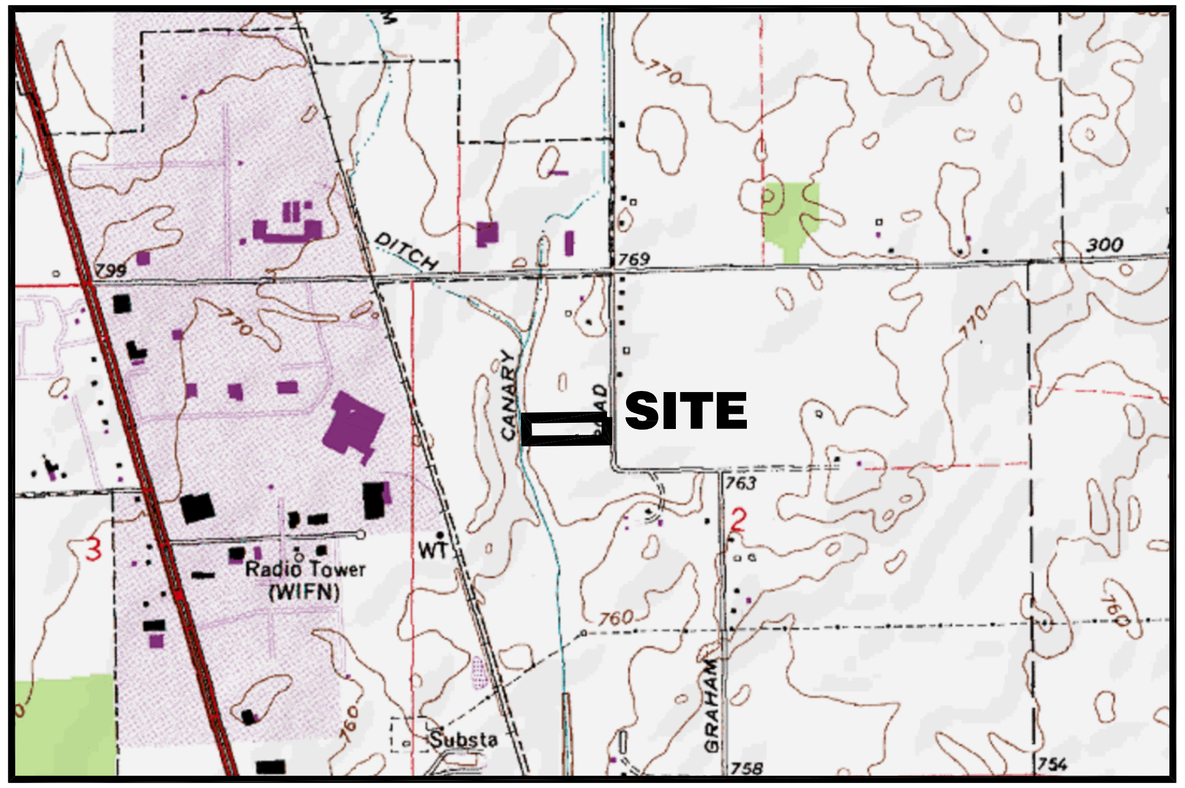
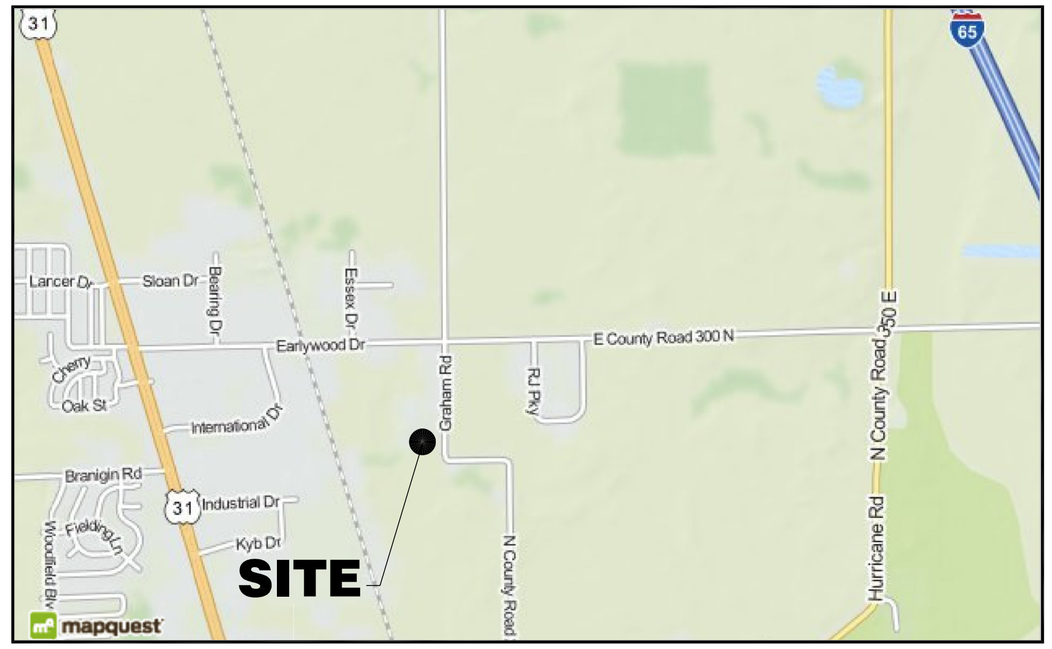
HEARTLAND MACHINE & ENGINEERINGS
OFFICE/WAREHOUSE BUILDING
CONSTRUCTION PLANS

Located in the Southwest Quarter of Section 2, Township 12 North, Range 4 East
Johnson County, Indiana
2848 N. GRAHAM RD. FRANKLIN, IN 46131



QUAD MAP (NOT TO SCALE)



VICINITY MAP (NOT TO SCALE)

AERIAL MAP
(NOT TO SCALE)

LEGAL DESCRIPTION

Lot Numbered 3 in Replat of Block "B" Miller Flex Space, Section Two, an addition to the City of Franklin as recorded in Plat Cabinet D, Page 776, in the Office of the Recorder of Johnson County, Indiana.

DEVELOPER/OWNER:

Tom Goin
2850 Graham Rd.
Franklin, Indiana 46131
(317) 494-1415

FLOOD INFORMATION STATEMENT:

THE ACCURACY OF ANY FLOOD HAZARD DATA SHOWN WITHIN THIS REPORT IS SUBJECT TO MAP SCALE UNCERTAINTIES IN LOCATION OR ELEVATION ON THE REFERENCED FLOOD INSURANCE RATE MAP. ALL OF THE LAND WITHIN THE PLAT LIES WITHIN THE FLOOD HAZARD ZONE "X" AS SCALED FROM COMMUNITY PANEL NO. 18081C0143D OF THE FLOOD INSURANCE RATE MAPS FOR JOHNSON COUNTY, INDIANA; DATED AUGUST 2, 2007.

Index

UTILITIES – FRANKLIN, INDIANA

SANITARY SEWER
Department of Public Works
796 S. State St,
Franklin, Indiana 46131
(888) 736-3640

STREETS
Franklin Street Department
1200 Madison Avenue, Suite 100
Indianapolis, Indiana 46225
(317) 327-4579

GAS SERVICE
Vectren
2020 North Meridian Street
Indianapolis, Indiana 46202
(317) 927-4403

ELECTRIC
Duke Energy
1000 East Main St.
Plainfield, Indiana 46168
(317) 838-1640

CABLE TV
Comcast Cable
1-866-922-0069
www.comcast.net
Century Link
1-800-366-8201
www.centurylink.com

STORM SEWER
MS4 Coordinator-Richard DeWitt
Department of Public Works
796 S. State St,
Franklin, Indiana 46131
(888) 736-3640

TELEPHONE
AT&T
5737 E. Washington St.
Indianapolis, Indiana 46219-6521
(317) 351-7412

WATER COMPANY
Indiana American Water
555 East County Line Road Suite 201
Greenwood, Indiana 46143
(800) 492-8373

NOTE:
THE SIZE AND LOCATION OF UTILITIES ARE PER PLANS AND LOCATIONS PROVIDED BY THE RESPECTIVE UTILITY COMPANIES. ALL UTILITY COMPANIES SHALL BE NOTIFIED PRIOR TO ANY EXCAVATION FOR FIELD LOCATION OF SERVICES.

Indiana 811
Know what's below. Call before you dig.

THESE DOCUMENTS ARE SUBJECT TO PERIODIC REVISIONS BY HOLLOWAY ENGINEERING. THE HOLDER IS RESPONSIBLE FOR VERIFYING THAT THESE DOCUMENTS ARE THE MOST CURRENT PRIOR TO USE.

HOLLOWAY ENGINEERING & SURVEYING
P.O. Box 234 Mooresville, IN. 46158
Ph: 317-831-7918
Holloway@HollowayEngineering.com

REGISTERED HOLLOWAY 940249 STATE OF INDIANA PROFESSIONAL ENGINEER

CERTIFIER'S SIGNATURE
DATED:

FILE NO.	113039
DATED	05-16-2013
DRAWN BY	J.E.K.
CHECKED	
REVISED	
REVISED	
REVISED	

COVER SHEET

PROJECT NAME:
SHEET OR CLIENT NAME:

HEARTLAND MACHINE & ENGINEERING

SHEET NUMBER
C100

LEGEND

768	EXISTING INTERMEDIATE CONTOUR
768	EXISTING INDEX CONTOUR
G—G	EXISTING GAS MAIN
T—T	EXISTING BURIED TELEPHONE
W—W	EXISTING WATER LINE
X—X	EXISTING FENCE LINE
	EXISTING FLOW LINE
	EXISTING STORM SEWER
FO—FO	EXISTING FIBER OPTIC
OUH—OUH	EXISTING OVER HEAD UTILITY
	EXISTING GUARD RAIL
	EXISTING SANITARY SEWER
	EXISTING CURB INLET
S	EXISTING SANITARY SEWER M.H.
ER	EXISTING ELECTRIC TRANSFORMER
	EXISTING WATER VALVE
	EXISTING WATER METER
	EXISTING POLE GUY WIRE
	EXISTING UTILITY POLE
	EXISTING STREET LIGHT
	EXISTING STREET SIGN
F	EXISTING FIBER OPTIC
	EXISTING DECIDUOUS TREE
MB	EXISTING MAIL BOX
	CALCULATED CORNER
	IRON PIN FOUND
	MAG NAIL FOUND

2" IRON PIN FOUND MARKING THE SE CORNER OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER.

N 00°24'21" E 1118.61'

5/8" I. PIN WITH CAP ENGRAVED "FECO" FOUND

N 89°15'16" E 50.04'

S 00°25'38" W 1961.98'

LOT 2 MILLERS FLEX SPACE SECTION 2
3.31 ACRES

EXISTING BUILDING F.F.E. = 763.45

EXISTING BUILDING F.F.E. = 763.10

I.E.(18"RCP)=757.81

N 89°16'23" E 714.84'

30' ACCESS EASEMENT & D.U.E.

EX. ASPHALT DRIVE

20' WATER LINE EASEMENT

I.E.(18"RCP) =757.81

S 00°24'21" W 491.87'

GRAHAM ROAD

N 01°24'10" W 202.98'

75' LEGAL DRAIN EASEMENT

30' S.S.E.

30' ACCESS EASEMENT & D.U.E.

LOT 3 MILLERS FLEX SPACE SECTION 2
3.31 ACRES

S 00°24'02" W 204.75'

EXISTING WET DETENTION BASIN
NORMAL POOL = 755.45
TOP OF BANK = 759.00

30' ACCESS EASEMENT & D.U.E.

EXISTING CMU BLOCK
OUTLET STRUCTURE
I.E.(0.30" ORIFICE)=755.45
I.E.(12"RCP)W=755.71

2X4 POSSIBLY MARKING SAN. LATERAL

I.E.(12"RCP)E=752.47

N 89°24'50" E 50.19'

S 89°24'50" W 708.40'

5/8" I. PIN WITH CAP ENGRAVED "FECO" FOUND

EX. ASPHALT PARKING LOT

EXISTING BUILDING

EX. ASPHALT PARKING LOT

0 30' 60' 90'

SCALE: 1 INCH = 30 FEET

ISHC BM JOHN S 18

IN JOHNSON COUNTY, GREENWOOD QUADRANGLE, IN THE SW 1/4 OF SECTION 31, TOWNSHIP 13 NORTH, RANGE 4 EAST, 2ND P.M.; APPROXIMATELY 2.2 MILES NORTHEAST OF FRANKLIN; AT THE 200 NORTH ROAD BRIDGE OVER I-65; SET IN THE TOP OF THE NORTHWEST CONCRETE WINGWALL OF THE BRIDGE, 18.8 FEET NORTH OF THE CENTERLINE OF 300 NORTH ROAD, 1.8 FEET NORTH OF THE NORTH EDGE OF A METAL GUARDRAIL, 0.8 FOOT ABOVE THE ROAD, 0.5 FOOT WEST OF THE EAST FACE OF THE WINGWALL OF THE BRIDGE; A INDIANA STATE HIGHWAY COMMISSION BRASS BENCH MARK TABLET, STAMPED "JOHN S 18".

779.235 feet N.G.V.D. 1929

UTILITY AND IMPROVEMENTS LOCATION NOTICE

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Indiana 811. Know what's below. Call before you dig.

ROSS O. HOLLOWAY REGISTERED NO. S0530 STATE OF INDIANA LAND SURVEYOR

HOLLOWAY ENGINEERING & SURVEYING
P.O. Box 234 Mooresville, IN. 46158
Ph: 317-831-7918
Holloway@HollowayEngineering.com

ROSS O. HOLLOWAY REGISTERED NO. 940249 STATE OF INDIANA PROFESSIONAL ENGINEER

CERTIFIER'S SIGNATURE

DATED:

FILE NO.	113039
DATED	05-16-2013
DRAWN BY	J.E.K.
CHECKED	
REVISED	
REVISED	
REVISED	

PROJECT NAME:
PROPERTY SURVEY / EXISTING CONDITIONS

SHEET OR CLIENT NAME:
HEARTLAND MACHINE & ENGINEERING

SHEET NUMBER
C101

LEGEND

768	EXISTING INTERMEDIATE CONTOUR
768	EXISTING INDEX CONTOUR
G	EXISTING GAS MAIN
T	EXISTING BURIED TELEPHONE
W	EXISTING WATER LINE
X	EXISTING FENCE LINE
	EXISTING FLOW LINE
	EXISTING STORM SEWER
FO	EXISTING FIBER OPTIC
OUH	EXISTING OVER HEAD UTILITY
	EXISTING GUARD RAIL
	EXISTING SANITARY SEWER
	EXISTING CURB INLET
S	EXISTING SANITARY SEWER M.H.
ET FR	EXISTING ELECTRIC TRANSFORMER
	EXISTING WATER VALVE
	EXISTING WATER METER
	EXISTING POLE GUY WIRE
	EXISTING UTILITY POLE
	EXISTING STREET LIGHT
	EXISTING STREET SIGN
F	EXISTING FIBER OPTIC
	EXISTING DECIDUOUS TREE
MB	EXISTING MAIL BOX
3	DETAILED REFERENCE

SITE PLAN NOTES

1. THE CONTRACTOR SHALL ENSURE THAT ALL NECESSARY PERMITS AND APPROVALS HAVE BEEN OBTAINED FROM AGENCIES HAVING JURISDICTION OVER THE WORK PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL OBTAIN AND PAY THE COST OF ALL PERMITS THAT HAVE NOT BEEN SECURED BY THE OWNER.

2. THE CONTRACTOR SHALL COMPLY WITH THE CONSTRUCTION SAFETY STANDARDS AS ISSUED BY THE U.S. DEPARTMENT OF LABOR OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION AS SET FORTH IN FINAL RULE 29, PART 1926, WHERE SUCH REGULATIONS APPLY TO THE WORK.

3. ALL ELEVATIONS SHOWN WITHIN THESE PLANS ARE BASED UPON U.S.G.S. DATUM.

4. LOCATIONS OF UTILITIES SHOWN WITHIN THESE PLANS ARE BASED UPON INFORMATION OBTAINED FROM UTILITY COMPANIES OR THEIR REPRESENTATIVES AND FIELD EVIDENCE OF IMPROVEMENTS VISIBLE ON THE GROUND SURFACE. EXACT LOCATIONS OF UNDERGROUND UTILITIES HAVE NOT BEEN VERIFIED. THE CONTRACTOR SHALL NOTIFY UTILITY COMPANIES AND REQUEST FIELD LOCATIONS OF SUCH WITHIN THE WORK AREA PRIOR TO COMMENCING EXCAVATION ACTIVITIES. THE CONTRACTOR SHALL REPORT ANY VARIATIONS FROM THE LOCATIONS SHOWN THAT MAY PRESENT A CONFLICT WITH EXECUTION OF THE WORK TO THE ENGINEER IN ADVANCE OF CONSTRUCTION.

5. THE CONTRACTOR SHALL COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES AND SHALL PAY THE COST OF PROTECTION, RELOCATION, REMOVAL, CONNECTION, AND/OR RECONNECTION OF UTILITIES AS NECESSARY FOR EXECUTION OF THE WORK.

6. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL APPLICABLE CODES, SPECIFICATIONS, LOCAL ORDINANCES, INDUSTRY STANDARDS AND UTILITY COMPANY REGULATIONS.

7. TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. TYPE "C" LIGHTS SHALL BE REQUIRED ON ALL BARRICADES, DRUMS AND SIMILAR DEVICES IN USE AT NIGHT.

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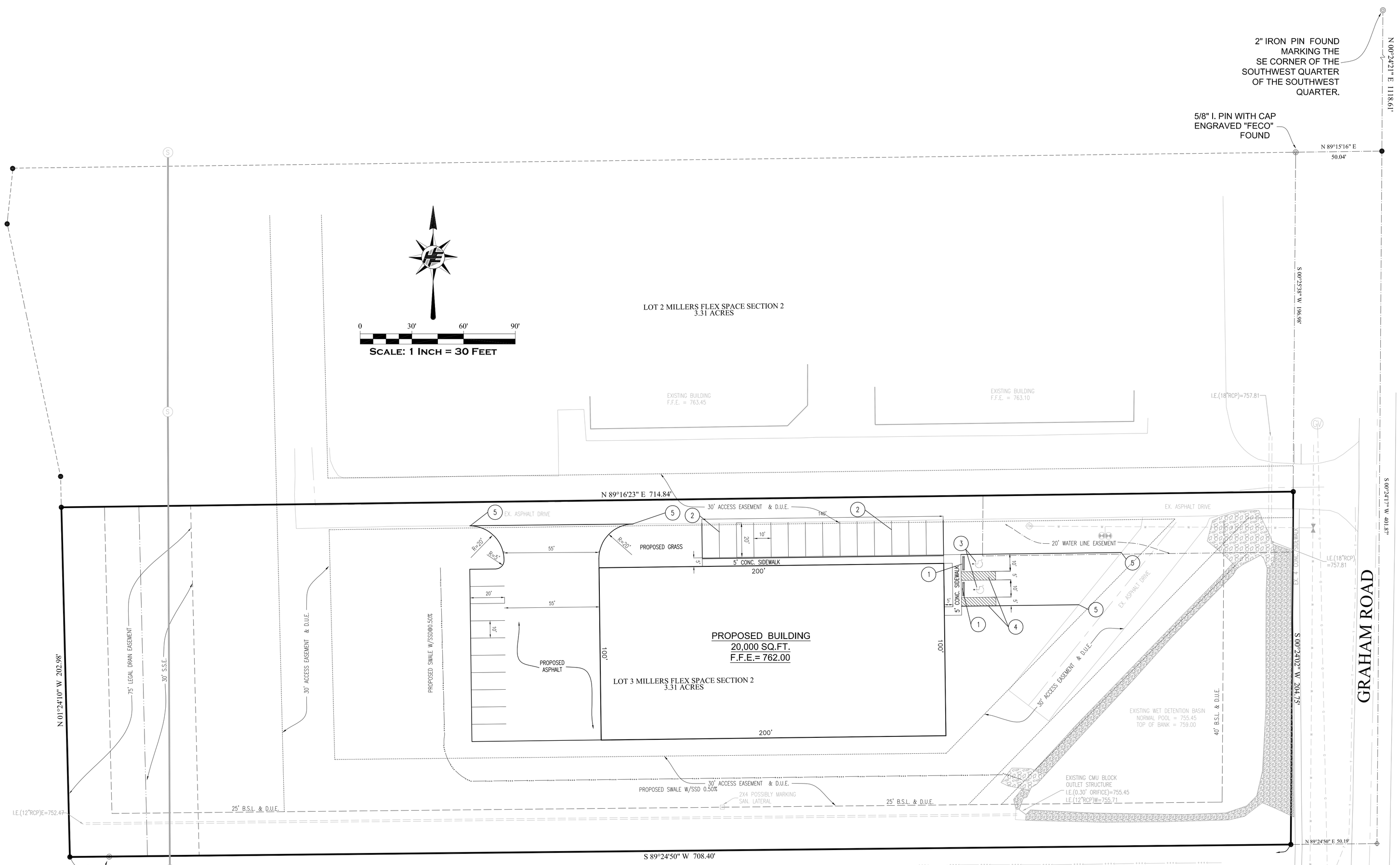


PLAN NOTES

1. HANDICAP SIGN LOCATION. CONTRACTOR TO PROVIDE SIGN AND POST. (SEE DETAIL 1 ON SHEET C801.)
2. PAINTED PARKING MARKINGS. (9'x20') (TYPICAL) (SEE DETAIL 10 ON SHEET C801.)
3. PAINTED HANDICAP PARKING SYMBOL. (SEE DETAIL 2 ON SHEET C801.)
4. PAINTED ACCESS AISLE. (SEE DETAIL 10 ON SHEET C801.)
5. MATCH PAVEMENT TO EXISTING PAVEMENT OR CURB. FIELD VERIFY EXTENT OF EXISTING PAVEMENT OR CURB.

Indiana 811. Know what's below. Call before you dig.

HOLLOWAY ENGINEERING & SURVEYING
P.O. Box 234 Mooresville, IN. 46158
Ph: 317-831-7918
Holloway@HollowayEngineering.com

REGISTERED ROSS O. HOLLOWAY 940024 STATE OF INDIANA PROFESSIONAL ENGINEER

CERTIFIER'S SIGNATURE

DATED:

FILE NO.	113039
DATED	05-16-2013
DRAWN BY	J.E.K.
CHECKED	
REVISED	
REVISED	
REVISED	

PROJECT NAME:

SITE PLAN

SHEET OR CLIENT NAME:

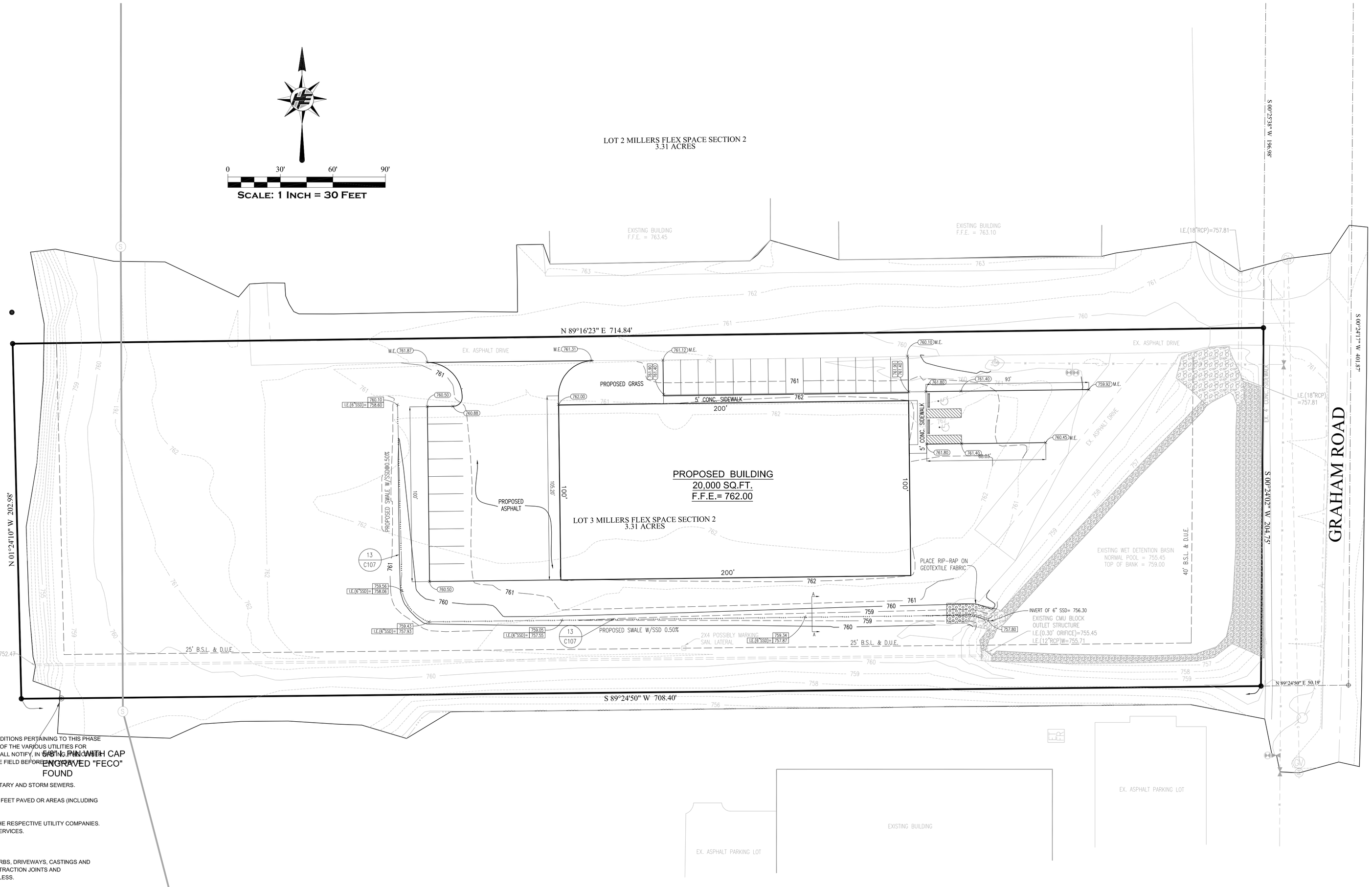
HEARTLAND MACHINE & ENGINEERING

SHEET NUMBER

C102

LEGEND

768	EXISTING INTERMEDIATE CONTOUR
768	EXISTING INDEX CONTOUR
768	PROPOSED INTERMEDIATE CONTOUR
768	PROPOSED INDEX CONTOUR
G G	EXISTING GAS MAIN
T T	EXISTING BURIED TELEPHONE
W W	EXISTING WATER LINE
X X	EXISTING FENCE LINE
PROPOSED FLOW LINE	PROPOSED FLOW LINE
	EXISTING STORM SEWER
FO FO	EXISTING FIBER OPTIC
OUH OUH	EXISTING OVER HEAD UTILITY
	EXISTING GUARD RAIL
	EXISTING SANITARY SEWER
	EXISTING CURB INLET
S	EXISTING SANITARY SEWER M.H.
EP FR	EXISTING ELECTRIC TRANSFORMER
	EXISTING WATER VALVE
	EXISTING WATER METER
	EXISTING POLE GUY WIRE
	EXISTING UTILITY POLE
	EXISTING STREET LIGHT
	EXISTING STREET SIGN
F	EXISTING FIBER OPTIC
	EXISTING DECIDUOUS TREE
M B	EXISTING MAIL BOX
803.13	PROPOSED TOP OF CURB/BERM
802.63	PROPOSED FINISH GRADE
T.O.B.	PROPOSED TOP OF BERM
M.E.	MATCH EXISTING GRADE



GRADING PLAN NOTES

1. ALL GRADES AT BOUNDARY SHALL MEET EXISTING GRADES.

2. IT SHALL BE THE RESPONSIBILITY OF EACH SUBCONTRACTOR TO VERIFY ALL UTILITIES AND CONDITIONS PERTAINING TO THIS PHASE OF WORK. IT SHALL ALSO BE THE SUBCONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNERS OF THE VARIOUS UTILITIES FOR PROPER STAKE LOCATION OF EACH UTILITY BEFORE WORK IS STARTED. THE SUBCONTRACTOR SHALL NOTIFY, IN WRITING, THE OWNER AND THE ENGINEER OF ANY CHANGES, OMISSIONS, OR ERRORS FOUND ON THESE PLANS OR IN THE FIELD BEFORE WORK IS STARTED OR RESUMED.

3. STANDARD SPECIFICATIONS FOR THE TOWN OF MONROVIA, INDIANA SHALL APPLY FOR ALL SANITARY AND STORM SEWERS.

4. ANY PART OF THE SANITARY OR STORM SEWER TRENCHES RUNNING UNDER OR WITHIN FIVE (5) FEET PAVED OR AREAS (INCLUDING SIDEWALKS) TO BE BACKFILLED WITH GRANULAR MATERIAL.

5. THE SIZE AND LOCATION OF EXISTING UTILITIES SHOWN ARE PER INFORMATION PROVIDED BY THE RESPECTIVE UTILITY COMPANIES. ALL UTILITY COMPANIES MUST BE NOTIFIED PRIOR TO ANY EXCAVATION FOR FIELD LOCATION OF SERVICES.

6. SIDEWALKS SHALL BE NON-REINFORCED CONCRETE 4" THICK AND 4' IN WIDTH.

7. EXPANSION JOINTS ARE TO BE PLACED AT ALL WALK INTERSECTIONS AND BETWEEN WALKS, CURBS, DRIVEWAYS, CASTINGS AND PLATFORMS. SIDEWALK SCORES ARE TO BE EQUALLY SPACED BETWEEN EXPANSION JOINTS, CONTRACTION JOINTS AND PERPENDICULAR SIDEWALKS AT 6' INTERVALS OR LESS WITH A CONTRACTION JOINT EVERY 48' OR LESS.

8. TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION TO CONFORM TO APPLICABLE LOCAL AND STATE STANDARDS. (SEE MAINTENANCE OF TRAFFIC PLAN HEREIN.)

9. ALL CONSTRUCTION ACTIVITY ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH APPLICABLE O.S.H.A. STANDARDS FOR WORKER SAFETY.

10. REMOVE AND BACKFILL ALL AREAS WHERE ANY FIELD TILE CROSSES PROPOSED HOUSE PADS. ALL FIELD TILES INTERCEPTED TO BE PERPETUATED INTO STORM SEWER SYSTEM OR LAKE. THE SUBCONTRACTOR SHALL NOTIFY, IN WRITING, THE OWNER AND THE ENGINEER IN ANY CIRCUMSTANCES WHERE THIS CANNOT BE ACCOMPLISHED.

11. ALL FILL AREAS SHALL BE COMPACTED TO AT LEAST 85 PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D-698). FILL UNDER THE FOOTING SHALL BE COMPACTED TO AT LEAST 98 PERCENT OF MAXIMUM DRY DENSITY (ASTM D-698).

12. ALL MANHOLE TOP-OF-CASTINGS MUST EXTEND A MINIMUM OF THREE (3) INCHES ABOVE GRADE IN NON-PAVED AREAS. MORE SPECIFICALLY SEE DETAIL NO. 1 ON SHEET C802.

13. TOPSOIL SHALL BE STRIPPED FROM ALL AREAS TO RECEIVE PAVING AND FROM WITHIN THE LIMITS OF THE PROPOSED BUILDINGS AND STRUCTURES. TOPSOIL SHALL BE STRIPPED TO THE DEPTH SHOWN IN THE GEOTECHNICAL REPORT, OR TO A DEPTH OF 6 INCHES, WHICHEVER IS GREATER.

14. TOPSOIL SHALL BE PLACED TO A DEPTH OF 4 TO 6 INCHES IN ALL AREAS TO BE SEEDED OR SODDED PER THE SPECIFICATIONS.

15. CONTRACTOR SHALL FIELD VERIFY SOIL TOPSOIL DEPTH PRIOR TO BEGINNING CONSTRUCTION AND NOTIFY THE ENGINEER OF THE AVERAGE TOPSOIL DEPTH AS INDICATED ON THE GEOTECHNICAL INVESTIGATION AS PROVIDED BY PATRIOT ENGINEERING, INC. DATED JULY 7, 2011. FAILURE OF THE CONTRACTOR TO FIELD VERIFY TOPSOIL DEPTH WILL BAR CONTRACTOR FROM ANY CLAIM RELATING TO REMOVAL, STOCKPILING AND REPLACEMENT OF TOPSOIL.

16. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE SEEDED OR SODDED UNLESS OTHERWISE SHOWN.

17. THE CONTRACTOR SHALL PERFORM AN EARTHWORK QUANTITY ANALYSIS PRIOR TO COMMENCING CONSTRUCTION TO CONFIRM SUCH QUANTITIES WITH THE ENGINEER. ADJUSTMENTS TO PROPOSED FINISH GRADES BASED UPON THE EARTHWORK QUANTITY ANALYSIS SHALL BE APPROVED BY THE ENGINEER.

5/8" REBAR WITH CAP ENGRAVED "FECO" FOUND

UTILITY AND IMPROVEMENTS LOCATION NOTICE

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HOLLOWAY ENGINEERING & SURVEYING
P.O. Box 234 Mooresville, IN. 46158
Ph: 317-831-7918
Holloway@HollowayEngineering.com

REGISTERED HOLLOWAY SURVEYOR NO. 940024 STATE OF INDIANA PROFESSIONAL

CERTIFIER'S SIGNATURE

DATED:

FILE NO.	113039
DATED	05-16-2013
DRAWN BY	J.E.K.
CHECKED	
REVISED	
REVISED	
REVISED	

PROJECT NAME:

GRADING AND DRAINAGE PLAN

SHEET OR CLIENT NAME:

HEARTLAND MACHINE&ENGINEERING

SHEET NUMBER

C103

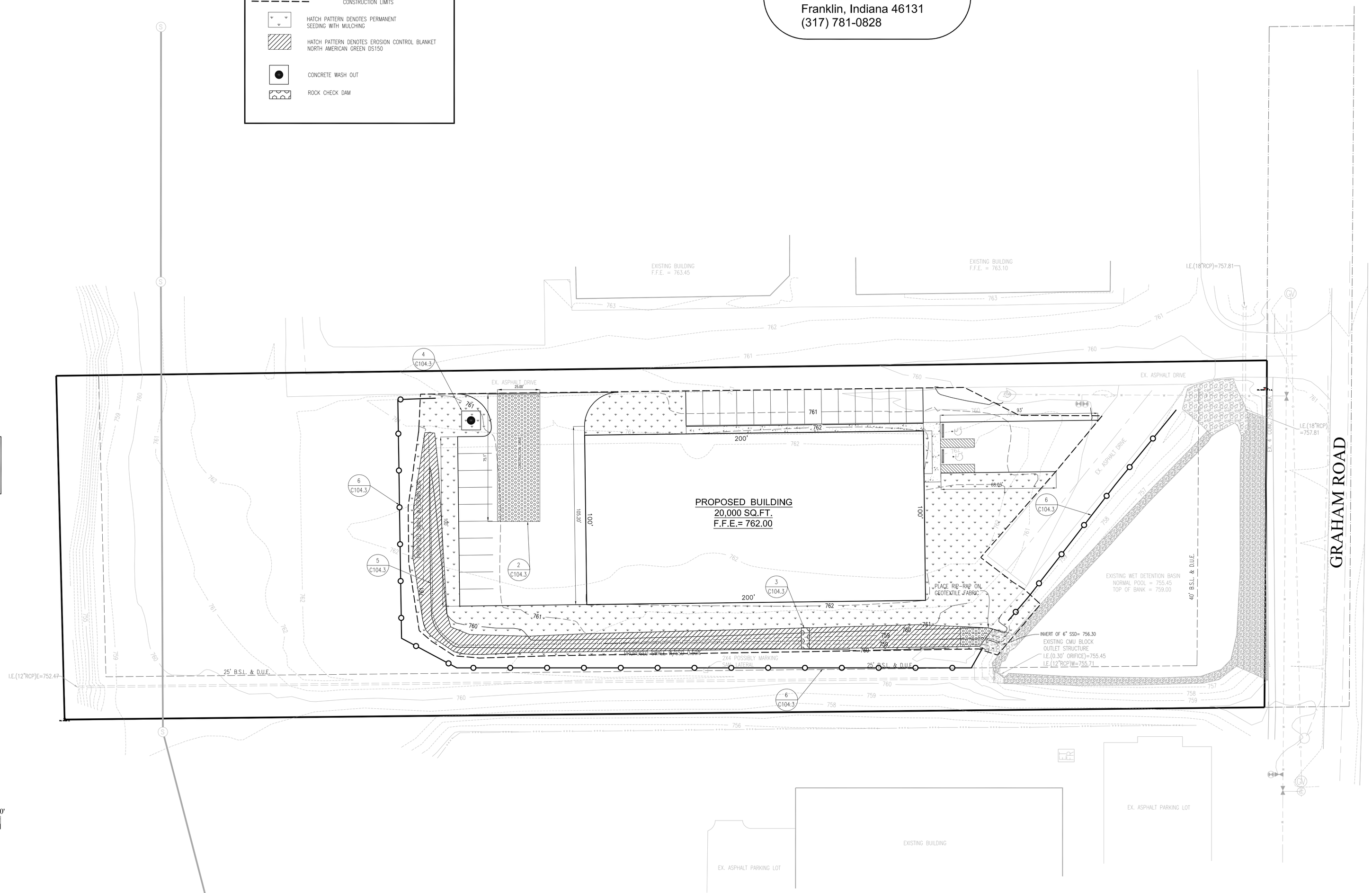
EROSION CONTROL LEGEND

- SILT FENCE
- CONSTRUCTION LIMITS
- HATCH PATTERN DENOTES PERMANENT SEEDING WITH MULCHING
- HATCH PATTERN DENOTES EROSION CONTROL BLANKET NORTH AMERICAN GREEN DS150
- CONCRETE WASH OUT
- ROCK CHECK DAM

Erosion Control Contact:
Tom Goin
2850 Graham Rd.
Franklin, Indiana 46131
(317) 781-0828

NOTES:

1. SEE SHEET C104.2 AND C104.3 FOR ALL EROSION CONTROL DETAILS & NOTES.



0 30' 60' 90'

SCALE: 1 INCH = 30 FEET

GENERAL NOTE:

PROPER IMPLEMENTATION OF THE EROSION AND SEDIMENT CONTROL PLAN AND INSPECTIONS OF THE CONSTRUCTION SITE BY THE DEVELOPER OR A REPRESENTATIVE ARE NECESSARY TO MINIMIZE THE OFF-SITE SEDIMENTATION. THE DEVELOPER SHOULD BE AWARE THAT UNFORESEEN CONSTRUCTION ACTIVITIES AND WEATHER CONDITIONS MAY EFFECT THE PERFORMANCE OF A PRACTICE OR THE EROSION AND SEDIMENT CONTROL PLAN. THE EROSION AND SEDIMENT CONTROL PLAN IS A FLEXIBLE DOCUMENT, WITH PROVISIONS TO MODIFY OR SUBSTITUTE PRACTICES AS NECESSARY.

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Ph: 317-831-7918
Holloway@HollowayEngineering.com

ROSS O. HOLLOWAY REGISTERED PROFESSIONAL ENGINEER STATE OF INDIANA 9400249

CERTIFIER'S SIGNATURE

DATED: SEPTEMBER 17, 2009

FILE NO.	113039
DATED	05-16-2013
DRAWN BY	J.E.K.
CHECKED	
REVISED	
REVISED	
REVISED	

PROJECT NAME:

EROSION CONTROL PLAN

SHEET OR CLIENT NAME:

HEARTLAND MACHINE & ENGINEERING

SHEET NUMBER

C104.1

EROSION CONTROL PLAN INDEX
PLAN ELEMENTS

A1 PLAN INDEX SHOWING LOCATIONS OF REQUIRED ITEMS: Presented herein.
A2 11x17 INCH PLAT SHOWING BUILDING LOT NUMBERS/BOUNDARIES AND ROAD LAYOUT/NAMES: See Site Plan Sheet C102.
A3 PROJECT NARRATIVE: The purpose of this project is to construct a new Warehouse/Office Space with asphalt parking lot and entrance drive. Proper measures shall be taken to assure erosion control compliance during construction.
A4 VICINITY MAP: The Vicinity Map is located on Sheet C100.
A5 LEGAL DESCRIPTION OF THE PROJECT SITE: The legal description of the project site is located on the lower left hand portion of Sheet C100. LATITUDE: 39°31'54" N, LONGITUDE: 86°31'46" W.
A6 LOCATION OF ALL LOTS AND PROPOSED SITE IMPROVEMENTS: All proposed site improvements are located on Sheet C102.
A7 HYDROLOGIC UNIT CODE: 0512020409003O
A8 STATE AND/OR FEDERAL WATER QUALITY PERMITS: No State or Federal water quality permits are required for this project.
A9 STORMWATER DISCHARGE: Onsite stormwater discharge shall leave the site via sheet flow to the south and to the north.
A10 WETLANDS, LAKES, AND WATER COURSES: There are no wetlands delineated on the project site.
A11 RECEIVING WATERS: The Receiving water for this site is XXXX
A12 POTENTIAL DISCHARGES TO GROUNDWATER: There are no potential locations where stormwater may enter the groundwater.
A13 100 YEAR FLOODPLAINS, FLOODWAYS, AND FLOODWAY FRINGES: ALL OF THE LAND WITHIN THE PLAT LIES WITHIN THE FLOOD HAZARD ZONE "C" AS SCALED FROM COMMUNITY PANEL NO. 18063C0278D OF THE FLOOD INSURANCE RATE MAPS FOR THE HENDRICKS COUNTY, INDIANA; DATED SEPTEMBER 25, 2009.
A14 PRE- AND POST-CONSTRUCTION PEAK DISCHARGE:
10-year pre-construction = 1.81 cfs.
10-year post-costruction = 3.72 cfs.
100-year pre-construction = 4.41 cfs.
100-year post-construction = 7.67 cfs

A15 ADJACENT LANDUSE: The adjacent land uses as follows:
North – INDUSTRIAL
East – GRAHAM RD.
South – CHURCH PROPERTY
West – CANARY CREEK
A16 LOCATIONS AND APPROXIMATE BOUNDARIES OF ALL DISTURBED AREAS: The construction limits (boundaries of disturbed area) are shown on the Erosion Control Plan sheet C104.1.
A17 EXISTING VEGETATIVE COVER: The existing site is covered in grass, asphlat drives, and a wet detentionpond.
A18 SOILS MAP DESCRIPTIONS: The soils map and pertinent soil type information is located hereon.
A19 PROPOSED STORMWATER SYSTEMS: A existing wet detention pond outlets into a 12" RCP that outlets into Canary Creek. The stormwater runoff from the site sheet flows into the wet detention basin.
A20 OFF-SITE CONSTRUCTION ACTIVITIES: No offsite construction is proposed.
A21 SOIL STOCKPILES, BORROW AND/OR DISPOSAL AREAS: The additional topsoil not used on-site will be hauled offsite.
A22 EXISTING SITE TOPOGRAPHY: Existing one foot contours are shown on Sheet C101.
A23 PROPOSED FINAL TOPOGRAPHY: Proposed one foot contours are shown on Sheet C103.

STORMWATER POLLUTION PREVENTION – DURING CONSTRUCTION

B1 – POTENTIAL POLLUTANT SOURCES ASSOCIATED THE CONSTRUCTION ACTIVITIES: There is a potential for pollutants associated with construction machinery including diesel fuel, hydraulic fluid, engine oils and lubricants, antifreeze and other petroleum products. Sediment pollution from site disturbing activities could potentially leave the site at the outlet control structure. Also, see list of additional pollutant sources located on this sheet.
B2 –SEQUENCE OF STORMWATER QUALITY MEASURE IMPLEMENTATION: See THE CONSTRUCTION SEQUENCE AND SCHEDULE OF EROSION CONTROL MEASURES located on this sheet.
B3 –CONSTRUCTION ENTRANCE: The construction entrance will be off of on the east side of the property A construction entrance detail is located on Sheet C104.1 and the detail is on Sheet C104.3. For Monitoring and Maintenance guidelines for the Construction Entrance please see MONITORING AND MAINTENANCE GUIDELINES located on the right hand side of this sheet.
B4 – SEDIMENT CONTROL MEASURES FOR SHEET FLOW AREAS: A Silt Fence shall be used to control sediment for sheet flow areas. The silt fence is shown on the Erosion Control Plan Sheet C104.1 and its symbol described in the legend. A detail reference bubble is also shown referencing detail 7 on Sheet C104.3 Temporary seeding shall also be used for sediment control for sheet flow areas. If the earth is undisturbed for more than 7 days apply temporary seeding in these areas. For Monitoring and maintenance guidelines for the Silt Fence and Temporary seeding please see MONITORING AND MAINTENANCE GUIDELINES section located on the right hand side of this sheet.
B5 – SEDIMENT CONTROL MEASURES FOR CONCENTRATED FLOW AREAS: Does not apply.
B6 – STORM SEWER INLET PROTECTION MEASURES: Does not apply.
B7 – RUNOFF CONTROL MEASURES: Does not apply.
B8 – STORMWATER OUTLET PROTECTION MEASURES: Does not apply.
B9 – GRADE STABILIZATION STRUCTURES: Does not apply.
B10 – LOCATION, DIMENSIONS, SPECIFICATIONS AND DETAILS OF EACH STORMWATER QUALITY MEASURE: Each stormwater quality measure is shown on the Erosion Control Plan Sheet C104.1. Specifications and details for these are located hereon and on Sheets SH-18, SH-19.
B11 – TEMPORARY SURFACE STABILIZATION: Temporary surface stabilization measures are shown on the the Erosion Control Plan Sheet C104.1. Specifications and details for this are located on Sheets SH-19.
B12 – PERMANENT SURFACE STABILIZATION: Permanent surface stabilization measures are shown on the the Erosion Control Plan Sheet C104.1 Specifications and details for this are located on Sheet SH-19.
B13 – MATERIAL HANDLING AND SPILL PREVENTION: MSDS procedures shall be used, 3'x3'x6' spill pans shall be used during equipment fueling operations. In addition to MSDS procedure reference the following information:

ALERT PROCEDURES FOR SPILLS:

1. Any personnel observing a spill will immediately instigate the following procedure:
a. Dial "0" from any telephone.
b.Notify the appropriate emergency personnel.
2. Emergency Coordinator will then take the following actions:
a. Barricade the area allowing no vehicles to enter or leave the spill zone.
b. Notify the Indiana Department of Environmental Management,
Office of Emergency Response by calling the appropriate telephone number .
Office 317-233-7745
Toll Free 1-800-233-7745
Also the National Response Center at 1-800-424-8802 and provide the following information:
–Time of observation of the spill
–Location of the spill
–Identify material spilled
–Probable sources of the spill
–Probable time of the spill
–Volume of the spill and duration
–Present and anticipated movement of the spill
–Weather Conditions
–Personnel at the scene
–Action initiated by personnel
c. Notify the local Fire Department: 911
d. Notify the Franklin Police Department: 911
e. Notify the recovery contractor, maintenance personnel or other contractual personnel as necessary for cleanup
f. Coordinate and monitor cleanup until the situation has been stabilized and all spills have been eliminated.
g. Cooperate with the IDEM-OER on procedures and reports involved with the events.

CLEANUP PARAMETERS:

1. The Developer shall be continually kept informed, maintain lists of qualified contractors and Vac-Trucks, tank pumpers and other equipment readily accessible for clean-up operations. In addition a continually updated list of available absorbent materials and clean-up supplies should be kept on site.
2. All maintenance personnel will be made aware of techniques for the prevention of spills. They will be informed of the requirements and procedures out lined in this plan. They will be kept abreast if current developments of new information in the prevention of the spills and or necessary alterations to this plan.
3. When spills occur which could endanger human life and this becomes a primary concern, the discharge of the life saving protection function will be carried out by the local police.
4. Absorbent material which are used in cleaning up spilled materials, will be permitted unless so authorized by the Indiana Department of Environmental Management.
5. Flushing of spilled material with water will not be permitted unless so authorized by the Indiana Department of Environmental Management.

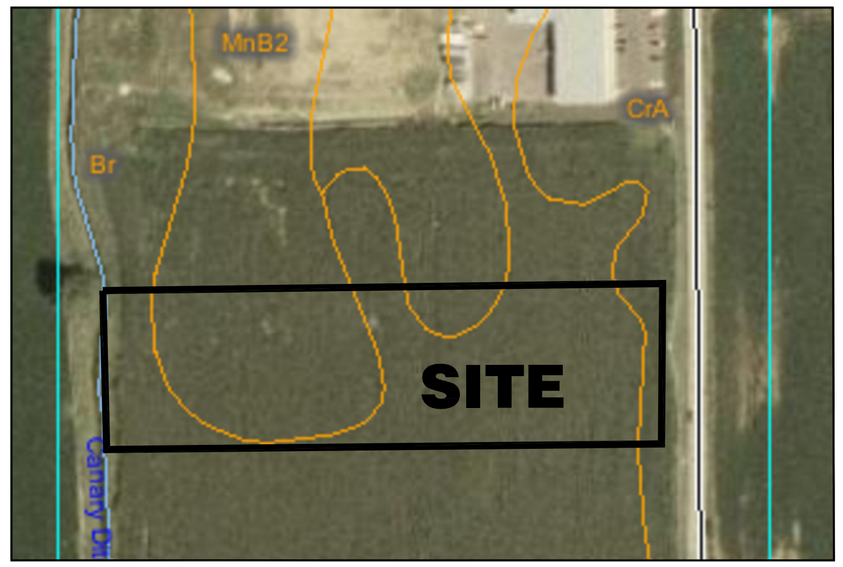
B14 MONITORING AND MAINTENANCE GUIDELINES: The guidelines for monitoring and maintenance are listed on the right hand side of this sheet.

B15 EROSION AND SEDIMENT CONTROL MEASURES FOR INDIVIDUAL BUILDING LOTS: No individual lots are proposed for this development.

C1 PROPOSED POLLUTANTS AND SOURCES ASSOCIATED WITH PROPOSED LAND USE:
Description of pollutants and their sources associated with the proposed land use: Silt and sediment from exposed soils, leaves, mulch, vehicular sources such as leaking fuel or oil, brake fluid, brake dust, grease, antifreeze, metals, rubber fragments, road grit, salts and sands, construction trash and debris, fertilizers, elevated storm runoff temperatures, acid rain, pesticides and pathogens. Please see Pollutants for pre and post construction located hereon for
additional Pollutants. Also, see list located on this sheet for additional pollutants.
C2 STORMWATER QUALITY MEASURE IMPLEMENTATION: Final (post construction) stormwater quality measurers will be implemented as the installation of subsurface utilities, grading and pavement is finalized. Sequence of the stormwater quality items are described in the erosion control schedule in Section B2.

C3 PROPOSED POST CONSTRUCTION STORMWATER QUALITY MEASURES: The overall design has an emphasis on reducing the pollutants in the stormwater discharge. The project was designed to keep the impervious surface and land disturbance as minimal as possible to allow for more open areas.

C4 LOCATION, DIMENSIONS, SPECIFICATIONS, AND DETAILS OF EACH STORMWATER QUALITY MEASURE: As shown Sheets C104.1.
C5 MAINTENANCE GUIDELINES OF POST CONSTRUCTION STORMWATER QUALITY MEASURES: Remove trash and debris from the swales and stormsewer infrasturcture. The pavement should be swept and kept free of sediment carried in by vehicles. A dry absorbant material such as "kitty litter" of "floor dry" should be used to soak up liquids left behind by vehicles. Keep all turf and trees well irrigated to promote vigorous growth. The maintenance for the proposed post construction water quality measures will be provided for the property owner per the Operation and Maintenance Manual on file with the Town of Plainfield.



SOIL MAP (NOT TO SCALE)

INDEX TO SOIL MAP UNITS:

CrA - Crosby silt loam, 0 to 2 percent slopes. This nearly level soil is on broad plains, on ridgetops in rolling areas, or in low drainageways. Areas range from 2 to 450 acres in size. Most are irregularly shaped, but some on ridgetops or in drainageways are long. This soil has the profile described as representative of the series. In some small areas it has a loam or fine sandy loam surface layer. Included with this soil in mapping are small areas of very poorly drained Brookston soils in depressions and narrow watercourses; small and intricately associated areas of somewhat poorly drained soils that contain less clay in the subsoil; small areas of soils that have calcareous underlying material within a depth of 24 inches; and small areas of very poorly drained soils that have thin, discontinuous strata of loamy sand, sandy loam, and loam in the underlying material. Also included in the predominantly urban parts of the county are Crosby soils that have been mixed or disturbed in areas of community development. Runoff is slow. Wetness is the main limitation. Because of wetness and slow permeability, this soil has severe limitations for most nonfarm uses.

Br - Brookston clay loam, 0 to 2 percent slopes. This is a nearly level, deep, very poorly drained soil in drainage ways and broad depressions. It is ponded by runoff from adjacent soils. The areas are irregular in shape and range form 5 to 450 acres in size. Included with this soil in mapping are small areas of Crosby soils on slight rises. Areas of Rensselaer soils are also included. The included soils make up about 5 percent of the map unit. Permeability is moderate, and the available water capacity is high. The content of organic matter is high. Surface runoff is very slow. The water table is near or above the surface in winter and early in spring. The surface layer is friable and is easily worked at the proper moisture content. However, it if is worked when wet, it is sticky and becomes cloddy and hard when it dries out. This soil has severe limitations for use as building sites because of ponding. Drainage systems need to be installed to project the building sites from ponding. Buildings should be constructed without basements. This soil has severe limitations for septic tank absorption fields because of ponding and permeability. This soil has severe limitations for local roads and streets because of frost action, low strength, and ponding. Roadbeds should be elevated to reduce ponding. Drainage ditches help reduce wetness and frost action. The road base should be strengthened with suitable material.

MmB2 - Miami silt loam, 2 to 6 percent slopes, eroded. This gently sloping soil is along drainage ways that cross areas of somewhat poorly drained Crosby soils; on small isolated knolls on broad, nearly level till plains; on gently rolling moraines; and on narrow to broad ridgetops. Areas range from 2 to 200 acre in size. Most are irregularly shaped, but some are long or round. This soil has the profile described as representative of the series. Small areas that have been in woodland or pasture for many years are not eroded. Included with this soil in mapping are small areas of somewhat poorly drained Crosby soils and very poorly drained Brookston soils in narrow, weakly defined drainageways; small areas of moderately sloping Miami soils; small areas of severely eroded soils; and small areas of moderately well drained soils that are somewhat similar to the Miami soil but differ in internal drainage. Also included are areas under community development where the soil has been mixed or disturbed. Runoff is medium. Moderate erosion is the main limitation. Limitations for most nonfarm uses are moderate.

Tom Goin
2850 Graham Rd.
Franklin, Indiana 46131
(317) 781-0828

(B2) STORMWATER QUALITY SEQUENCE

STEP #1. 1. PRE-CONSTRUCTION MEETING WITH THE TOWN OF PLAINFIELD. POST AT THE ENTRANCE OF THE PROJECT SITE THE CONTACT INFORMATION OF THE PERSON RESPONSIBLE FOR CONSTRUCTION ACTIVITIES.

STEP#2. CONTACT IDEM 48 HOURS PRIOR TO STARTING CONSTRUCTION.

STEP#3. DESIGNATE A PERSON TO BE RESPONSIBLE FOR THE SITE INSPECTIONS AFTER EACH 1/2 INCH RAIN AND A MINIMUM OF ONCE EACH WEEK.

STEP #4 INSTALL CONSTRUCTION ENTRANCE.

STEP#5 INSTALL INLET PROTECTION ON EXISTING INLETS AND SILT FENCE ALONG THE PERIMETER OF THE SITE WHERE NOTED.

STEP#6 ROUGH GRADE SITE AND PREPARE BUILDING PAD; INSTALL SITE STORM SEWER INFRASTRUCTURE; SITE UTILITIES. INSTALL INLET PROTECTION ON NEW INLETS.
STEP#7 INSTALL BUILDING & PAVEMENT AND FINAL GRADE SITE.

STEP#8 INSTALL LANDSCAPING AND FINAL SEEDING.

STEP #9 REMOVE ALL SEDIMENT CONTROL PRACTICES ONCE THE SITE IS STABILIZED.

STEP#10 CLEAN AND REMOVE ALL SEDIMENT FROM NEW STORM SEWER STRUCTURES, PIPES, & POST CONSTRUCTION BMP.

NOTE: INSTALL TEMPORARY SEEDING AFTER A SPECIFIC STAGE OF CONSTRUCTION HAS BEEN COMPLETED (TEMPORARY OR FINAL) WHERE AREAS WILL BE IDLE OF CONSTRUCTION ACTIVITIES FOR A PERIOD OF 15 DAYS.

NOTES:

1. SEE SHEET 104.3 FOR ALL EROSION CONTROL DETAILS & NOTES.

Monitoring and Maintence Guidelines

Gravel Construction Drive

1. Inspect daily.
2. Reshape pad as needed for drainage and runoff control.
3. Top dress with clean aggregate as needed.
4. Immediately remove mud and sediment tracked or washed onto public roads.
5. Flushing should only be used if the water can be conveyed into a sediment trap or basin.

Top Soil

1. Inspect daily.
2. Check for damage to perimeter barrier; repair immediately.
3. Check for erosion or damage to newly spread topsoil; repair immediately and revegetate.

Temporary Seeding

1. Inspect within 24 hours of each rain event and at least once every seven calendar days.
2. Check for erosion or movement of mulch and repair immediately.
3. Monitor for erosion damage and adequate cover (80 percent density); reseed, fertilize, and apply mulch where necessary.
4. If nitrogen deficiency is apparent, top-dress fall seeded wheat or rye seeding with 50 pounds per acre of nitrogen in February or March.

Permanent Seeding

1. Inspect within 24 hours of each rain event and at least once every seven calendar days until the vegetation is successfully established.
2. Characteristics of a successful stand include vigorous dark green or bluishgreen seedlings with a uniform vegetative cover density of 90 percent or more.
3. Check for erosion or movement of mulch.
4. Repair damaged, bare, gullied, or sparsely vegetated areas and then fertilize, reseed, and apply and anchor mulch.
5. If plant cover is sparse or patchy, evaluate the plant materials chosen, soil fertility, moisture condition, and mulch application; repair affected areas either by overseeding or preparing a new seedbed and reseeding. Apply and anchor mulch on the newly seeded areas.
6. If vegetation fails to grow, consider soil testing to determine soil pH or nutrient deficiency problems. (Contact your soil and water conservation district or cooperative extension office for assistance.)
7. If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.
8. Add fertilizer the following growing season. Fertilize according to soil test recommendations.
9. Fertilize turf areas annually. Apply fertilizer in a split application. For cool-season grasses, apply one-half of the fertilizer in late spring and onehalf in early fall. For warm-season grasses, apply one-third in early spring, one-third in late spring, and the remaining one-third in middle summer.

Silt Fence

1. Inspect within 24 hours of a rain event and at least once every seven calendar days.
2. If fence fabric tears, starts to decompose, or in any way becomes ineffective, replace the affected portion immediately. Note: All repairs should meet specifications as outlined within this measure.
3. Remove deposited sediment when it is causing the filter fabric to bulge or when it reaches one-half the height of the fence at its lowest point. When contributing drainage area has been stabilized, remove the fence and sediment deposits, grade the site to blend with the surrounding area, and stabilize.

Mulching

1. Inspect within 24 hours of each rain event and at least once every seven calendar days.
2. Check for erosion or movement of mulch; repair damaged areas, reseed, apply new mulch and anchor the mulch in place.
3. Continue inspections until vegetation is firmly established.
4. If erosion is severe or recurring, use erosion control blankets or other more substantial stabilization methods to protect the area.

Erosion Control Blanket

1. Inspect within 24 hours of each rain event and at least once every seven calendar days.
2. Check for erosion or displacement of the blanket.
3. If any area shows erosion, pull back that portion of the blanket covering the eroded area, add soil and tamp, reseed the area, replace and staple the blanket.

SEDI-GUARD Inlet Protection

1. Inspect placement of sediguards periodically, after each storm event and after any construction activity that has the potential to move or dislodge the sediguard. (grading, storing, heavy truck traffic etc.)
2. Clean and dispose of any excessive sediment or trash that may accumulate at inlets.
3. Check all zip ties and replace or tighten to insure the proper function of the sediguard.

Concrete Washout

1. Inspect daily and after each storm event.
2. Inspect the integrity of the overall structure including, where applicable, the containment system.
3. Inspect the system for leaks, spills, and tracking of soil by equipment.
4. Inspect the polyethylene lining for failure, including tears and punctures.
5. Once concrete wastes harden, remove and dispose of the material.
6. Excess concrete should be removed when the washout system reaches 50 percent of the design capacity. Use of the system should be discontinued until appropriate measures can be initiated to clean the structure. Prefabricated systems should also utilize this criterion, unless the manufacturer has alternate specifications.
7. Upon removal of the solids, inspect the structure. Repair the structure as needed or construct a new system.
8. Dispose of all concrete in a legal manner. Reuse the material on site, recycle, or haul the material to an approved construction/demolition landfill site. Recycling of material is encouraged. The waste material can be used for multiple applications including but not limited to roadbeds and building.
9. The availability for recycling should be checked locally.
10. The plastic liner should be replaced after every cleaning; the removal of material will usually damage the lining.
11. The concrete washout system should be repaired or enlarged as necessary to maintain capacity for concrete waste.
12. Concrete washout systems are designed to promote evaporation. However, if the liquids do not evaporate and the system is near capacity it may be necessary to vacuum or remove the liquids and dispose of them in an acceptable method. Disposal may be allowed at the local sanitary sewer authority provided their National Pollutant Discharge Elimination System permits allow for acceptance of this material. Another option would be to utilize a secondary containment system or basin for further dewatering.
13. Prefabricated units are often pumped and the company supplying the unit provides this service.
14. Inspect construction activities on a regular basis to ensure suppliers, contractors, and others are utilizing designated washout areas. If concrete waste is being disposed of improperly, identify the violators and take appropriate action.
15. When concrete washout systems are no longer required, the concrete washout systems shall be closed. Dispose of all hardened concrete and other materials used to construct the system.
16. Holes, depressions and other land disturbances associated with the system should be backfilled, graded, and stabilized.

Indiana 811 Know what's below. Call before you dig.

HOLLOWAY ENGINEERING & SURVEYING
P.O. Box 234 Mooresville, IN. 46158
Ph: 317-831-7918
Holloway@HollowayEngineering.com

REGISTERED ROSS O. HOLLOWAY 940024 STATE OF INDIANA PROFESSIONAL ENGINEER

CERTIFIER'S SIGNATURE
DATED:

FILE NO. 13039
DATED 05-18-2013
DRAWN BY J.E.K
CHECKED
REVISED
REVISED
REVISED

PROJECT NAME:
EROSION CONTROL PLAN
SHEET OR CLIENT NAME:
HEARTLAND MACHINE&ENGINEERING

SHEET NUMBER
C104.2

GENERAL SEEDING REQUIREMENTS AND SCHEDULE (1)

RANKING:
1 GOOD
2 MEDIUM
– NOT TOLERANT

SALT TOLERANCE
T TOLERANCE
MT MEDIUM TOLERANCE
S SLIGHT TOLERANCE

	SOIL CONDITION			SHADE TOLERANCE	CLOSE MOWING TO 1½" OR LESS	TRAMPING TOLERANCE	FERTILITY NEEDS	WINTER HARDINESS ZONE	DROUGHT TOLERANCE (DAYS)	MATURE HEIGHT (IN.)	EMERGENCE TIME (DAYS)	SALT TOLERANCE		
	WET	NORM	DRY									GEN.	SOLL	SPRAY
CREEPING RED FESCUE FESTUCO RUBRA	2	1	2	1	1	1	MED	1	20–25	12–18	17–21			S
KENTUCKY BLUEGRASS POD PRATINSIS	2	1	2	1	1	1	MED	1	20–35	12–18	10–20			MT
TALL FESCUE FESTUCA L ARUNDINACEA	2	1	1	1	1	1	LOW	1	24–35	24–36	15–14		T	
PERENNIAL RYEGRASS LOLLUM PARENNA	2	1	2	1	1	2	MED–HIGH	2	15–20	12–18	15–10		MT	
CROWNVETCH CORONILLA VARIA	–	1	1	2	–	–	LOW	1	15–10	1 24	14–21	T		
RED CLOVER TRIFOLLUM PRATENSE	–	1	–	2	–	–	MED	1	17–10	1 18	15–10	S	S	

MULCHING MATERIAL, WHEN SPECIFIED, SHALL BE APPLIED UNIFORMLY IN A CONTINUOUS BLANKET AT THE RATE OF 2 TONS PER ACRE. MULCH SHALL BE PLACED WITHIN 24 HOURS AFTER SEEDING. THE PERCENT OF MOISTURE IN THE MULCH SHALL BE DETERMINED IN ACCORDANCE WITH INDOT SPECIFICATIONS.

MULCHING MATERIAL SHALL BE PUNCHED INTO THE SOIL SO THAT IT IS PARTIALLY COVERED. THE PUNCHING OPERATION SHALL BE PERFORMED LONGITUDINALLY WITH THE MULCH TILLER. THE TOOLS USED FOR PUNCHING PURPOSES SHALL BE DISKS THAT ARE NOTCHED AND HAVE A MINIMUM DIAMETER OF 16 INCHES. THE DISKS SHALL BE FLAT OR UNCUPPED SUCH AS NOTCHED COULTERS AS COMMONLY USED ON MOLDBOARD PLOWS. DISKS SHALL BE PLACED A MAXIMUM OF 8 INCHES APART ALONG THE AXLE OR SHAFT. SHAFT OR AXLE SECTIONS OF DISKS SHALL NOT EXCEED 8 FEET IN LENGTH.

OTHER METHODS AS SPECIFIED IN THE INDIANA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS CURRENT ADDITION, MAY BE EMPLOYED AS CONDITIONS REQUIRE.

GENERAL NOTES:

1. FERTILIZER AND AGRICULTURAL LIMESTONE SHALL BE SPREAD UNIFORMLY OVER THE AREA TO BE SEEDED. THEY SHALL BE MIXED INTO THE TOP 2" OF SOIL WITH A DISK HARROW, ROTARY TILLER, OR OTHER APPROVED EQUIPMENT. FERTILIZER SHALL BE SPREAD AT THE RATE OF 800 POUNDS PER ACRE, AND AGRICULTURAL LIMESTONE AT THE RATE OF 1/2 TON PER ACRE UNLESS OTHERWISE SPECIFIED.

2. TEMPORARY SEEDING: THE AREAS WHERE STRIPPING, CUTS OR FILLS HAVE BEEN GRADED SHALL BE SEEDED FOR SLIT AND EROSION PROTECTION WITH ONE OF THE FOLLOWING METHODS:

   A. EARLY SPRING MIX: 100% OATS
      SEEDING RATE: 50 LBS./ACRE

   B. SPRING OR LATE FALL MIX: 100% ANNUAL RYE
      SEEDING RATE: 50 LBS./ACRE

   C. FALL MIX: 100% PERENNIAL RYE
      SEEDING RATE: 50 LBS./ACRE

   STRAW OR MULCH AS APPROVED BY THE ENGINEER SHALL BE APPLIED AT A RATE OF 2 TONS PER ACRE.

3. HYDRO–SEEDING: HYDRO–SEEDING SHALL BE AS PER I.D.O.H SPECIFICATIONS, LATEST EDITION. FERTILIZER SHALL BE 12–12–12 APPLIED AT THE RATE OF 400 POUNDS PER ACRE, SEED MIXTURE SHALL BE 60 POUNDS PER ACRE OF PERENNIAL RYE GRASS AND 60 POUNDS PER ACRE OF KENTUCKY 31 FESCUE OR ALTA FESCUE.

EROSION CONTROL GENERAL REQUIREMENTS

- LAND ALTERATIONS WHICH STRIP THE LAND OF VEGETATION, INCLUDING REGRADING, SHALL BE DONE IN A WAY THAT WILL MINIMIZE EROSION. WHENEVER FEASIBLE, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED AND SUPPLEMENT.
- THE DURATION OF TIME WHICH AN AREA REMAINS EXPOSED SHALL BE KEPT TO A PRACTICAL MINIMUM. THE AREA SHALL BE STABILIZED AS QUICKLY AS PRACTICAL.
- TEMPORARY VEGETATION OR MULCHING SHALL BE USED TO PROTECT EXPOSED AREAS DURING DEVELOPMENT.
- PERMANENT AND FINAL VEGETATION OR STRUCTURAL EROSION CONTROL DEVICES SHALL BE INSTALLED AS SOON AS PRACTICAL, UNDER THE CIRCUMSTANCES.
- SEDIMENT IN RUN–OFF WATER SHALL BE TRAPPED BY THE USE OF SUCH METHODS AS DEBRIS BASINS, AND SILT TRAPS UNTIL THE DISTURBED AREA IS STABILIZED.

EROSION CONTROL CONSTRUCTION SEQUENCE & SCHEDULE

EROSION CONTROL CONSTRUCTION SEQUENCE SCHEDULING	
CONSTRUCTION PHASE (SPECIFIC ACTIVITIES OR EROSION CONTROL PRACTICES)	CONSTRUCTION SCHEDULE CONSIDERATIONS
PRE–CONSTRUCTION ACTIONS (EVALUATION/PROTECTION OF IMPORTANT SITE CHARACTERISTICS)	BEFORE CONSTRUCTION, EVALUATE, MARK, AND PROTECT IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, UNIQUE AREAS (e.g., WETLANDS) TO BE PRESERVED, ON–SITE SEPTIC SYSTEM ABSORPTION FIELDS, AND VEGETATION SUITABLE FOR FILTER STRIPS, ESPECIALLY IN PERIMETER AREAS.
CONSTRUCTION ACCESS * (CONSTRUCTION ENTRANCES, CONSTRUCTION ROUTES, EQUIPMENT PARKING AREAS)	STABILIZE BARE AREAS IMMEDIATELY WITH GRAVEL AND TEMPORARY VEGETATION AS WORK TAKES PLACE
SEDIMENT BARRIERS AND TRAPS * (BASIN TRAPS, SILT FENCES, OUTLET PROTECTION)	INSTALL PRINCIPAL BASINS AFTER CONSTRUCTION SITE IS ASSESSED. INSTALL ADDITIONAL TRAPS AND BARRIERS AS NEEDED DURING GRADING.
RUNOFF CONTROL * (DIVERSIONS, PERIMETER DIKES, WATER BARS, OUTLET PROTECTION)	INSTALL PRACTICES AFTER PRINCIPAL SEDIMENT TRAPS ARE INSTALLED BUT BEFORE SITE GRADING. INSTALL ADDITIONAL RUNOFF CONTROL MEASURES DURING GRADING AS NEEDED.
RUNOFF CONVEYANCE SYSTEMS * (STABILIZED STREAMBANKS, STORM DRAINS,INLET AND OUTLET PROTECTION, CHANNELS)	WHERE NECESSARY, STABILIZE STREAMBANKS AS EARLY AS POSSIBLE. INSTALL PRINCIPAL CONVEYANCE SYSTEM WITH RUNOFF CONTROL MEASURES. INSTALL REMAINDER OF SYSTEM AFTER GRADING.
LAND CLEARING AND GRADING * (CUTTING/FILLING, GRADING DRAINS, SEDIMENT TRAPS, BARRIERS, DIVERSIONS, SURFACE ROUGHENING)	BEGIN MAJOR CLEARING AND GRADING AFTER INSTALLING THE KEY SEDIMENT AND RUNOFF MEASURES. CLEAR BORROW AND DISPOSAL AREAS AS NEEDED. INSTALL ADDITIONAL CONTROL MEASURES AS GRADING PROGRESSES.
SURFACE STABILIZATION * (TEMPORARY AND PERMANENT SEEDING, MULCHING, SODDING, RIP–RAP)	APPLY TEMPORARY OR PERMANENT STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS WHERE WORK IS DELAYED OR COMPLETED.
BUILDING CONSTRUCTION * (BUILDING, UTILITIES, PAVING)	INSTALL NECESSARY EROSION AND SEDIMENT CONTROL PRACTICES AS WORK TAKES PLACE.
LANDSCAPING AND FINAL STABILIZATION * (TOPSOIL, TREES, AND SHRUBS, PERMANENT SEEDING, MULCHING, SODDING, RIP–RAP)	STABILIZE ALL OPEN AREAS INCLUDING BORROW AND SPOIL AREAS. REMOVE TEMPORARY CONTROL MEASURES AND STABILIZE.

*MAINTENANCE––(1)INSPECT PRACTICES AT LEAST ONCE A WEEK, & (2) MAKE REPAIRS IMMEDIATELY AFTER PERIODS OF RAINFALL.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT PAD (2)

* TO PROVIDE A STABLE ENTRANCE/EXIT CONDITION FROM THE CONSTRUCTION SITE.
* TO KEEP MUD AND SEDIMENT OFF PUBLIC ROADS

MATERIAL: 2–3 IN. WASHED STONE (INDOT CA NO. 2) OVER A STABLE FOUNDATION.
THICKNESS: 6 IN. MINIMUM
WIDTH: 12 FT. MINIMUM OR FULL WIDTH OF ENTRANCE/EXIT ROADWAY, WHICHEVER IS GREATER.
LENGTH: 50 FT. MINIMUM. THE LENGTH CAN BE SHORTER FOR SMALL SITES SUCH AS FOR AN INDIVIDUAL HOME.
WASHING FACILITY (OPTIONAL): LEVEL AREA WITH 3 IN. WASHED STONE MINIMUM OR A COMMERCIAL RACK, AND WASTE WATER DIVERTED TO A SEDIMENT TRAP OR BASIN (PRACTICE 3.72).
GEOTEXTILE FABRIC UNDERLINER: MAY BE USED UNDER WET CONDITIONS OR FOR SOILS WITHIN A HIGH SEASONAL WATER TABLE TO PROVIDE GREATER BEARING STRENGTH.

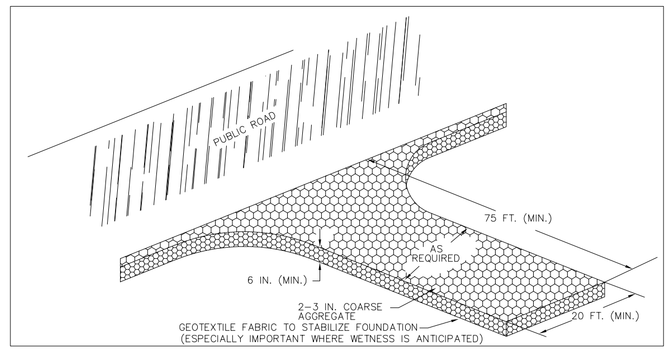


EXHIBIT 3.01–B. PLAN OF A TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT PAD.

1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES IN PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA, AND GRADE AND CROWN FOR POSITIVE DRAINAGE.
3. IF SLOPE TOWARDS THE ROAD EXCEEDS 2% CONSTRUCT A 6–8" HIGH WATER BAR (RIDGE) WITH 3:1 SIDE SLOPES ACROSS THE FOUNDATION AREA ABOUT 15 FT. FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE ROAD (PRACTICE 3.24) (SEE EXHIBIT 3.01–C)
4. INSTALL PIPE UNDER THE PAD IF NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.
5. IF WET CONDITIONS ARE ANTICIPATED, PLACE GEOTEXTILE FABRIC ON THE GRADED FOUNDATION TO IMPROVE STABILITY.
6. PLACE STONE TO DIMENSIONS AND GRADE SHOWN IN THE EROSION/SEDIMENT CONTROL PLAN, LEAVING THE SURFACE SMOOTH AND SLOPED FOR DRAINAGE.
7. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.

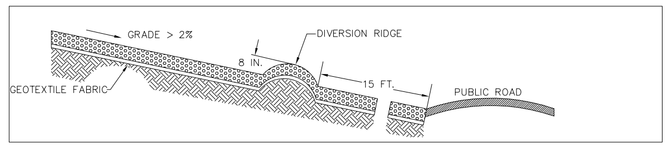
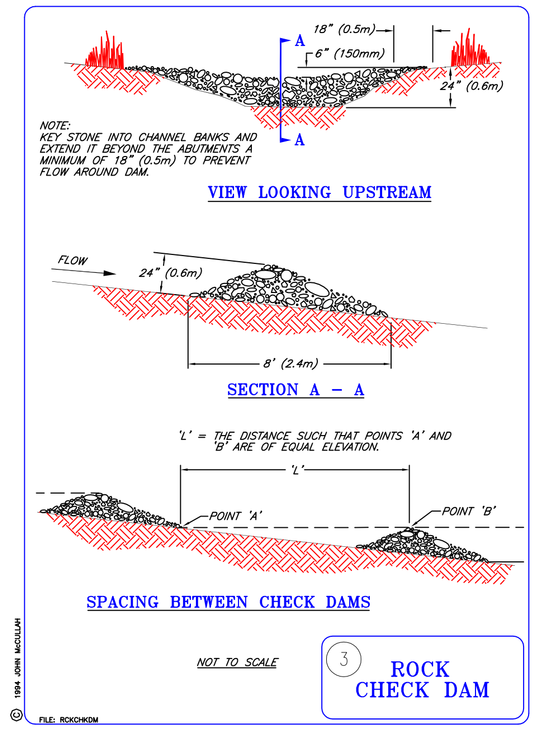


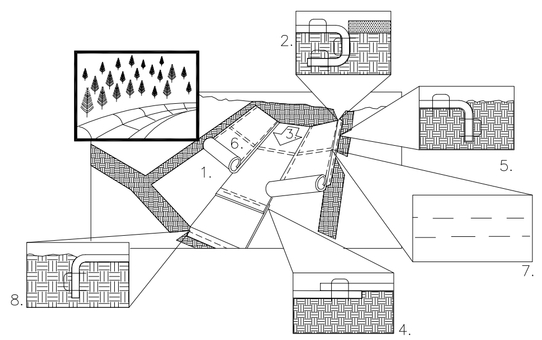
EXHIBIT 3.01–C. PLAN OF A TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT PAD WITH DIVERSION RIDGE WHERE GRADE EXCEEDS 2%

* INSPECT ENTRANCE PAD AND SEDIMENT DISPOSAL AREA WEEKLY AND AFTER STORM EVENTS OR HEAVY USE.
* RESHAPE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.
* TOPDRESS WITH CLEAN STONE AS NEEDED.
* IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY BRUSHING OR SWEEPING. FLUSHING SHOULD ONLY BE USED IF THE WATER IS CONVEYED INTO A SEDIMENT TRAP OR BASIN.
* REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY.



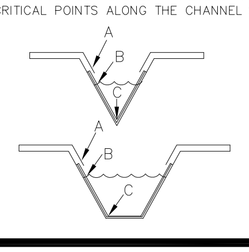
CHECK DAMS
ConstructionSpecifications:
Obtain appropriate permits or approvals from local or state regulatory agencies.
The maximum spacing between the dams shall be such that the toe of the upstream dam is at the same elevation as the top of the downstream dam.
Rock dams shall be constructed of 2-15 inch (51-381 mm) rock.
Keep the center rock (spillway) section at least 6 inches (0.2 m) lower than the outer edges.
Extend the abutments 18 inches (0.5 m) into the channel bank.
Straw bales shall be placed in a single row, lengthwise, oriented perpendicular to the flow, with the ends of adjacent bales tightly abutting one another.
Straw bale dams shall be extended such that the bottoms of the end bales are higher in elevation than the top of the middle bale spillway to ensure that sediment-laden runoff will flow over the barrier, and not around it.
Each straw bale shall be embedded in the soil a minimum of 4 inches (101 mm). Use straw, rocks, or filter fabric to fill any gaps between the bales and tamp the backfill material to prevent erosion under or around the bales.
If the straw bales are wire bound, they should be oriented so the bindings are around the sides rather than along the top and bottom. Wire bindings that are placed in contact with the soil soon disintegrate and may allow the bale to fall apart.
The straw bales shall be securely anchored in place by two wooden stakes or rebar driven through the bales. The first stake in each bale shall be driven toward the previously laid bale to force the bales tightly together. Drive the stakes at least 18 inches (0.5 m) into the ground. Proper staking is particularly important in channel flow applications.
Construct an energy dissipator to reduce downstream erosion.
Inspection and Maintenance:
The check dams shall be inspected for damage periodically during the winter and after each significant storm (1 inch (25 mm) in 24 hours) Prompt repairs shall be made to ensure that the dam is functioning properly. Any erosion caused by flows around the edges of the dam or under the structure shall be corrected immediately.
Remove sediment from behind the dams when they become 60 percent full, or as needed.
The removed sediment shall be deposited in an area that will not contribute sediment off-site and can be permanently stabilized.
Remove checkdams and stakes when stabilization is complete.

EROSION CONTROL MATTING – CHANNEL APPLICATION (5)



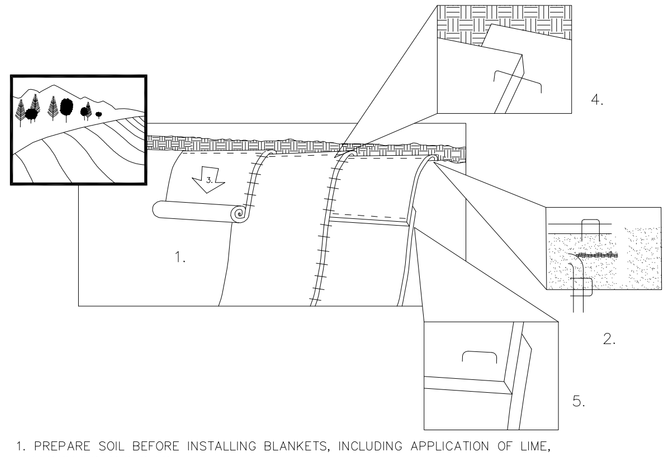
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW ON BOTTOM OF CHANNEL.
4. PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH A 6" OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED IN6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. BLANKETS ON SIDE SLOPES MUST BE OVERLAPPED 4" OVER THE CENTER BLANKET AND STAPLED.
7. IN MEDIUM/HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOM–MENDED AT 30 TO 40 FOOT INTERVALS. USE ARROW OF STAPLES 4" APART OVER THE ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGGERED PATTERN.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

NOTE:
HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.



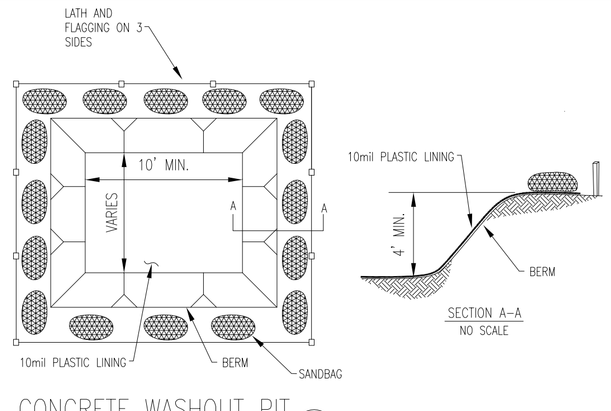
CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM SIDE SLOPE VERTICES

EROSION CONTROL MATTING – SLOPE APPLICATION



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS DOWN THE SLOPE IN THE DIRECTION OF THE WATER FLOW.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 6" OVERLAP. STAPLE THROUGH OVER–LAPPED AREA. APPROXIMATELY 12" APART.

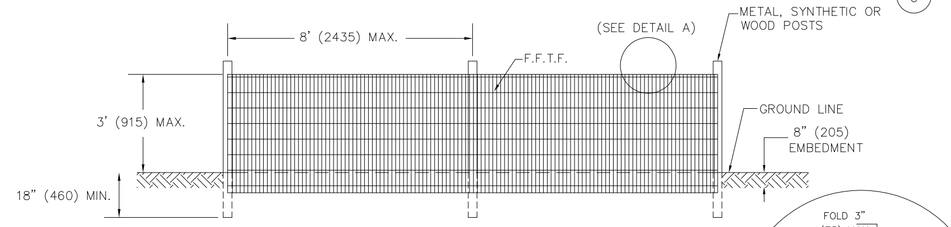
REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS.

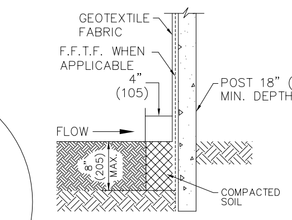


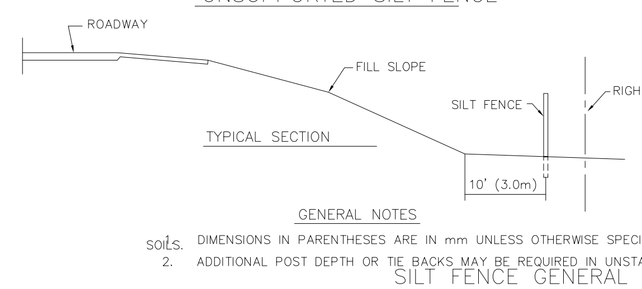
CONCRETE WASHOUT PIT (4)

NO SCALE

SILT FENCE APPLICATION AND INSTALLATION (6)







SILT FENCE GENERAL SPECIFICATIONS

SILT FENCE SHALL BE A MACHINE PRODUCED GEOTEXTILE OF 100% POLYPROPYLENE.

THE FABRIC SHALL BE OF WOVEN CONSTRUCTION, DESIGNED SPECIFICALLY TO FILTER WATER AND CONTROL SOIL MIGRATION.

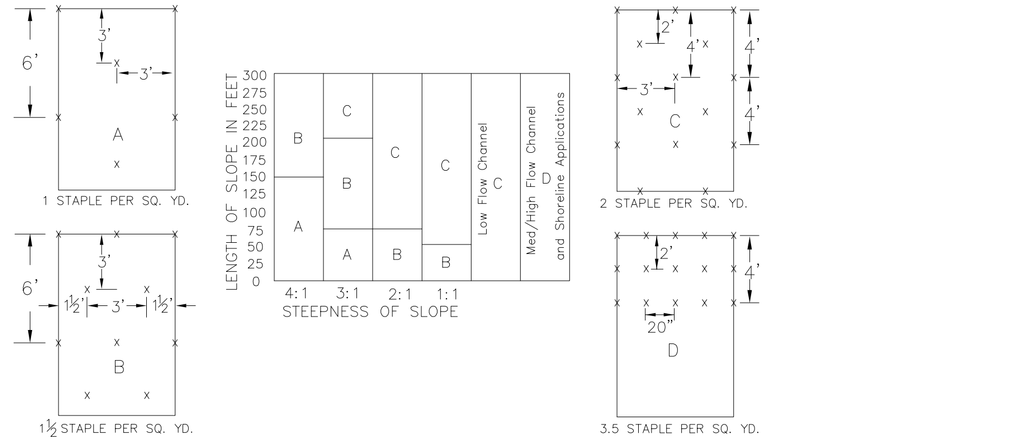
WOODEN STAKES WILL ALSO BE SUPPLIED. THEY WILL BE 1.25" x 1.25" x 48" AND SHARPENED TO A PENCIL POINT. (TO RETARD SPLITTING) THE STAKES WILL BE ATTACHED, TO THE FABRIC, AT BOTH ENDS AND ALSO BE ATTACHED APPROXIMATELY EVERY 6 FEET IN BETWEEN.

THE FABRIC ALSO CONFORMS TO THE FOLLOWING PHYSICAL PROPERTIES:

FABRIC WEIGHT:	3 OX / SYS
GRAB STRENGTH:	WARP 150 lbs.
ELONGATION:	WARP 20%
TRAP TEAR STRENGTH:	65 lbs.
BURET STRENGTH:	350 psi
UV RESISTENCE:	> 70%
E.O.S.:	40
SLURRY FLOW RATE:	3 gal/MIN./SQ. FT.
SEDIMENT RETENTION:	75%

PHYSICAL SPECIFICATIONS
LENGTH: 100 yards
HEIGHT: 37 inches
WEIGHT: 26 lbs

GENERAL STAPLE PATTERN GUIDE FOR EROSION CONTROL MATTING



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P.O. Box 234 Mooresville, IN. 46158
Ph: 317-831-7918
Holloway@HollowayEngineering.com

REGISTERED PROFESSIONAL ENGINEER
HOLLOWAY
NO. 9400249
STATE OF INDIANA

CERTIFIER'S SIGNATURE
DATED:

FILE NO.	113039	CHECKED	
DATED	05-16-2013	REVISED	
DRAWN BY	J.E.K.	REVISED	
		REVISED	

PROJECT NAME:
EROSION CONTROL DETAILS AND SPECIFICATION

SHEET OR CLIENT NAME:

HEARTLAND MACHINE & ENGINEERING

SHEET NUMBER
C104.3

UTILITY AND IMPROVEMENTS LOCATION NOTICE

Only above ground utilities and improvements, visible on the date of survey, or visible marking of utility locations as done by others, are shown on this survey. No certification either expressed or implied is given as to the availability or capacity of any utility. Further there is no certification either expressed or implied for the location, horizontal or vertical, of any underground utility or structure, including but not limited to slabs, foundations, manholes, pipes, tiles, ducts, mains, valves, vaults, cables or wires.

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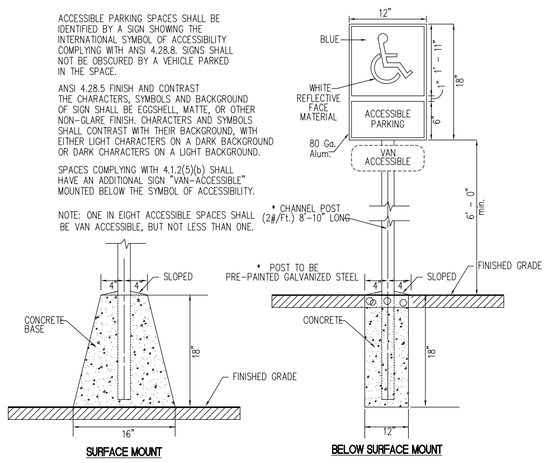
SHEET NUMBER	C106
PROJECT NAME:	PAVEMENT PLAN
SHEET OR CLIENT NAME:	HEARTLAND MACHINE & ENGINEERING
FILE NO.	113039
DATED	05-16-2013
DRAWN BY	J.E.K.
CHECKED	
REVISED	
REVISED	
REVISED	

CERTIFIER'S SIGNATURE

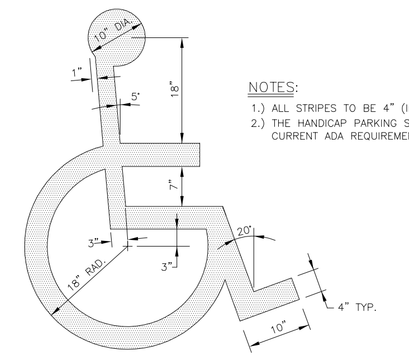
DATED:

ROSS O. HOLLOWAY REGISTERED NO. 9400249 STATE OF INDIANA PROFESSIONAL ENGINEER

HOLLOWAY ENGINEERING & SURVEYING
P.O. Box 234 Mooresville, IN. 46158
Ph: 317-831-7918
Holloway@HollowayEngineering.com

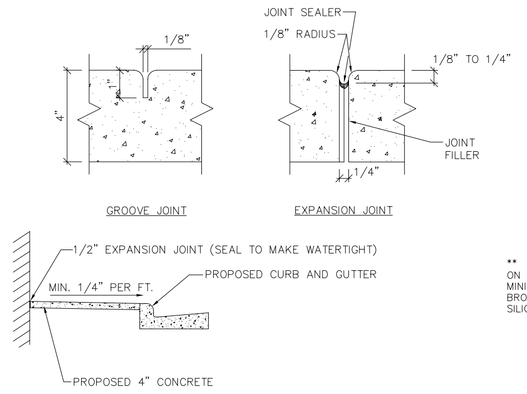


ACCESSIBLE PARKING SIGN DETAIL 1
(NO SCALE)



HANDICAP PARKING SYMBOL DETAIL 2
(NO SCALE)

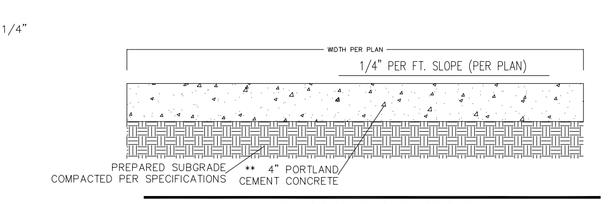
NOTES:
1.) ALL STRIPES TO BE 4" (INCHES) PAINTED BLUE
2.) THE HANDICAP PARKING SYMBOL SHALL MEET CURRENT ADA REQUIREMENTS



GENERAL NOTES

1. A GROOVE JOINT 1" DEEP WITH 1/8" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS OR AS INDICATED ON PLANS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 45' INTERVALS NOT TO EXCEED 50' AND MATCHING EXPANSION/CONSTRUCTION JOINT IN ADJACENT CURB. A SEALED 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.
2. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3600 PSI, IN 28 DAYS.
3. BROOM FINISH CONCRETE.
4. SEE PLAN FOR SIDEWALK WIDTH.

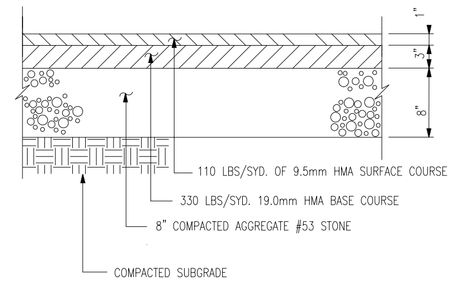
CONCRETE SIDEWALK 3
(NO SCALE)



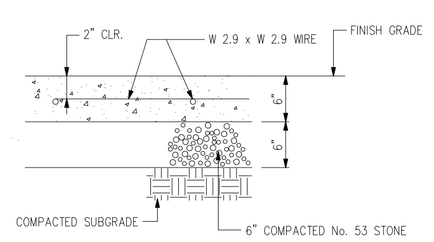
ON PREPARED SUBGRADE

** 4" OF 4000 P.S.I. CONCRETE WITH FIBER REINFORCEMENT ON PREPARED SUBGRADE. PROVIDE SCORED JOINTS AS SHOWN ON SITE PLAN OR AT INTERVALS NOT TO EXCEED THE WIDTH OF THE WALK. PROVIDE 1/2" EXPANSION JOINTS EVERY 50' MINIMUM AND WHERE SIDEWALK ABUTTS CONCRETE PAVEMENT, CURBS, AND VERTICAL SURFACES SUCH AS WALLS. MEDIUM BROOM FINISH TO BE APPLIED IN TRANSVERSE DIRECTION. EXPANSION JOINTS SHALL BE SEALED WITH A BACKER ROD AND SILICON JOINT SEALER.

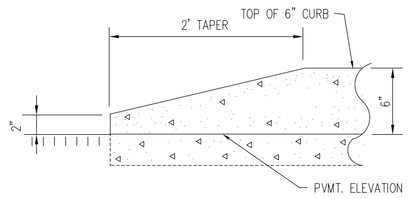
CONCRETE WALK 4
SCALE: NONE



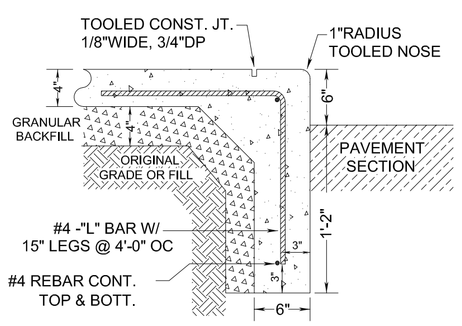
PUBLIC PARKING AREAS 5
(NO SCALE)



CONCRETE PAVEMENT 6
(NO SCALE)

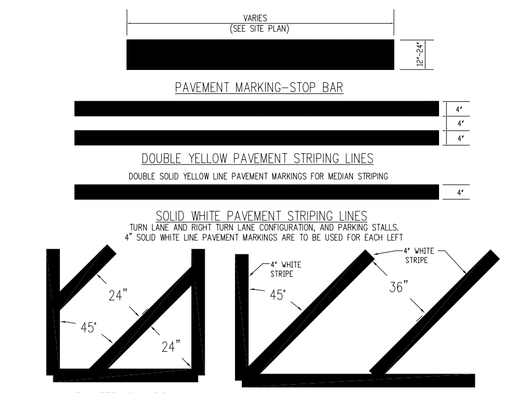


CURB END TRANSITION 7
(NO SCALE)

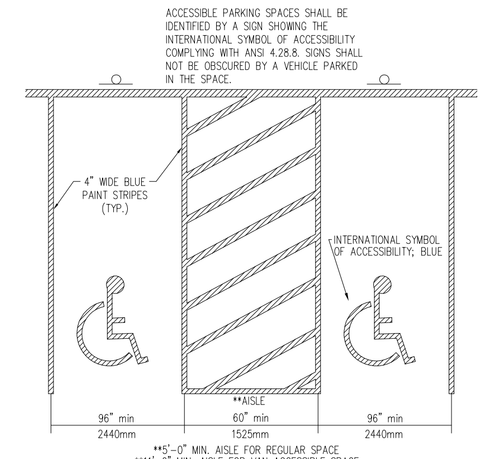


1. CONCRETE TO BE 4000 PSI AIR ENTRAINED.
2. BROOM FINISH
3. APPLY ANTI-SPALLING PENETRATING CURING COMPOUND.

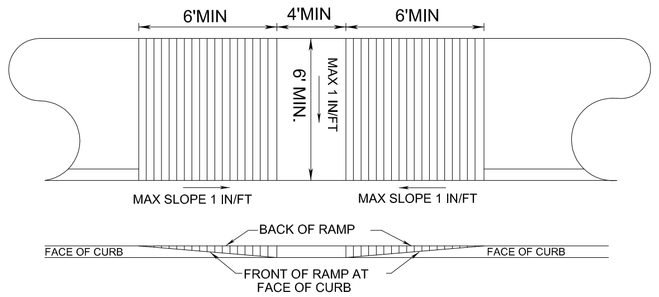
INTEGRAL CURB & SIDEWALK DETAIL (NTS) 8



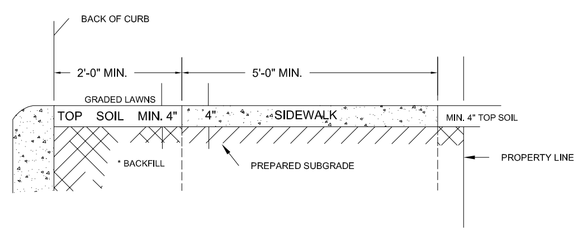
TRAFFIC STRIPING 9
(NO SCALE)



ACCESSIBLE PARKING SPACE 10
(NO SCALE)

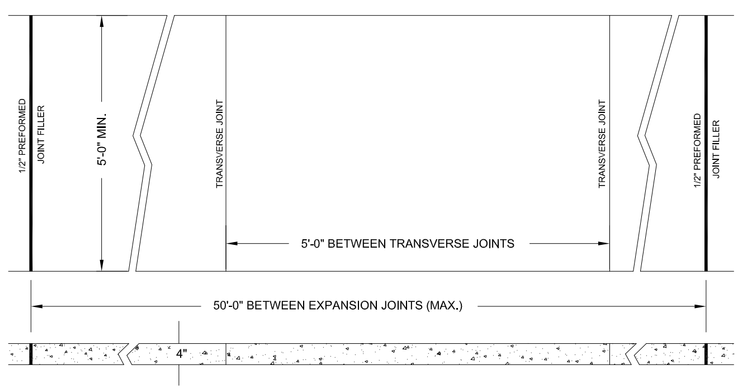


SIDEWALK RAMP DETAIL 12
NTS



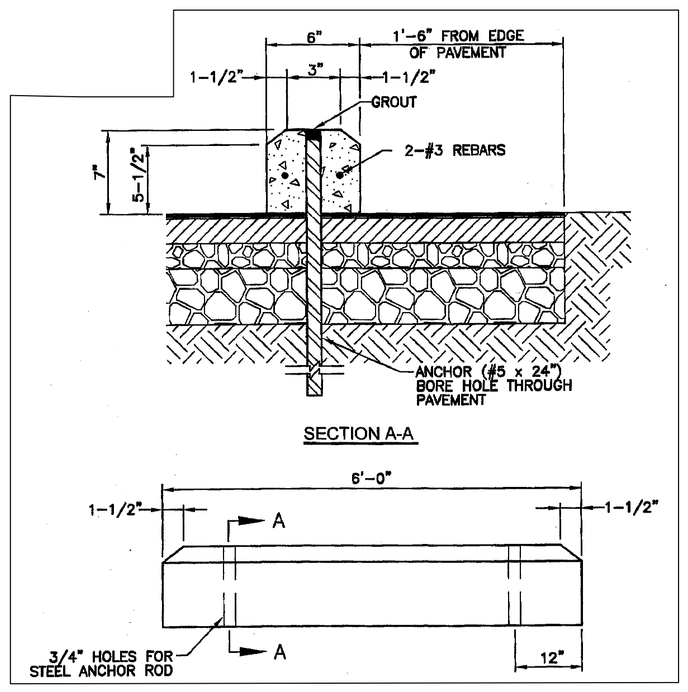
TYPICAL SIDEWALK SECTION
NOT TO SCALE

* THE SPACE BEHIND THE CURB SHALL BE FILLED WITH SUITABLE MATERIAL TO THE REQUIRED ELEVATION AND COMPACTED IN LAYERS NOT TO EXCEED 6" IN DEPTH.
SUBGRADE UNDER ALL CURB, SIDEWALK AND DRIVES SHALL BE COMPACTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

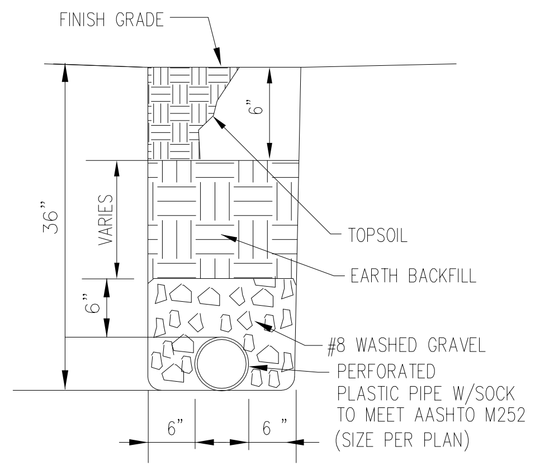


CONCRETE SIDEWALK
NOT TO SCALE

SIDEWALK DETAILS 11
NOT TO SCALE



PARKING STOP 12
(NO SCALE)



YARD AREAS

UNDERDRAIN/SUBSURFACE DRAIN (SSD) 13
SCALE: NONE

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Ph: 317-831-7918
Holloway@HollowayEngineering.com

REGISTERED HOLLOWAY NO. 940024 STATE OF INDIANA PROFESSIONAL ENGINEER

CERTIFIER'S SIGNATURE

DATED:

FILE NO.	13039
DATED	05-16-2013
DRAWN BY	J.E.K.
CHECKED	
REVISED	
REVISED	
REVISED	

GENERAL DETAILS

PROJECT NAME:

SHEET OR CLIENT NAME:

HEARTLAND MACHINE & ENGINEERING

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SHEET NUMBER
C107

SECTION 01010 – GENERAL CONDITIONS

1. The current edition of the Indiana Department of Transportation Standard Specifications (INDOT), are the basic materials and. referenced specification. The sections below for various items tare to clarify the intent of the requirements for this project. Please note that other sections of these Standard Specifications may also be applicable.

2. These Specifications in themselves, or when combined with the American Institute of Architects (AIA Document A201, latest revision) General Conditions of the Contract for Construction shall be considered as part of the Contract.

3. By executing the Contract, Contractor represents that he has acquired himself with the site and has made all evaluations and investigations necessary to a full understanding of any difficulties which may be encountered in performing the work within the time frame allotted.

4. Any soil investigation data furnished to Contractor by Owner shall be for the convenience of Contractor, and Owner will be not be responsible for any variance in actual conditions with such data or interpretations or conclusions drawn therefrom. Data on subsurface conditions do not constitute a representation or warranty of the continuity of such conditions.

5. Contractor shall schedule a pre–construction conference with Engineer prior to start of construction to review the Plans and scope of project. Contractor shall obtain latest set of Plans prior to start of construction. Minor changes may be made if all reviewing agency approvals are not granted before bidding. Changes in cost shall be negotiated prior to physical construction based on unit prices submitted on the Contract documents.

6. The Contractor shall contact INDIANA UNDERGROUND PLANT PROTECTION SERVICE, INC., 1–800–382–5544, and all other utility companies to locate all mains, conduits, service lines, etc. in the construction affected area. Existing utility structures are shown here in accordance with available information at the time of design. The location and protection of utility structures and facilities, their support and maintenance during construction (in cooperation with applicable utility), is the express responsibility of the Contractor in the performance of the Contract and in the preparation of the bid. The Contractor shall notify the Engineer of any changes, errors or omissions found on these Plans or in the field before work is started or resumed. Extra care should be taken where a long time period occurs between design and construction.

7. It shall be the Contractor's responsibility for notification and coordination of all construction with respective utility companies.

8. The Contractor shall coordinate and confirm with Owner that all permits and approvals are obtained from the respective private, City, County and State agencies prior to starting construction. The Contractor shall be responsible to comply with the conditions set forth within each permit.

9. It shall be the responsibility of the Contractor to maintain quality control throughout the project; failure to do so may result in removal and replacement of the defective work. It is recommended that the Contractor have a qualified supervisor on the job site at all times during construction.

10. It is essential that the work to be done in conjunction with this project be installed according to these specifications. The Engineer will be required to certify to certain portions of this project upon completion. therefore, it is necessary to obtain approval and acceptance by the appropriate governmental agencies that construction was done in compliance with these plans and specifications. Any damaged or defective work will be the Contractor's responsibility to correct or replace. All changes or discrepancies in plans to be reviewed with Engineer prior to implementing changes field.

11. Maintain carefully all benchmarks, monuments and other reference points. If disturbed or destroyed, Contractor shall contact Engineer. Boundary lines of property have been established on the plans and Contractor shall exercise care that building lines are established in accurate conformity with dimensions indicated. For construction and grading purposes, a bench mark has been established; the elevation is indicated on the Drawings. All vertical dimensions and final grades shall be established from the bench mark.

12. Contractor shall be required to maintain records of all as–built drawings and construction activity during the construction process. All as–built drawings shall be submitted to the Engineer promptly upon completion.

SECTION 01020 – QUALITY OF WORK

1. Perform all work in the most workmanlike manner and according to the best standard practices. All work shall be free from faults and defects in workmanship and materials.

2. Contractor shall be solely responsible for quality control of the work and shall maintain quality control over suppliers, manufacturers, products, services, subcontractors, site conditions and workmanship to produce work of specified quality.

3. Required testing and inspection are intended to assist in determination of probable compliance of the work with the Contract Documents but do not relieve Contractor or Subcontractor of responsibility for those compliance's. Specified testing and Inspection are not intended to limit Contractor's quality control program.

SECTION 01040 – SAFETY

1. Contractor shall take all necessary precautions for the safety of persons and the protection of the work and adjoining property. Contractor shall comply with all applicable provisions of federal, state and local safety laws and building codes.

2. Contractor shall erect and properly maintain at all times, as required by conditions and the progress of the work, all necessary safeguards for the protection of the employees of Contractor, his subcontractors, Owner and its lessee, Owner's other contractors, members of the public and for the protection of the work and adjoining property.

3. All workmanship shall comply with the Occupational Safety and Health Administration Standards, (OSHA).

SECTION 01340 – SHOP DRAWINGS AND SAMPLES

1. Submit all drawings, diagrams, illustrations, schedules, performance charts, instructions, specifications and other project data illustrating portions of the work as required by the specification section. Such submittals, whether or not referred to as shop drawings herein prescribed. Unless otherwise noted in the specification sections, submit a minimum of five (5) sets of shop drawings to Engineer. Two (2) sets will be returned to Contractor unless otherwise requested.

2, Do not commence any portion of the work requiring a shop drawing or sample submittal until the submittal has been approved as prescribed herein. All such portions of the work shall be in accordance with approved shop drawings or samples.

SECTION 02210 – STRIPPING

1. The Contractor shall remove all topsoil in the areas to be occupied by roads, parking areas, walks, buildings and designated future building fill areas. Topsoil shall be removed to a depth of six (6) inches or deeper, if necessary, to remove organic vegetative matter where required. See Soils Report for approximate topsoil thickness. If site has been recently stripped, the topsoil shall be removed to depth required to remove all roots as required by Soils Engineer, Street Inspector, Engineer and Owner.

2. Topsoil shall be kept separated from suitable fill materials and shall not be used as fill under pavement and building areas.

3. Topsoil shall be stored at a location where it does not interfere with construction operations and as shown on the Erosion Control Plan.

4. Topsoil shall be reasonable free from subsoil debris, stones, etc.

5. Topsoil shall be spread over all areas to receive seeding and landscaping. Landscaped islands and planting areas shall have a minimum of twelve (12) inches of topsoil and seeding or sodded areas shall have a minimum of six (6) inches of topsoil spread.

6. Excess topsoil to be stockpiled in the areas designated on the Erosion Control plan, or removed from the site if directed by the Owner or Engineer.

SECTION 02220 – EARTHWORK

Scope of Work

Extent: The work required under this section consists of all excavating, filling, rough grading, backfilling and related items necessary to complete the work indicated on the drawings and described in the Specifications.

1. In general, the items of work to be performed under this section shall include; fill compaction and rough and finish grading of entire site as indicated on the Plans including subgrade preparation and grading for streets, building pads, drainage swales, walks and general cut and fill.

2. Proof Rolling: shall be performed on all street areas, parking areas, floor slabs and future building areas subsequent to topsoil stripping and prior to placement of fill materials. The Engineer shall direct method of proof rolling. Contractor shall coordinate proof rolling operations with the Engineer.
Any areas containing soft, yielding or otherwise unsuitable materials shall be undercut or stabilized by approved methods directed by the Engineer.
Replace unsuitable soil materials on site in the area designated by Engineer and seed as noted. Bury pits which are approved by the Owner and Engineer in advance and which are located in nonstructural fill areas that are not restricted by other easements may be utilized to waste unsuitable soil and unused topsoil. Suitable fill material obtained from the excavation of approved bury pits can be utilized for site fills.
Contractor will be compensated for excavation, replacement and disposal of unsuitable soil materials for soil other than noted on Plans based on the Contract unit price for Common Excavation applied to the volume of the undercut excavation area removed by direction of Engineer.

3. Fill Material: shall consist of earth obtained from cut areas, borrow pits or other off–site sources. Earth shall be free from large rocks, vegetable matter and other deleterious substances. Fill obtained from off–site sources shall be approved by the Owner. The fill material shall be placed in layers not to exceed six (6) inches following compaction. contractor shall be responsible for aerating wet material and adding water to excessively dry material so that the final moisture content of fill material will be within the range from Optimum Moisture Content of –2.0 to +1.0 percent as determined by the standard Proctor maximum dry density test method (AASHTO T–99). All fill beneath paved areas, floor slabs and future buildings shall be compacted to at least 95% of the standard Proctor maximum dry density (AASHTO T–99). Unless shown otherwise in these plans.

4. Perform earthwork grading and finishing operations to establish required elevations and dimensions as designated on the Plans.

5. Place topsoil to minimum depths indicated on the planting plans in each respective area. Place topsoil in layers not to exceed six (6) inches following light compaction and develop smooth planting surfaces. Subgrade shall be scarified to 3" to 6" in depth before topsoil is spread. Remove all vegetation, stones, roots and rubbish from topsoil and rake the even surface. Carefully spread topsoil to meet walks, curbs, paving, adjacent properties and be free of low spots. Contractor shall be responsible for insuring that surface water drainage swales shown on the plans are uniformly finished graded to the designated minimum slopes and elevations.

6. Settling and Ponding: Where settling and ponding is measurable or observable at excavated areas during the general project warranty period, remove surface (pavement, lawn or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration.

7. Removal from Owner's Property. Removal waste materials, including surplus excavated material, unacceptable excavated material, trash and debris, topsoil, and legally dispose of it off project site unless otherwise directed. The location of dump and length of haul shall be the Contractor's responsibility.

SECTION 02410 – STREETS AND PARKING LOTS

1. Scope of Work

The work required under this section includes all concrete and bituminous paving and related items necessary to complete the work indicated on Plans and described in the Specifications, including but not limited to:

- All streets, parking areas in Contract limits
- Curbs and Gutters
- Sidewalks (walks in front of lots to be installed by house contractor unless otherwise noted)
- Signs, Concrete slabs and exterior steps

2. Construction within Right–of–Way: All street construction within the lines of dedicated right–of–way shall be in accordance with the requirements of the Indiana Department of Transportation Standard Specifications (INDOTSS), latest revision, OR the City of Indianapolis.

3. Grading: Perform any necessary grading to that accomplished in accordance with SECTION 02220 – EARTHWORK, to bring subgrades, after final compaction, to the required grades and cross–sections for site improvement.

4. Preparation of Subgrade: Contractor shall perform all top soil stripping operations for street areas pursuant to SECTION 02210 – STRIPPING and shall perform proof rolling and earthwork construction operations pursuant to Section 02220 – EARTHWORK and to the requirements stated in section 207 of (INDOT), per latest revision.

5. Compaction of Subgrade: All roadway areas (Including the areas beneath the curb), regardless of whether they are located in Cut or Fill, shall have the first six (6) inches below the final subgrade elevation compacted to at least 100% of the maximum dry density as determined by the provisions of AASHTO T–99. Water shall be prevented from standing on the compacted subgrade.

6. Acceptance of Subgrade: The Earthwork Contractor shall coordinate the preparation of subgrade with the engineer or his representative, the Owner, and the Paving Contractor. Subgrade shall be inspected and tested by the Engineer or his representative prior to pavement construction. The condition of the subgrade as finally and acceptably prepared shall prevail at the time any paving material is placed thereon.
Prepared subgrade damaged for any reason prior to acceptance by the Street Inspector and Paving Contractor shall be repaired by the Earthwork Contractor at no additional cost to Owner. Approved subgrade shall be paved with he initial H.M.A. base course one day after acceptance by the Engineer or his representative. Approved subgrade damaged for any reason

cost to Owner.
after acceptance by the Engineer or his representative and the Paving Contractor shall be required by the Paving Contractor at no additional Should be Paving Contractor refuse acceptance of the subgrade, he shall notify the Earthwork Contractor and the Owner of the deficiencies. Should the Paving Contractor fail to notify the Earthwork Contractor and the Owner of any deficiencies and/or proceed in the placing of the H.M.A. base course, said actions shall constitute acceptance of subgrade.

The Owner shall have the authority to adjust the construction schedules of the Earthwork Contractor and the Paving Contractor as is required to meet the above requirements.

7. Utility Structures: Earthwork Contractor shall check for correct elevation of all manhole covers, valve boxes and similar structures located within areas to be paved, and make, or have made, any necessary adjustments in structures. Paving Contractor shall verify the above prior to placing pavement materials. Adjustments to utility structures required after placement of paving materials shall be the responsibility of Paving Contractor.

8. Bituminous Pavement: All materials and construction methods proposed for the construction of bituminous pavements shall comply with Section 402 of INDOT, per latest revision. The front face of curbs shall be tack coated where H.M.A. pavement will be in contact. Unless specific approval is granted, paving will not be permitted during unfavorable weather or when the temperature is 40 degrees F. and falling.

9. Tack and Prime Coats: If the previously constructed course is granular and a prime coat is required, priming shall conform with applicable provisions of section 408 of INDOT, per latest revision.

The tack coat on H.M.A. base or binder shall conform with requirements set out in Section 409 of INDOT, per latest revision.

10. Compacted Aggregate Base Course" shall conform with material and construction method requirements set out in Section 303 of INDOT, per latest revision. the thickness shown on the Plans is the minimum thickness of the fully compacted aggregate base course. Compaction shall be accomplished by rolling with a smooth wheeled roller weighing 8 to 10 tons. Compact to 100% of maximum dry density in accordance with INDOT Section 304.05, latest revision. Along curbs, headers, and walls and at all places not accessible to the roller, the aggregate material shall be tamped with mechanical tampers or with approved hand tampers.

11. Pavements built by stage construction, that is pavements used to carry traffic before the full pavement structure is in place, will have each stage used by traffic inspected by the Street Inspector for distressed areas before the next stage is started. Distressed areas will be repaired to the satisfaction of the Street Inspector before an additional stage is constructed.

12. Concrete: Plain concrete pavements shall be constructed in accordance with section 501 of INDOT, latest revision. Concrete shall be ready–mixed concrete and shall be a mix of proportioned fine and coarse aggregates with Portland cement and water. Minimum cement content shall be 6 bags per cubic yard of concrete and maximum water content shall be 5.5 U.S. gallons per sack of concrete, including moisture in the aggregate. Slump for normal weight concrete shall be a maximum of 4 inches and a minimum of 2 inches. the slump of machine placed concrete shall be no less than 1–1/4 inches nor more than 3 inches. Standard test ASTM C–143 shall be used to measure slump. Compressive strength of concrete at 28 days shall be 4000 psi. All exterior concrete shall have air entrainment of 5% to 8% by volume per ASTM C–260. Retempering of delivered concrete will not be allowed. Concrete shall be composed of:

A. Portland Cement: Conforming to ASTM C–150 , Type IA or Type IIIA.

B. Aggregates: Conforming to ASTM C–33.

C. Water: Shall be clear and free from injurious amounts of oils, acids, alkalies, organic materials or other deleterious substances.

13. Welded Steel Wire Fabric: Where required for concrete reinforcement shall conform to ASTM A185.

14. Premolded Joint Filler: Shall be of non–extruding type meeting ASTM D–544, except that premoulded joint filler used in concrete walk construction may be either non–extruding or resilient.

15. Placing Concrete:

A. Subgrade: Place concrete only on a moist, compacted subgrade or base free from loose material. Place no concrete on a muddy or frozen subgrade. Refer to SECTION 02220 – EARTHWORK and requirements pertaining to subgrade described within this Section.

B. Forms: All forms shall be free from warp, tight enough to prevent leakage and substantial enough to maintain their shape and position without springing or settling when concrete is placed. Forms shall be clean and smooth immediately before concreting.

C. Placing Concrete: Concrete shall be deposited so as to require as little rehandling as practicable. When concrete is to be placed at an atmospheric temperature of 35 degrees F. or less, Section 702.10 of INDOT, latest edition shall be followed.

D. Curing Concrete: Except as otherwise specified, cure all concrete by one of the methods described in Section 501.17 of INDOTSS, latest edition.

16. Concrete Curb and Gutter: shall conform to requirements set forth in Section 605 of INDOT, latest edition.

A. Expansion Joints: Shall be 1/2 in thick premoulded at ends of all returns and at a maximum spacing of 100 feet.

B. Contraction Joints: Unless otherwise provided, contraction joints shall be sawed joints spaced 20 feet on center.

C. Finish: Tamp and screed concrete as soon as placed, and fill any honey combed voids. Finish square corners to 1/4 inch radius and other corners to radii shown.

D. Curing: Concrete curbs shall be cured with white membrane compound according to Section 501.17(e) of INDOTSS, latest edition.

17. Concrete Walks and Exterior Steps: shall conform to section 604 of INDOT, latest revision.

A. Slopes: Provide 1/4 inch per foot minimum cross slope. Make adjustments in slopes at walk intersections as necessary to provide proper drainage.

B. Dimensions: Walks and steps shall be one course construction and of widths and details shown on the plans.

C. Finish: Screed concrete and trowel with a steel trowel to a hard dense surface after surface water has disappeared. Apply medium broom finish and scribe control joints at 5 foot spacing. Provide 1/2 inch expansion joints where sidewalks intersect, and at a maximum spacing of 48 feet between expansions joints.

D. Wheel chair ramps shall be provided as detailed.

18. Street and Other Signs: Street name and other signs shall be furnished at the Developer's expense and installed prior to the release of the performance bond. The signs shall be installed on one post at each street intersection at an appropriate spot in the northeast corner wherever possible.

SECTION 02620 – UTILITIES (Gas, Electric, Telephone and T.V.)

1. Utilities: It shall be the responsibility of each Contractor to verify all existing utilities and conditions pertaining to his phase of work. It shall also be the Contractor's responsibility to contact the owners of the various utilities before work is started. The Contractor shall notify in writing the owners or the Engineer of any changes, errors or omissions found on these plans or in the field before work is started or resumed.

2. If active utilities are encountered but not shown on the drawings, the Engineer and utility representative shall be advised before work is continued.

3. Inactive and abandoned utilities encountered in excavating and grading operations shall be reported to the Engineer and utility company. They shall be removed, plugged or capped as directed by the utility company and Engineer.

4. Rules and regulations governing the respective utilities shall be observed in executing all work under this section.

5. Granular backfill shall be required for all crossings under pavement areas except for utilities which are bored or pushed under street.

6. Conduit shall be required for all crossings under pavement areas. Contractor shall coordinate with each respective utility for their location and installation. Conduit shall be 4" PVC Schedule 40 or approved equal.

7. Existing storm sewers, sanitary sewers, water mains, gas mains, electric ducts, telephone ducts, steam mains and other underground structures have been shown on the plans according to the best available information. The exact location and protection of these facilities and structures, their support and maintenance in operation during construction (in cooperation with the proper authorities of the utility involved), is the express responsibility of the Contractor in the performance of his Contract and in the preparation of his bid.

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PROFESSIONAL ENGINEER

CERTIFIER'S SIGNATURE
DATED:

FILE NO.	113039
DATED	05-16-2013
DRAWN BY	J.E.K.
CHECKED	
REVISED	
REVISED	
REVISED	

PROJECT NAME: SPECIFICATIONS

SHEET OR CLIENT NAME: HEARTLAND MACHINE & ENGINEERING

SHEET NUMBER C108