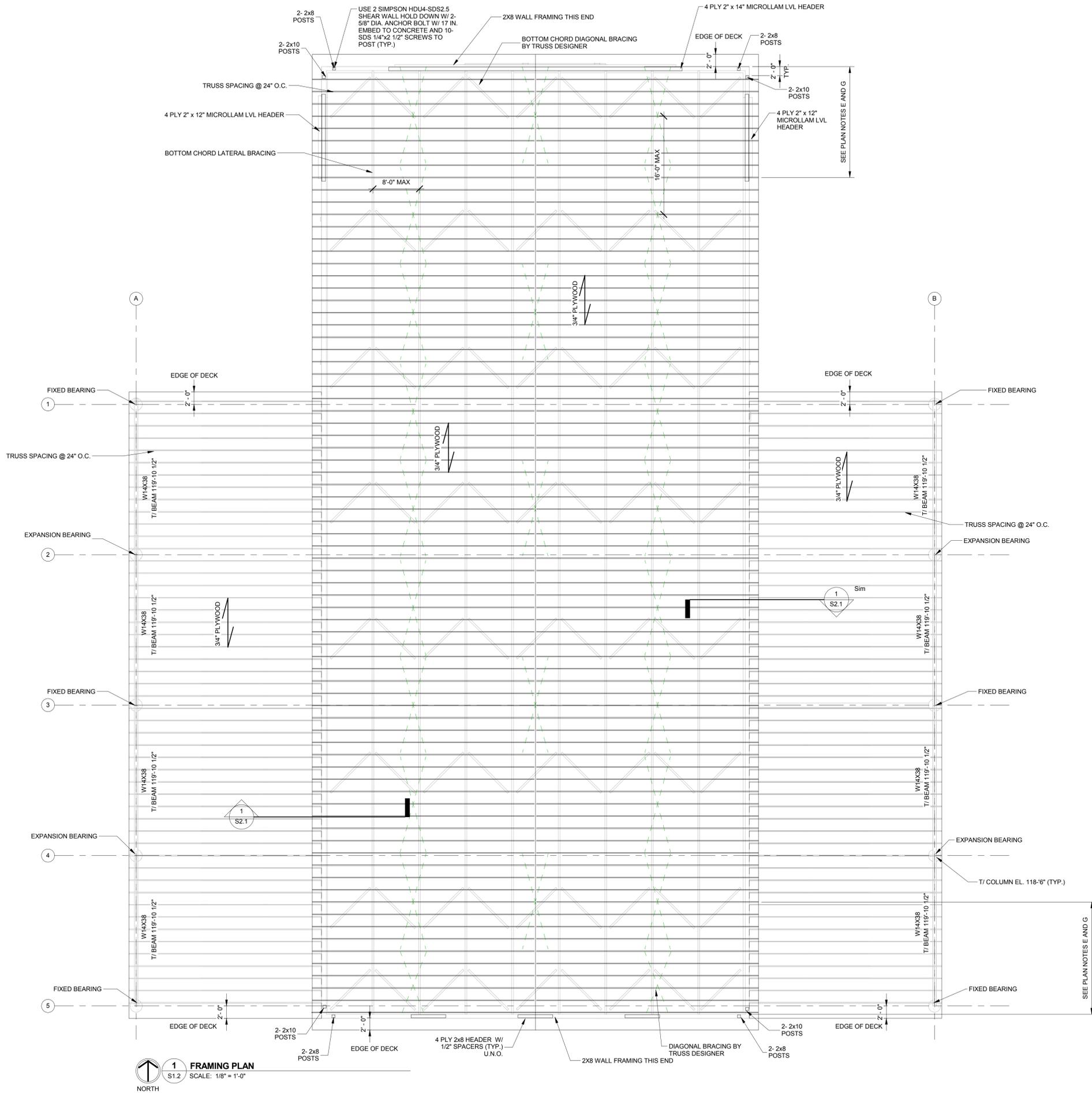
DRAWN: YMR
DESIGNED: YMR
APPROVED: CVAN
DATE: MARCH 14, 2014
PROJECT NUMBER: 1341.6538.90

MICHIGAN
MARSHALL
CALHOUN COUNTY ROAD DEPARTMENT
CHEMICAL STORAGE FACILITY
FOUNDATION PLAN

DRAWING NUMBER: **S1.1**
STRUCTURAL

DLZ MICHIGAN, INC.

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1 FRAMING PLAN
S1.2 SCALE: 1/8" = 1'-0"
NORTH

PLAN NOTES:

- A. REFER TO G1.1 FOR PROJECT GENERAL NOTES & S0.1 FOR STRUCTURAL GENERAL NOTES.
- B. REFER TO SHEETS S3.1 FOR TYPICAL DETAILS NOT REFERENCED.
- C. TRUSS BRACING IS DIAGRAMMATICAL. CONTRACTOR SHALL PROVIDE SIGNED AND SEALED DRAWINGS AND CALCULATIONS, BY A REGISTERED MICHIGAN DESIGN PROFESSIONAL, FOR THE PERMANENT AND TEMPORARY TRUSS BRACING PRIOR TO INSTALLATION OF ANY TRUSS. CONTRACTOR TO NOTE: TRUSSES WITH LONG SPANS ARE UNSTABLE AND REQUIRE SPECIAL DESIGN AND DETAILING.
- D. AT HEADERS ABOVE OPENINGS IN STUD WALLS, USE MATERIAL MATCHING STUDDS TO FILL OUT HEADER WIDTH TO MATCH WALL STUD WIDTH.
- E. ROOF SHEATHING, WITHIN 16'-0" FEET OF NORTH AND SOUTH WALL, SHALL BE 3/4" SHEATHING WITH 10d NAILS SPACED AT 4" MAX O.C. AT DIAPHRAGM BOUNDARY AND 6" MAX O.C. AT INTERIOR PANEL EDGES.
- F. ROOF SHEATHING, ON THE LEAN TO ROOF AND BETWEEN THE 16'-0" ON EITHER SIDE, SHALL BE 3/4" WITH 10d NAILS SPACED AT 6" MAX O.C. AT DIAPHRAGM BOUNDARY AND 6" MAX O.C. AT INTERIOR PANEL EDGES.
- G. ALL ROOF SHEATHING PANEL EDGES, WITHIN 16'-0" OF NORTH AND WALL, SHALL BE BLOCKED WITH 2X MATERIAL FASTENED TO TRUSSES.
- H. PROVIDE 2x10 OUTLOOKERS AT ROOF OVERHANGS PER 3/A7.2.
- J. ALL WALL FRAMING TO BE 2X10 U.N.O.

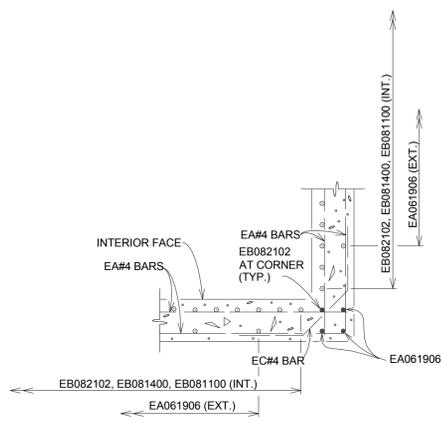


DLZ MICHIGAN, INC.

DRAWN: YMR	CHK'D: CVAN
DESIGNED: YMR	
APPRO'D: CVAN	
DATE: MARCH 14, 2014	
PROJECT NUMBER	1341.6538.90

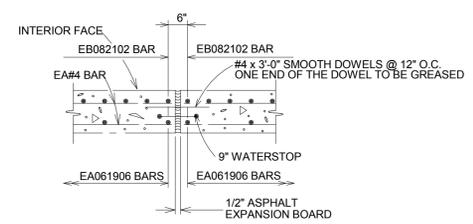
MICHIGAN
MARSHALL
CALHOUN COUNTY ROAD DEPARTMENT
CHEMICAL STORAGE FACILITY
FRAMING PLAN

DRAWING NUMBER
S1.2
STRUCTURAL



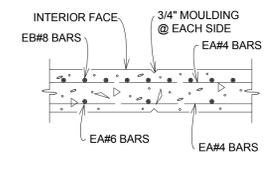
NOTE:
TYPICAL DETAIL PROVIDED PER MDOT STANDARD DRAWINGS.
PROVIDE REINFORCEMENT PER SECTIONS ELSEWHERE.

1 TYPICAL CORNER DETAIL
S3.1 SCALE: 1 1/2" = 1'-0"



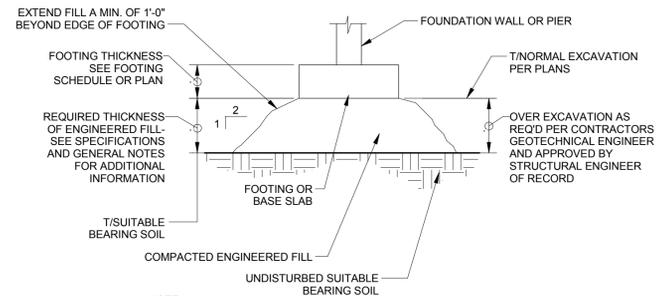
NOTE:
TYPICAL DETAIL PROVIDED PER MDOT STANDARD DRAWINGS.
PROVIDE REINFORCEMENT PER SECTIONS ELSEWHERE.

2 TYPICAL EXPANSION JOINT
S3.1 SCALE: 1 1/2" = 1'-0"



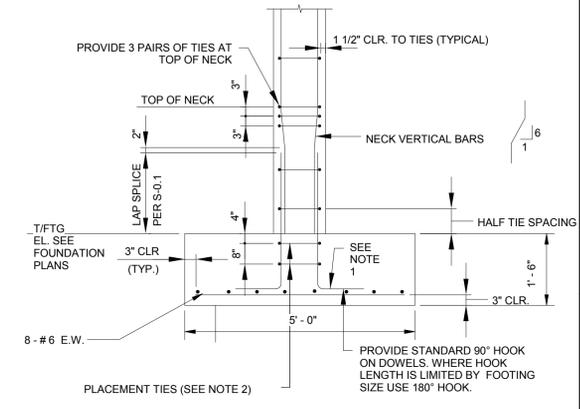
NOTE:
TYPICAL DETAIL PROVIDED PER MDOT STANDARD DRAWINGS.
PROVIDE REINFORCEMENT PER SECTIONS ELSEWHERE.

3 TYPICAL CONTROL JOINT
S3.1 SCALE: 1 1/2" = 1'-0"



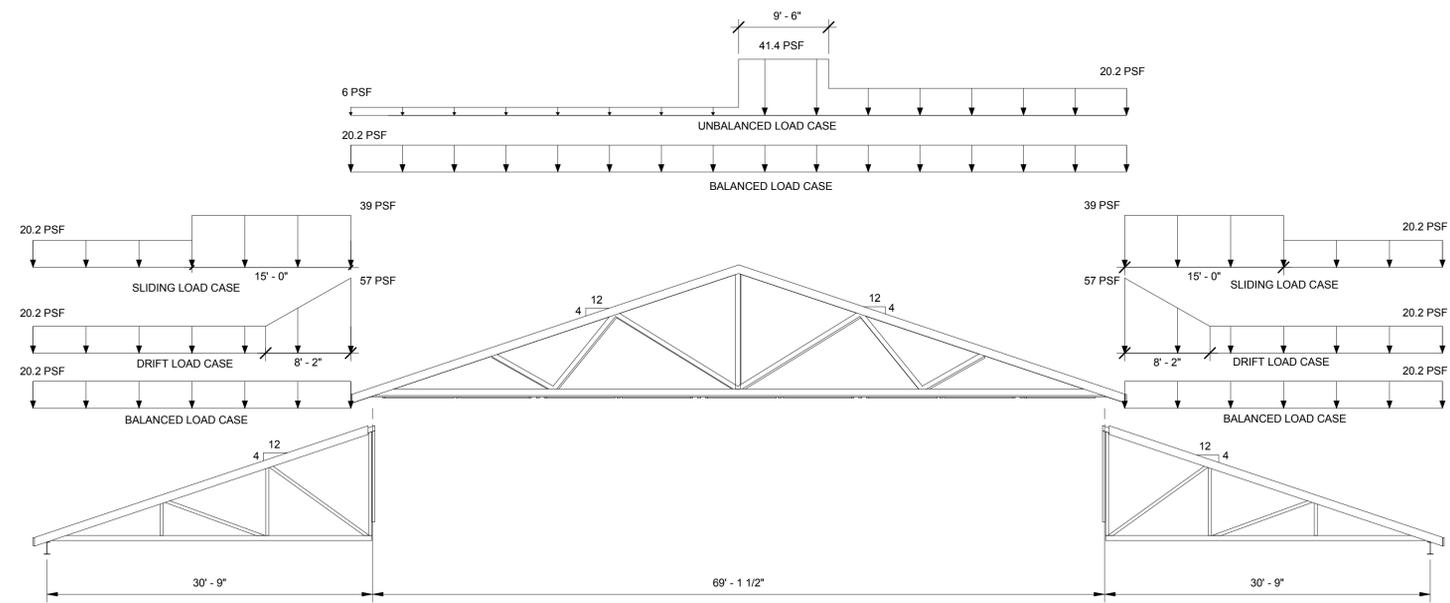
NOTE:
1. IF SOILS WHICH ARE WEAKER THAN THE DESIGN BEARING PRESSURE ARE ENCOUNTERED AT THE FOOTING ELEVATIONS INDICATED, UNDERCUTTING AND REPLACEMENT WITH BACKFILL WILL BE REQUIRED.

4 OVEREXCAVATION DETAIL
S3.1 SCALE: NTS



NOTE:
1. PROVIDE FOOTING DOWELS TO MATCH COLUMN REINFORCEMENT.
2. PROVIDE ADDITIONAL PLACEMENT TIES SPACED AT 12" IN FOOTINGS 3'-0" OR MORE IN THICKNESS.

5 TYPICAL FOOTING WITH CONCRETE COLUMN
S3.1 SCALE: NTS



NOTE:
1. WOOD TRUSS DESIGN LOADS :
BUILDING
T/ CHORD: DL= 12 PSF
SL= SEE DIAGRAM
WL=

ZONE 1	=	8 PSF
ZONE 1	=	-16 PSF
ZONE 2	=	8 PSF
ZONE 2	=	-22 PSF
ZONE 2 (O.H.)	=	-35 PSF
ZONE 3	=	11 PSF
ZONE 3	=	-44 PSF
ZONE 3 (O.H.)	=	-59 PSF

B/ CHORD: DL= 5 PSF

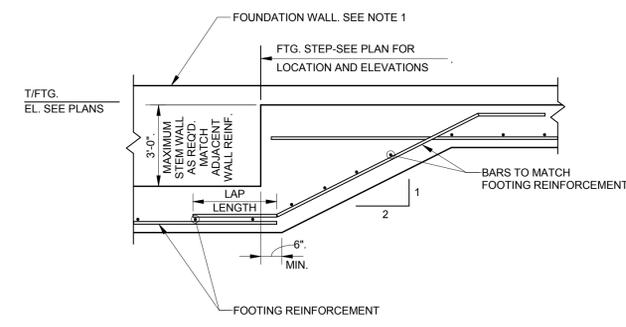
LEAN TO
T/ CHORD: DL= 12 PSF
SL= SEE DIAGRAM
WL=

ZONE 1	=	23 PSF
ZONE 1	=	-39 PSF
ZONE 2	=	35 PSF
ZONE 2	=	-59 PSF
ZONE 3	=	47 PSF
ZONE 3	=	-78 PSF

B/ CHORD: DL= 5 PSF

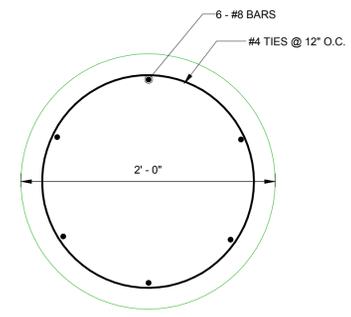
2. REFER TO S0.1 FOR ADDITIONAL DESIGN CRITERIA REQUIRED FOR DELEGATED DESIGN.
3. FRAMING PLAN SHOWN WITH WOOD TRUSSES & TRUSS GIRDERS (AS REQ'D) SPACED AT MAX. OF 2'-0" O.C. WOOD TRUSS LAYOUT IS DIAGRAMMATIC AND IS THE RESPONSIBILITY OF THE WOOD TRUSS DESIGNER TO DESIGN AND CONFIGURE THE FINAL LAYOUT.
4. CONSIDER UNBALANCED SNOW LOAD ON EACH SIDE OF THE RIDGE LINE.
5. ALL UNBALANCED AND DRIFT LOADS INDICATED IN ASCE 7. LOADING ON OPPOSITE SIDE OF RIDGES WILL BE SIMILAR TO THAT INDICATED ON THIS DRAWING.
6. ALL TRUSS PLATES AND HOLD DOWNS SHALL BE G180 GALVANIZED OR STAINLESS STEEL TYPE 304.
7. TRUSS BRACING IS DIAGRAMMATICAL. CONTRACTOR SHALL PROVIDE SIGNED AND SEALED DRAWINGS AND CALCULATIONS, BY A REGISTERED MICHIGAN DESIGN PROFESSIONAL, FOR THE PERMANENT AND TEMPORARY TRUSS BRACING PRIOR TO INSTALLATION OF ANY TRUSS. CONTRACTOR TO NOTE, TRUSSES WITH LONG SPANS ARE UNSTABLE AND REQUIRE SPECIAL DESIGN AND DETAILING.

6 SNOWLOAD DIAGRAM & TRUSS NOTES
S3.1 SCALE: 1/8" = 1'-0"

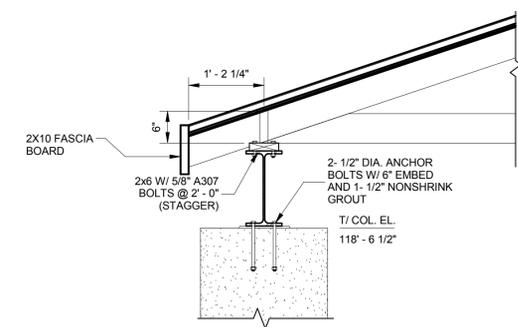


NOTE:
1. REINFORCING THROUGH FOUNDATION WALL SHALL MATCH ADJACENT FOUNDATION WALL REINFORCING. WHEN ADJACENT FOUNDATION WALL DOES NOT EXIST, I.E. INTERIOR FOOTING LOCATIONS AS NOTED, PROVIDE MINIMUM OF #5@12" O.C. EACH FACE VERTICALLY AND HORIZONTALLY WITH THE FOUNDATION WALL BETWEEN STEPS EQUAL IN THICKNESS TO THE SUPPORTED WALL THICKNESS. HOOK BAR ENDS WITH 90° ACI STD HOOKS.

7 STEPPED FOOTING DETAIL (3' MAX)
S3.1 SCALE: NTS

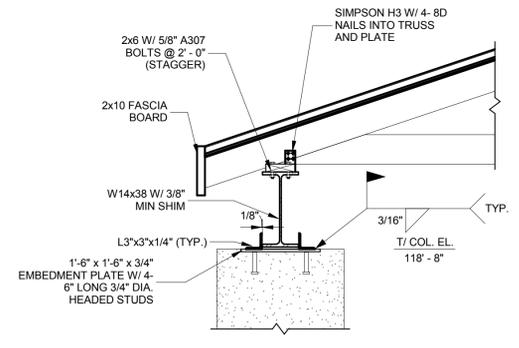


8 CONCRETE COLUMN SECTION
S3.1 SCALE: 3/4" = 1'-0"



NOTE:
SEE 10/S3.1 FOR TYP. TRUSS HOLD DOWN

9 FIXED BEARING
S3.1 SCALE: 3/4" = 1'-0"



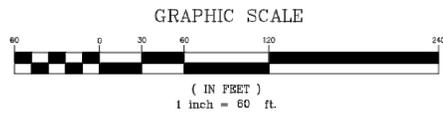
NOTE:
SEE 9/S3.1 FOR TYP. BLOCKING BETWEEN TRUSSES

10 EXPANSION BEARING
S3.1 SCALE: 3/4" = 1'-0"

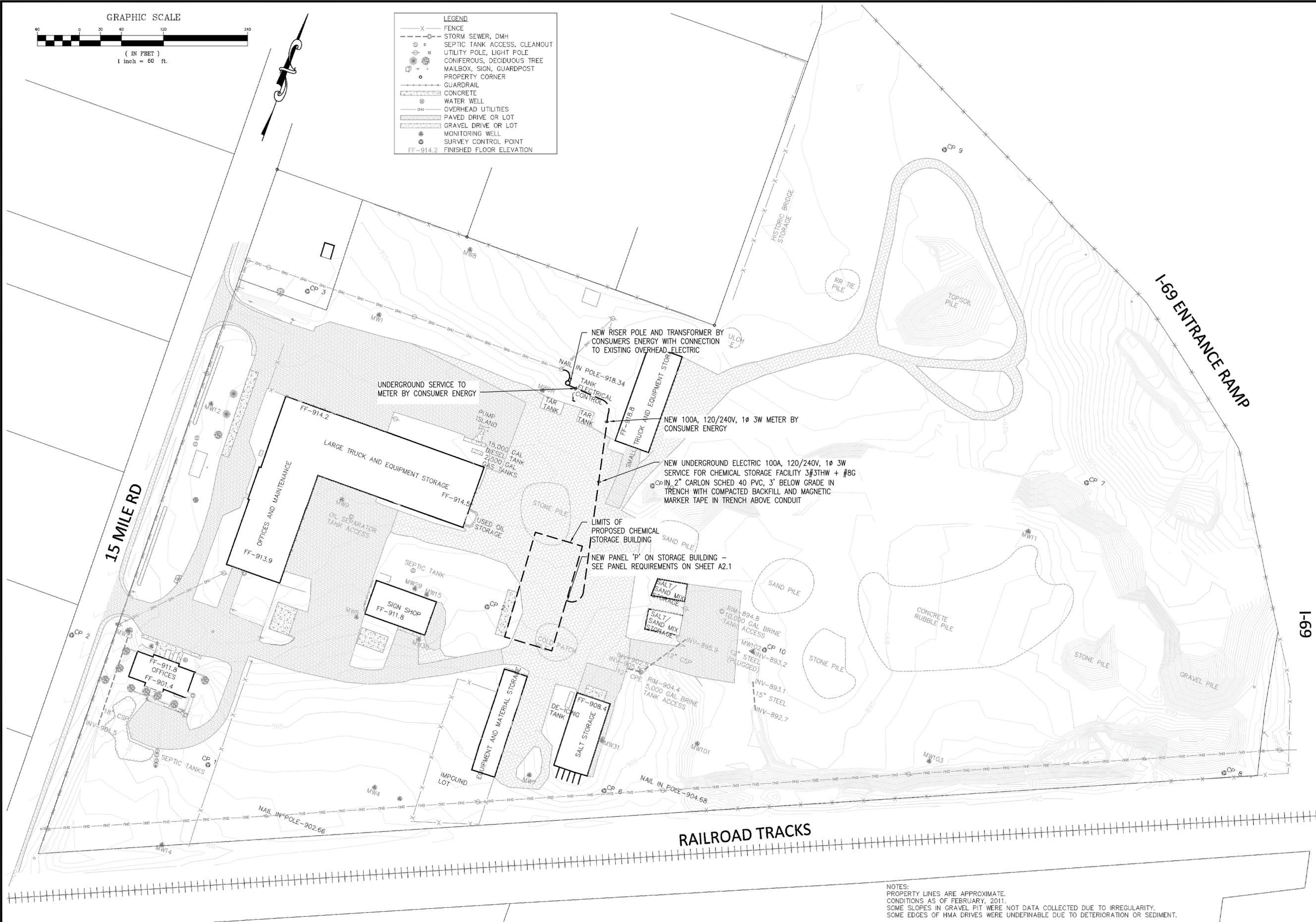
DRAWN: YMR	CHK'D: CVAN
DESIGNED: YMR	
APPR'D: CVAN	
DATE: MARCH 14, 2014	
PROJECT NUMBER	1341.6538.90

MICHIGAN
MARSHALL
CALHOUN COUNTY ROAD DEPARTMENT
CHEMICAL STORAGE FACILITY
DETAILS

DRAWING NUMBER
S3.1
STRUCTURAL



LEGEND	
—X—	FENCE
—○—	STORM SEWER, DMH
—○—	SEPTIC TANK ACCESS, CLEANOUT
—○—	UTILITY POLE, LIGHT POLE
—○—	CONIFEROUS, DECIDUOUS TREE
—○—	MAILBOX, SIGN, GUARDPOST
—○—	PROPERTY CORNER
—○—	GUARDRAIL
—○—	CONCRETE
—○—	WATER WELL
—○—	OVERHEAD UTILITIES
—○—	PAVED DRIVE OR LOT
—○—	GRAVEL DRIVE OR LOT
—○—	MONITORING WELL
—○—	SURVEY CONTROL POINT
FF-914.2	FINISHED FLOOR ELEVATION



NEW RISER POLE AND TRANSFORMER BY CONSUMERS ENERGY WITH CONNECTION TO EXISTING OVERHEAD ELECTRIC

NEW 100A, 120/240V, 1Ø 3W METER BY CONSUMERS ENERGY

NEW UNDERGROUND ELECTRIC 100A, 120/240V, 1Ø 3W SERVICE FOR CHEMICAL STORAGE FACILITY 3#3THW + #8G IN 2" CARLON SCHED 40 PVC, 3' BELOW GRADE IN TRENCH WITH COMPACTED BACKFILL AND MAGNETIC MARKER TAPE IN TRENCH ABOVE CONDUIT

LIMITS OF PROPOSED CHEMICAL STORAGE BUILDING

NEW PANEL 'P' ON STORAGE BUILDING - SEE PANEL REQUIREMENTS ON SHEET A2.1

NOTES:
 PROPERTY LINES ARE APPROXIMATE.
 CONDITIONS AS OF FEBRUARY, 2011.
 SOME SLOPES IN GRAVEL PIT WERE NOT DATA COLLECTED DUE TO IRREGULARITY.
 SOME EDGES OF HMA DRIVES WERE UNDEFINABLE DUE TO DETERIORATION OR SEDIMENT.

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 File: \\LAN1\proj\PROJ\1341.6538 Calhoun County Salt Barn\Site SHEETS\E1.1 ELECTRICAL SITE PLAN.dwg



DRAWN: RMC
 DESIGNED: MH
 APPROVED: ETB
 DATE: DECEMBER 31, 2013
 PROJECT NUMBER: 1341.6538.90

MICHIGAN
 CALHOUN COUNTY ROAD DEPARTMENT
 CHEMICAL STORAGE FACILITY
 ELECTRICAL SITE PLAN

DRAWING NUMBER: E1.1
 GENERAL

69-1

DLZ MICHIGAN, INC.