

# DEVELOPMENT PLANS

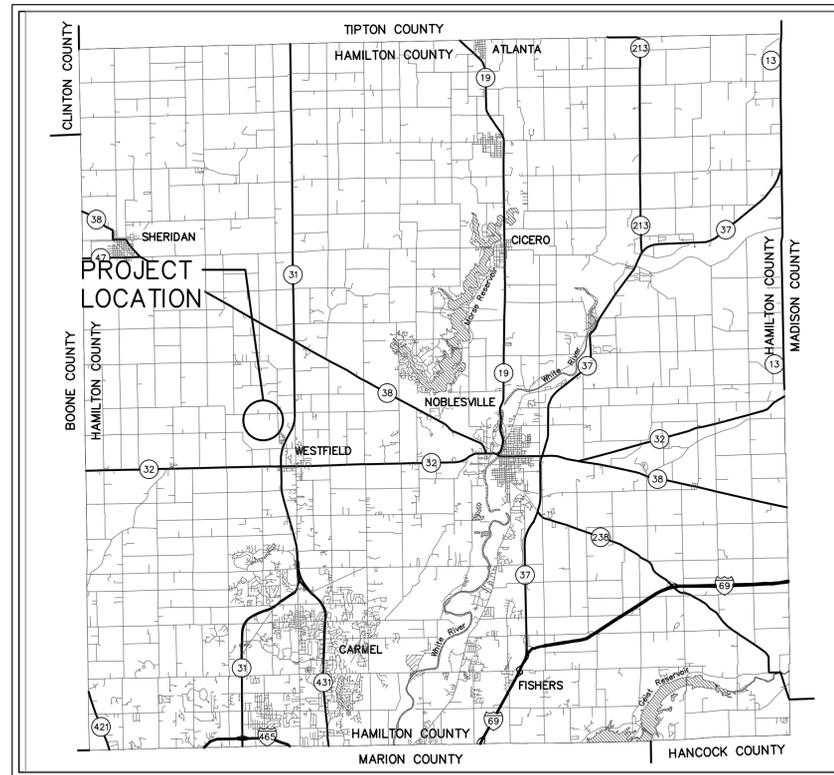
## FOR

# GRAND PARK

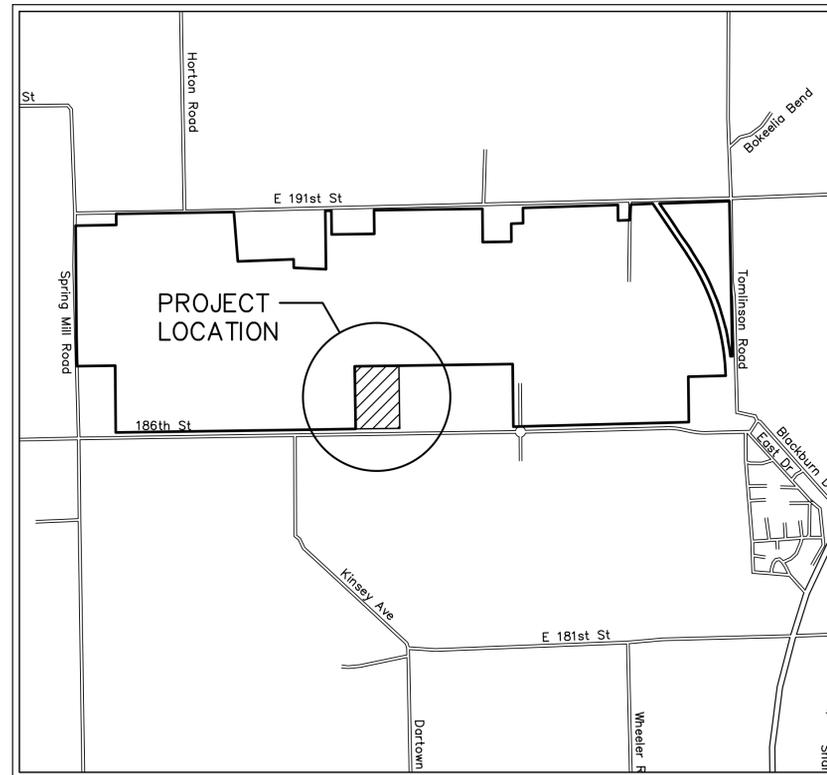
## INDOOR SPORTS FACILITY

### WESTFIELD, INDIANA 46074

S.E. 1/4 SECTION 26, T19N, R3E, WASHINGTON TOWNSHIP, HAMILTON COUNTY



LOCATION MAP  
NOT TO SCALE



VICINITY MAP  
NOT TO SCALE

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PLAN DATE: 01/30/2015

#### UTILITY CONTACTS

**CITY OF WESTFIELD - PUBLIC WORKS**  
KEN ALEXANDER  
2706 EAST 171st STREET  
WESTFIELD, INDIANA 46074  
(317) 804-3100

**CITY OF WESTFIELD - ENGINEERING**  
PHIL SUNDLING  
2706 EAST 171st STREET  
WESTFIELD, INDIANA 46074  
(317) 804-3136

**CITY OF WESTFIELD - FIRE DEPARTMENT**  
GARRY HARLING  
17535 DARTOWN ROAD  
WESTFIELD, INDIANA 46074  
(317) 804-3307

**CITY OF WESTFIELD - PARKS DEPARTMENT**  
MELODY JONES  
2728 EAST 171st STREET  
WESTFIELD, INDIANA 46074  
(317) 804-3184

**GAS PIPELINES:**  
INDIANA GAS / VECTREN  
DON PERDUE  
P.O. BOX 1700  
NOBLESVILLE, INDIANA 46061  
(317) 776-5550

**BUCKEYE PARTNERS, L.P.**  
MARTY WHITE  
940 BUCKEYE ROAD  
LIMA, OHIO 45804  
(419) 993-8008

**HAMILTON COUNTY SURVEYOR'S OFFICE**  
GREG HOYES  
ONE HAMILTON COUNTY SQUARE, SUITE 188  
NOBLESVILLE, INDIANA 46060  
(317) 776-8495

**HAMILTON COUNTY HIGHWAY DEPARTMENT**  
DAVE LUCAS  
1700 S. 10th STREET  
NOBLESVILLE, INDIANA 46060  
(317) 773-7770

**ELECTRIC:**  
DUKE ENERGY - NOBLESVILLE OFFICE  
JASON KEENAN  
100 SOUTH MILL CREEK ROAD  
NOBLESVILLE, INDIANA 46060  
(317) 776-5335

**COMMUNICATIONS:**  
COMCAST CABLE  
MATT STRINGER  
9750 EAST 150th STREET, SUITE 1600  
NOBLESVILLE, INDIANA 46060  
(317) 774-3384

**AT&T**  
MICHAEL HAYNES  
5858 N. COLLEGE  
INDIANAPOLIS, INDIANA 46220  
(317) 252-4007

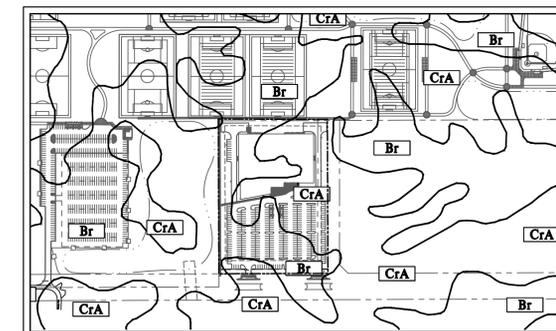
**GAS:**  
INDIANA GAS / VECTREN  
RESA GLOVER & CHARLOTTE MAY  
P.O. BOX 1700  
NOBLESVILLE, INDIANA 46061  
(317) 776-5550

**CITIZENS GAS OF WESTFIELD**  
RICHARD MILLER, JR.  
2150 DR. MARTIN LUTHER KING DRIVE  
INDIANAPOLIS, INDIANA 46202  
(317) 927-4684

**SANITARY SEWER AND WATER**  
CITIZENS WESTFIELD  
HARRY NIKIDES  
2728 EAST 171ST STREET  
WESTFIELD, IN 46074  
(317) 927-4338

PLANS PREPARED FOR:  
**GRAND PARK, LLC**

PLANS PREPARED BY:



SOILS MAP  
NOT TO SCALE

REV	DATE	DESCRIPTION

**CAUTION !!**  
THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED UPON ABOVE GROUND EVIDENCE ( including, but not limited to, manholes, inlets, valves, and marks made upon the ground by others ) AND ARE SPECULATIVE IN NATURE. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH NO ABOVE GROUND EVIDENCE WAS OBSERVED. THE EXACT LOCATIONS OF SAID EXISTING UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.  
811 OR 1-800-382-5544  
CALL TOLL FREE  
- INDIANA UNDERGROUND -

**APPROVAL PENDING**  
**NOT FOR CONSTRUCTION**

ANDREW R. TAYLOR, P.E.

**C001**

JOB# 2014.01793

DESIGN AND CONSTRUCTION OF THIS PROJECT SHALL COMPLY WITH THE HAMILTON COUNTY SURVEYOR'S OFFICE AND THE CITY OF WESTFIELD CONSTRUCTION SPECIFICATIONS AND STANDARD DETAILS.

PRINT DATE: 1/29/15 PLOT SCALE: 1:2,584.9 EDITED BY: RWH/DHORST DRAWING FILE: P:\2014\01793\0\_DRAWINGS\CIVIL\CONSTRUCTION\_DOCUMENTS\02014\_01793.CE.C002.GNDWG

**GENERAL NOTES**

1. ALL WORK TO CONFORM TO STATE AND LOCAL REGULATIONS.
2. CONTRACTOR SHALL KEEP ADJOINING PROPERTIES CLEAN OF CONSTRUCTION DEBRIS AND CONSTRUCTION TRAFFIC AT ALL TIMES.
3. THE CONTRACTOR SHALL PROTECT AND NOT DESTROY THE BASE SURVEY CONTROL POINTS DURING DEMOLITION AND CONSTRUCTION.
4. ALL UTILITY INFORMATION SHALL BE VERIFIED BY THE CONTRACTOR. CONTACT ENGINEER IMMEDIATELY IF ANY VARIATION EXISTS.
5. MAINTAIN EXISTING UTILITIES TO REMAIN IN SERVICE AND PROTECT AGAINST DAMAGE DURING DEMOLITION AND CONSTRUCTION OPERATIONS.
6. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD DIMENSIONS. IF ANY DISCREPANCIES ARE FOUND IN THESE PLANS FROM ACTUAL FIELD CONDITIONS, THE CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY.

**SITE NOTES**

1. ALL PARKING STRIPES ARE TO BE 4" PAINTED (WHITE). ADA ACCESSIBLE PARKING STRIPES SHALL BE 4" PAINTED (BLUE).
2. ALL DIMENSIONS ARE TO THE EDGE OF PAVEMENT OR FACE OF CURB, UNLESS NOTED OTHERWISE.
3. ALL DIMENSIONS ARE TO FACE OF BRICK OR FACING MATERIAL, WHERE APPLICABLE.
4. ALL DIMENSIONS ARE PARALLEL WITH, OR PERPENDICULAR TO BASE LINES, PROPERTY LINES OR BUILDING LINES, UNLESS OTHERWISE NOTED.
5. PROVIDE SMOOTH TRANSITIONS FROM NEW AREAS TO EXISTING FEATURES AS NECESSARY.
6. RESURFACE OR RECONSTRUCT AT LEAST TO ORIGINAL CONDITIONS ALL AREAS WHERE THE EXISTING PAVEMENT OR LAWNS ARE DAMAGED DURING CONSTRUCTION FROM TRAFFIC BY CONTRACTORS, SUBCONTRACTORS OR SUPPLIERS AFTER CONSTRUCTION WORK IS COMPLETE.
7. EXISTING PAVEMENT TO BE SAW CUT IN ALL AREAS WHERE INDICATED NEW PAVEMENT TO JOIN EXISTING.
8. THE EDGE OF THE EXISTING ASPHALT PAVEMENT SHALL BE PROPERLY SEALED WITH A TACK COAT MATERIAL IN ALL AREAS WHERE NEW ASPHALT PAVEMENT IS INDICATED TO JOIN EXISTING ASPHALT.
9. CONCRETE SAW CUTTING SHALL BE DONE AS SOON AS POURED CONCRETE HAS CURED AND CAN SUPPORT WEIGHT. PROVIDE A NEAT CUT WHICH IS TRUE IN ALIGNMENT.
10. ALL JOINTS ARE TO CONTINUE THROUGH THE CURB.
11. RADIAL JOINTS SHALL BE NO SHORTER THAN 1.5'.
12. CONTRACTOR SHALL USE A THICKENED EXPANSION JOINT AROUND THE PERIMETER OF ANY BLOCK OUT IN THE CONCRETE PAVING.
13. ALL CONSTRUCTION JOINTS SHALL BE SAWN, CLEANED OF DEBRIS, BLOWN DRY AND IMMEDIATELY SEALED WITH THE APPROPRIATE SEALANT ACCORDING TO MANUFACTURES DIRECTIONS.
14. ALL MATERIALS TO BE IN ACCORDANCE WITH LOCAL DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS RELATIVE TO MATERIAL, MIX, PLACEMENT AND WORKMANSHIP.
15. ALL SIDEWALKS SHALL COMPLY WITH ADA STANDARDS. MAXIMUM CROSS SLOPE OF 1:20 AND MAXIMUM LONGITUDINAL SLOPE OF 1:20.
16. CHAMFER ALL ENDS OF CURBS.

**DEMOLITION NOTES**

1. CLEAR AND GRUB ALL TREES AND VEGETATION NECESSARY FOR CONSTRUCTION.
2. PROTECT TREES TO REMAIN DURING CONSTRUCTION.
3. PLANT MATERIALS TO REMAIN, TO BE PROTECTED BY TREE FENCE WHICH ENCOMPASSES IT'S DRIP LINE. NO CONSTRUCTION EQUIPMENT, MATERIALS OR DEBRIS SHALL BE LOCATED WITHIN TREE PROTECTION BOUNDARIES. NO DEMOLITION CAN OCCUR UNTIL TREE PROTECTION IS APPROVED BY THE OWNER.
4. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, FENCES, CONCRETE, ASPHALT PAVEMENT AND OTHER MISCELLANEOUS APPURTENANCES OFF SITE, UNLESS NOTED TO REMAIN ON THE CONTRACT DRAWINGS.
5. THE USE OF ANY TYPE OF EXPLOSIVES WILL NOT BE PERMITTED.
6. CONDUCT DEMOLITION AND CONSTRUCTION OPERATIONS TO ENSURE MINIMAL INTERFERENCE WITH STREETS, WALKS AND OTHER ADJACENT OCCUPIED FACILITIES.
7. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS OR OTHER OCCUPIED FACILITIES WITHOUT PERMISSION FROM THE LOCAL AUTHORITIES HAVING JURISDICTION. PROVIDE ALTERNATE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS, IF REQUIRED BY GOVERNING AUTHORITIES.
8. ENSURE SAFE PASSAGE OF PERSONS AROUND AREAS OF DEMOLITION AND CONSTRUCTION. CONDUCT OPERATIONS TO PREVENT DAMAGE TO ADJACENT STRUCTURES AND OTHER FACILITIES AND INJURY TO PERSONS.
9. PROMPTLY REPAIR DAMAGE TO ADJACENT FACILITIES CAUSED BY DEMOLITION AND CONSTRUCTION OPERATIONS.
10. ALL UTILITIES TO BE REMOVED SHALL BE DISCONNECTED AND CAPPED AT THE NEAREST CONNECTION POINT.
11. NO ON-SITE BURNING IS PERMITTED.
12. CONTRACTOR SHALL USE MEASURES TO CONTROL DUST AT ALL TIMES.
13. DEMOLITION ITEMS INCLUDE BUT ARE NOT LIMITED TO DEMOLITION ITEMS INDICATED ON THIS PLAN. IT IS THE CONTRACTORS RESPONSIBILITY TO REMOVE OR RELOCATE ITEMS WHICH INTERFERE WITH NEW CONSTRUCTION.
14. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCING DEMOLITION.

**GRADING NOTES**

1. SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
2. THE EXCAVATING CONTRACTOR MUST TAKE PARTICULAR CARE WHEN EXCAVATING IN AND AROUND EXISTING UTILITY LINES AND EQUIPMENT. VERIFY COVER REQUIREMENTS BY UTILITY CONTRACTORS AND/OR UTILITY COMPANIES SO AS NOT TO CAUSE DAMAGE.
3. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES 72 HOURS BEFORE CONSTRUCTION IS TO START TO VERIFY IF ANY UTILITIES ARE PRESENT ON SITE. ALL VERIFICATIONS (LOCATION, SIZE AND DEPTH), SHALL BE MADE BY THE APPROPRIATE UTILITY COMPANIES. WHEN EXCAVATING AROUND OR OVER EXISTING UTILITIES, THE CONTRACTOR MUST NOTIFY THE UTILITY COMPANY SO A REPRESENTATIVE OF THAT UTILITY COMPANY CAN BE PRESENT TO INSTRUCT AND OBSERVE DURING CONSTRUCTION. SUBCONTRACTORS ARE RESPONSIBLE FOR LOCATIONS OF UTILITIES FOR THEIR OWN WORK.
4. CONTRACTOR TO ADJUST ALL EXISTING SURFACE INFRASTRUCTURE (HYDRANTS, VALVES, HANDHOLES, CASTINGS, IRRIGATION SYSTEM, UTILITY PEDESTALS, ETC.) AS REQUIRED TO MEET PROPOSED GRADE AT HIS/HER OWN COST.
5. AFTER STRIPPING TOPSOIL MATERIAL, PROOFROLL SHALL BE PERFORMED BY A LOADED TANDEM PNEUMATIC TIRE DUMP TRUCK MINIMUM GROSS VEHICLE WEIGHT OF 22 TONS. THE TIRES SHALL BE OPERATED AT INFLATION PRESSURES BETWEEN 70-80 PSI UNLESS OTHERWISE NOTED BY THE GEOTECHNICAL ENGINEER. THE TIRES SHALL BE INFLATED WITH AIR ONLY, NO LIQUID SHALL BE USED. THE PROOFROLL SHALL BE COMPLETED UNDER INSPECTION OF SOILS FIRM TO DETERMINE LOCATIONS OF ANY POCKETS OF UNSUITABLE MATERIAL. THE NECESSITY FOR SUBDRAINS AND/OR REMOVAL OF ANY UNSUITABLE MATERIAL WILL BE DETERMINED AT THE TIME OF CONSTRUCTION.
6. PROVIDE POSITIVE DRAINAGE WITHOUT PONDING IN ALL AREAS. AFTER INSTALLATION, CONTRACTOR TO TEST FOR, AND CORRECT, IF ANY, STANDING WATER CONDITIONS.
7. ALL PROPOSED SPOT ELEVATIONS OR CONTOURS ARE THE FINAL PAVEMENT AND FINAL GRADE ELEVATIONS.
8. SEE APPROPRIATE DETAILS TO DETERMINE SUBGRADE ELEVATIONS BELOW FINISH GRADE ELEVATIONS INDICATED.
9. TRENCHES FOR ALL STORM DRAIN LINES SHALL BE BACKFILLED COMPLETELY WITH SELECT GRANULAR MATERIAL IF WITHIN 5 FEET OF PAVEMENT.
10. CONTRACTOR TO PERPETUATE ANY SUBSURFACE DRAIN TILES OR PIPES ENCOUNTERED DURING CONSTRUCTION AND PROVIDE POSITIVE OUTLET TO DOWNSTREAM RECEIVING SYSTEM. CONTRACTOR TO NOTIFY THE ENGINEER WITH ANY CIRCUMSTANCES WHERE THIS CANNOT BE ACCOMPLISHED.
11. DUE TO SITE CONSTRAINTS, THE EARTHWORK FOR THE SITE AS DESIGNED MAY OR MAY NOT BALANCE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW THE EXISTING CONDITIONS AND INCLUDE IN THEIR BID ALL EARTHWORK COSTS INCLUDING IMPORTS AND/OR EXPORTS NECESSARY TO MAKE THE SITE BALANCE.
12. CONTRACTOR TO STABILIZE EXPOSED EARTH AS INDICATED BY THE STORMWATER POLLUTION PREVENTION PLAN OR GOVERNING AUTHORITY.

**UTILITY NOTES**

1. SITE UTILITIES SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
2. THE EXCAVATING CONTRACTOR MUST TAKE PARTICULAR CARE WHEN EXCAVATING IN AND AROUND EXISTING UTILITY LINES AND EQUIPMENT. VERIFY COVER REQUIREMENTS BY UTILITY CONTRACTORS AND/OR UTILITY COMPANIES SO AS NOT TO CAUSE DAMAGE.
3. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES 72 HOURS BEFORE CONSTRUCTION IS TO START TO VERIFY IF ANY UTILITIES ARE PRESENT ON SITE. ALL VERIFICATIONS (LOCATION, SIZE AND DEPTH), SHALL BE MADE BY THE APPROPRIATE UTILITY COMPANIES. WHEN EXCAVATING AROUND OR OVER EXISTING UTILITIES, THE CONTRACTOR MUST NOTIFY THE UTILITY COMPANY SO A REPRESENTATIVE OF THAT UTILITY COMPANY CAN BE PRESENT TO INSTRUCT AND OBSERVE DURING CONSTRUCTION. SUBCONTRACTORS ARE RESPONSIBLE FOR LOCATIONS OF UTILITIES FOR THEIR OWN WORK.
4. CONTRACTOR TO ADJUST ALL EXISTING SURFACE INFRASTRUCTURE (HYDRANTS, VALVES, HANDHOLES, CASTINGS, IRRIGATION SYSTEM, UTILITY PEDESTALS, ETC.) AS REQUIRED TO MEET PROPOSED GRADE.
5. ALL UTILITY MATERIALS AND INSTALLATION SHALL CONFORM TO LOCAL STANDARDS FOR EACH UTILITY AGENCY HAVING JURISDICTION.
6. TRENCHES FOR ALL UTILITY LINES SHALL BE BACKFILLED COMPLETELY WITH SELECT GRANULAR MATERIAL IF WITHIN 5 FEET OF PAVEMENT.
7. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES AND CONDUITS TO AVOID CONFLICTS AND PROVIDE REQUIRED MINIMUM DEPTHS OF COVER. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL BENDS WITH THRUST BLOCKS REQUIRED TO ASSURE PROPER INSTALLATION OF WATER MAINS AND LATERALS.
8. IN THE EVENT OF A CONFLICT BETWEEN WATER LINES AND STORM DRAINS, THE CONTRACTOR SHALL EITHER ADJUST THE WATER LINE DOWNWARD IN SUCH A MANNER SO THAT THE PIPE MANUFACTURER'S RECOMMENDATIONS ON PIPE DEFLECTION AND JOINT STRESS ARE NOT EXCEEDED OR THE CONTRACTOR SHALL PROVIDE APPROPRIATE BENDS AND CROSSINGS.
9. ALL COORDINATES AND DIMENSIONS ARE TO THE CENTERLINE OF UTILITIES AND STRUCTURES.
10. ALL STORM SEWER AND ROOF DRAIN PIPES THAT OUTLET TO GROUND SURFACE SHALL BE CONSTRUCTED WITH A CONCRETE END SECTION AND GABION BASKET ARMOR.

**EROSION CONTROL NOTES**

1. CONTRACTOR SHALL INSTALL ALL PERIMETER SILT FENCE AND SEDIMENT CONTROL BARRIERS PRIOR TO CLEARING AND GRADING.
2. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT FROM LEAVING THE SITE.
3. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION OR CITY OF WESTFIELD INSPECTOR.
4. LAND ALTERATION WHICH STRIPS THE LAND OF VEGETATION, INCLUDING RE-GRADING, SHALL BE DONE IN A WAY THAT WILL MINIMIZE EROSION.
5. SEDIMENT LADEN WATER SHALL BE DETAINED BY EROSION CONTROL PRACTICES AS NEEDED TO MINIMIZE SEDIMENTATION IN RECEIVING WATER. NO STORM WATER SHALL BE DISCHARGED FROM THE SITE IN A MANNER THAT CAUSES EROSION AT THE POINT OF DISCHARGE.
6. WASTE AND UNUSED BUILDING MATERIALS SHALL NOT BE ALLOWED TO BE CARRIED FROM THE SITE BY STORM WATER RUNOFF. PROPER DISPOSAL OF ALL WASTE AND UNUSED BUILDING MATERIALS IS REQUIRED.
7. SEDIMENT BEING TRACKED ONTO PUBLIC OR PRIVATE ROADWAYS SHALL BE MINIMIZED. CLEARING OF ACCUMULATED SEDIMENT SHALL NOT INCLUDE FLUSHING WITH WATER. CLEARED SEDIMENT SHALL BE RETURNED TO THE SITE FOR DISPOSAL.
8. SOIL WHICH HAS ACCUMULATED NEXT TO EROSION CONTROL DEVICES SHALL BE COLLECTED AND RE-DISTRIBUTED ON SITE AFTER EACH RAINFALL EVENT, AND AT LEAST ONCE A WEEK.
9. IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OR NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
10. THE SITE IS NOT LOCATED WITHIN ANY FLOODPLAIN, FLOODWAY OR FLOODWAY FRINGE AS INDICATED ON THE FLOOD INSURANCE RATE MAP (FIRM) FOR HAMILTON COUNTY, IN, MAP NUMBER 18057C0120G, DATED NOVEMBER 19, 2014.
11. SCHEDULE OF EARTHWORK ACTIVITIES:
  - a. THE DURATION OF TIME WHICH AN AREA REMAINS EXPOSED SHALL BE KEPT TO A PRACTICAL MINIMUM. THE AREA SHALL BE STABILIZED AS SOON AS POSSIBLE. UN-VEGETATED AREAS THAT ARE SCHEDULED OR LIKELY TO BE LEFT INACTIVE FOR FIFTEEN (15) DAYS OR MORE MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITH MEASURES APPROPRIATE FOR THE SEASON TO MINIMIZE EROSION POTENTIAL. ALTERNATIVE MEASURES TO SITE STABILIZATION ARE ACCEPTABLE IF THE PROJECT SITE OWNER OR THEIR REPRESENTATIVE CAN DEMONSTRATE THEY HAVE IMPLEMENTED EROSION AND SEDIMENT CONTROL MEASURES ADEQUATE TO PREVENT SEDIMENT DISCHARGE.
  - b. TOPSOIL REPLACEMENT SHALL TAKE PLACE FROM MARCH 1 TO OCTOBER 31. STOCKPILE TOPSOIL AT ALL OTHER TIMES OF THE YEAR. PERMANENT AND FINAL VEGETATION AND STRUCTURAL EROSION CONTROL DEVICES SHALL BE INSTALLED WITHIN SEVEN (7) DAYS AFTER FINAL GRADING OR AS SOON AS POSSIBLE.
  - c. INSTALL INLET PROTECTION AROUND INLETS IMMEDIATELY UPON COMPLETION OF THE STRUCTURE. REMOVE INLET PROTECTION FOR PAVING OPERATION. REPLACE INLET PROTECTION AFTER PAVING IS COMPLETE. INLET PROTECTION SHALL REMAIN IN PLACE UNTIL VEGETATION IS ESTABLISHED ON SEEDED AREAS BEHIND THE CURB.
15. PRIOR TO COMPLETION OF THE PROJECT, CONTRACTOR SHALL CLEAN OUT ALL STORM DRAINAGE STRUCTURES AND RESTORE ALL DITCHES AND PONDS TO DESIGNED GRADES.
16. CONTRACTOR SHALL REMOVE ALL SEDIMENT CONTROL BARRIERS ONCE CONSTRUCTION IS COMPLETE AND THE SITE HAS BEEN STABILIZED.

**NOTE:**  
 1. ALL WORK TO CONFORM TO CITY OF WESTFIELD STANDARD SPECIFICATIONS AND DETAILS UNLESS OTHERWISE NOTED.  
 2. ALL WATER AND SANITARY WORK TO CONFORM TO CITIZENS WESTFIELD STANDARDS.

**NOTES:**  
 1. CONTRACTOR SHALL PROTECT AND NOT DESTROY THE PROPERTY CORNER MONUMENTS DURING CONSTRUCTION.  
 2. CONTRACTOR TO VERIFY LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES PRIOR TO COMMENCING ANY CONSTRUCTION. CONTACT ENGINEER IF VARIATION EXISTS.

**CAUTION !!**  
 THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED UPON ABOVE GROUND EVIDENCE ( including, but not limited to, manholes, inlets, valves, and marks made upon the ground by others ) AND ARE SPECULATIVE IN NATURE. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH NO ABOVE GROUND EVIDENCE WAS OBSERVED. THE EXACT LOCATIONS OF SAID EXISTING UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.  
 \*811\* OR 1-800-382-5544  
 CALL TOLL FREE  
 - INDIANA UNDERGROUND -

**GRAND PARK  
FIELDHOUSE, LLC**



7260 Shadeland Station | Indianapolis, Indiana 46256  
 TEL 317.547.5580 | FAX 317.543.0270  
 www.structurepoint.com

**GRAND PARK  
FIELDHOUSE**

**186TH ST & KINSEY AVE  
WESTFIELD, IN**

**APPROVAL PENDING  
NOT FOR CONSTRUCTION**

CERTIFIED BY

**ISSUANCE INDEX**

DATE:	01/30/2015
PROJECT PHASE:	DEVELOPMENT PLANS

**REVISION SCHEDULE**

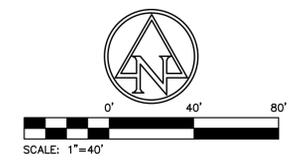
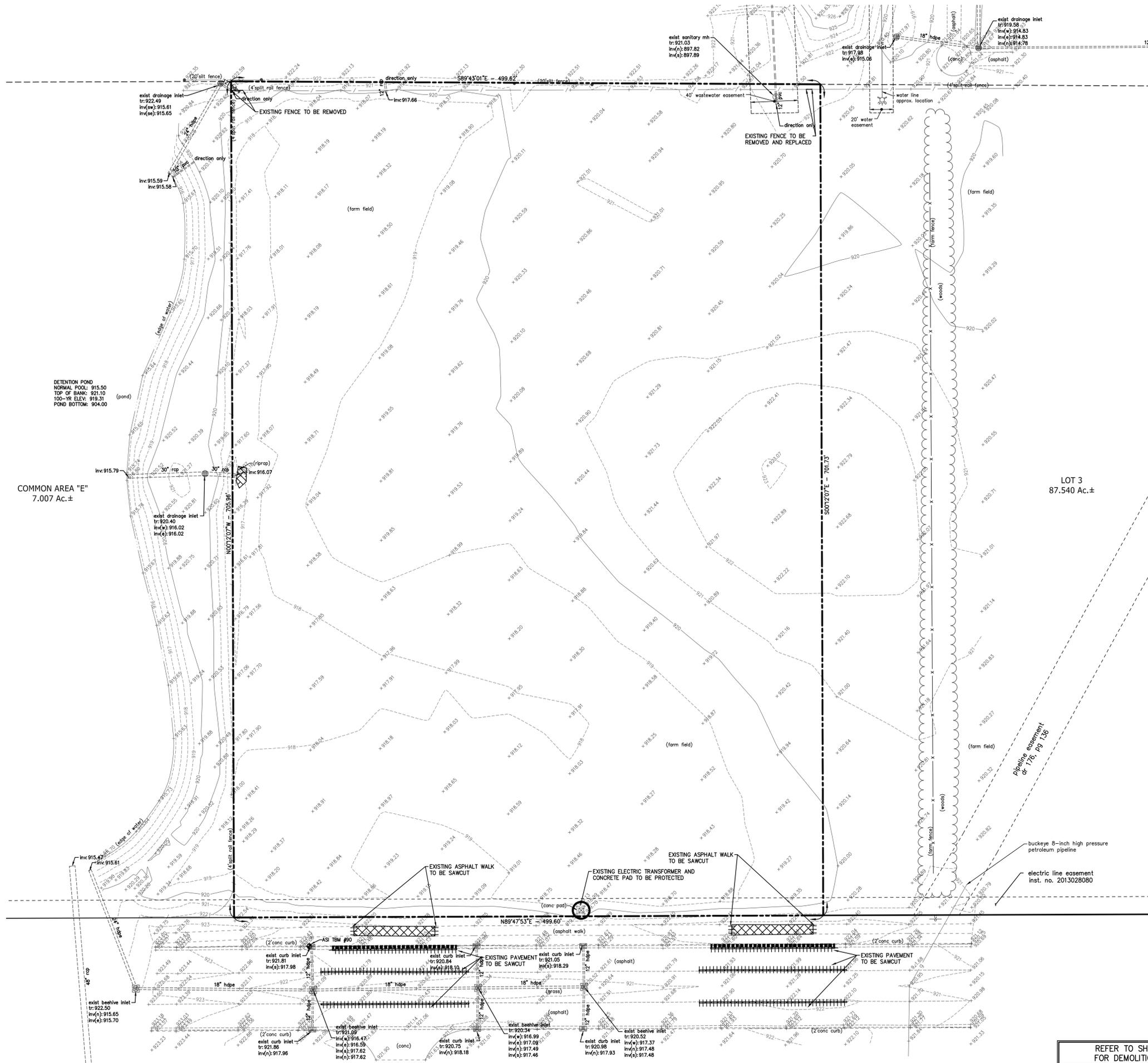
NO.	DESCRIPTION	DATE

Project Number 2014.01793

**GENERAL  
NOTES**

**C002**

PRINT DATE: 1/20/15 PLOT SCALE: 1:2,500 EDIT DATE: 1/30/2015 2:38:44 PM EDITED BY: ATRACEY DRAWING FILE: P:\2014\01793\0 DRAWINGS\CIVIL\CONSTRUCTION DOCUMENTS\02014.01793.CE.C100.XTDMF.DWG



**EXISTING LEGEND**

- BEEHIVE INLET
- CURB INLET
- FIRE HYDRANT
- GAS MARKER SIGN
- INLET
- POST
- SANITARY MANHOLE
- TEMPORARY BENCH MARK
- TRANSFORMER
- BURIED GAS LINE
- TOP OF RIM ELEVATION
- INVERT ELEVATION
- PLASTIC PIPE (PVC)
- REINFORCED CONCRETE PIPE (RCP)
- PLASTIC PIPE (HDPE)

**DEMOLITION LEGEND**

- ASPHALT PATH TO BE REMOVED
- ASPHALT PAVEMENT TO BE REMOVED
- EXISTING RAP-RAP TO BE REMOVED
- CONCRETE CURB TO BE REMOVED
- UTILITIES TO BE REMOVED
- PAVEMENT TO BE SAWCUT
- FENCE TO BE REMOVED
- OBJECT TO BE PROTECTED

**BENCH INFORMATION (NAVD 88)**

- TBM #51  
RR SPIKE 2'UP IN WEST SIDE 24" TREE  
ALONG NORTH/SOUTH FENCE ROW NORTH  
OF SECTION LINE.  
ELEV = 916.63
- TBM #52  
RR SPIKE 2'UP IN SOUTH SIDE 12" TREE IN  
NORTH/SOUTH FENCE LINE ON NORTH SIDE  
OF SECTION LINE.  
ELEV = 924.88
- TBM #53  
RR SPIKE IN NORTH FACE UTILITY POLE  
#253-524; ±375' WEST OF KINSEY AVE.  
AND ±50' SOUTH OF 186TH STREET.  
ELEV = 926.43
- TBM #90  
CUT SQUARE AT NW CORNER OF INLET;  
±37' NORTH OF E 186TH STREET AND  
±65' EAST OF N/S SPLIT RAIL FENCE  
(BLACK).  
ELEV = 922.34

**GAS LINE NOTES:**

1. CONTRACTOR SHALL NOTIFY VECTREN PIPELINE AND BUCKEYE PARTNERS L.P. PRIOR TO COMMENCING ANY WORK WITHIN 100' OF PIPELINE EASEMENTS.
2. CONTRACTOR SHALL CONTACT VECTREN PIPELINE AND BUCKEYE PARTNERS L.P. TO VERIFY THE DEPTH OF THE EXISTING PIPELINES AND NOTIFY ENGINEER ABOUT FINDINGS PRIOR TO COMMENCING ANY CONSTRUCTION
3. ALL PIPELINE UTILITY CROSSINGS AND TEMPORARY TRAFFIC CROSSINGS DURING CONSTRUCTION SHALL BE COORDINATED WITH VECTREN PIPELINE AND BUCKEYE PARTNERS L.P. AND CONSTRUCTION IN ACCORDANCE WITH THEIR GUIDELINES FOR CROSSING GAS PIPELINES.

**NOTES:**

1. CONTRACTOR SHALL PROTECT AND NOT DESTROY THE PROPERTY CORNER MONUMENTS DURING CONSTRUCTION.
2. CONTRACTOR TO VERIFY LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES PRIOR TO COMMENCING ANY CONSTRUCTION. CONTACT ENGINEER IF VARIATION EXISTS.

**CAUTION !!**

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\*811\* OR 1-800-382-5544  
CALL TOLL FREE  
- INDIANA UNDERGROUND -

REFER TO SHEET C002 FOR DEMOLITION NOTES

GRAND PARK FIELDHOUSE, LLC



GRAND PARK FIELDHOUSE

186TH ST & KINSEY AVE WESTFIELD, IN

APPROVAL PENDING NOT FOR CONSTRUCTION

CERTIFIED BY

**ISSUANCE INDEX**

DATE:	01/30/2015
PROJECT PHASE:	DEVELOPMENT PLANS

**REVISION SCHEDULE**

NO.	DESCRIPTION	DATE

Project Number 2014.01793

**EXISTING TOPOGRAPHY/DEMOLITION PLAN**

**C100**





7260 Shadeland Station | Indianapolis, Indiana 46256  
TEL 317.547.5580 | FAX 317.543.0270  
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GRAND PARK  
FIELDHOUSE

186TH ST & KINSEY AVE  
WESTFIELD, IN

APPROVAL PENDING  
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CERTIFIED BY

ISSUANCE INDEX

DATE:	01/30/2015
PROJECT PHASE:	DEVELOPMENT PLANS

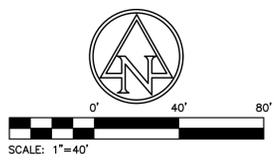
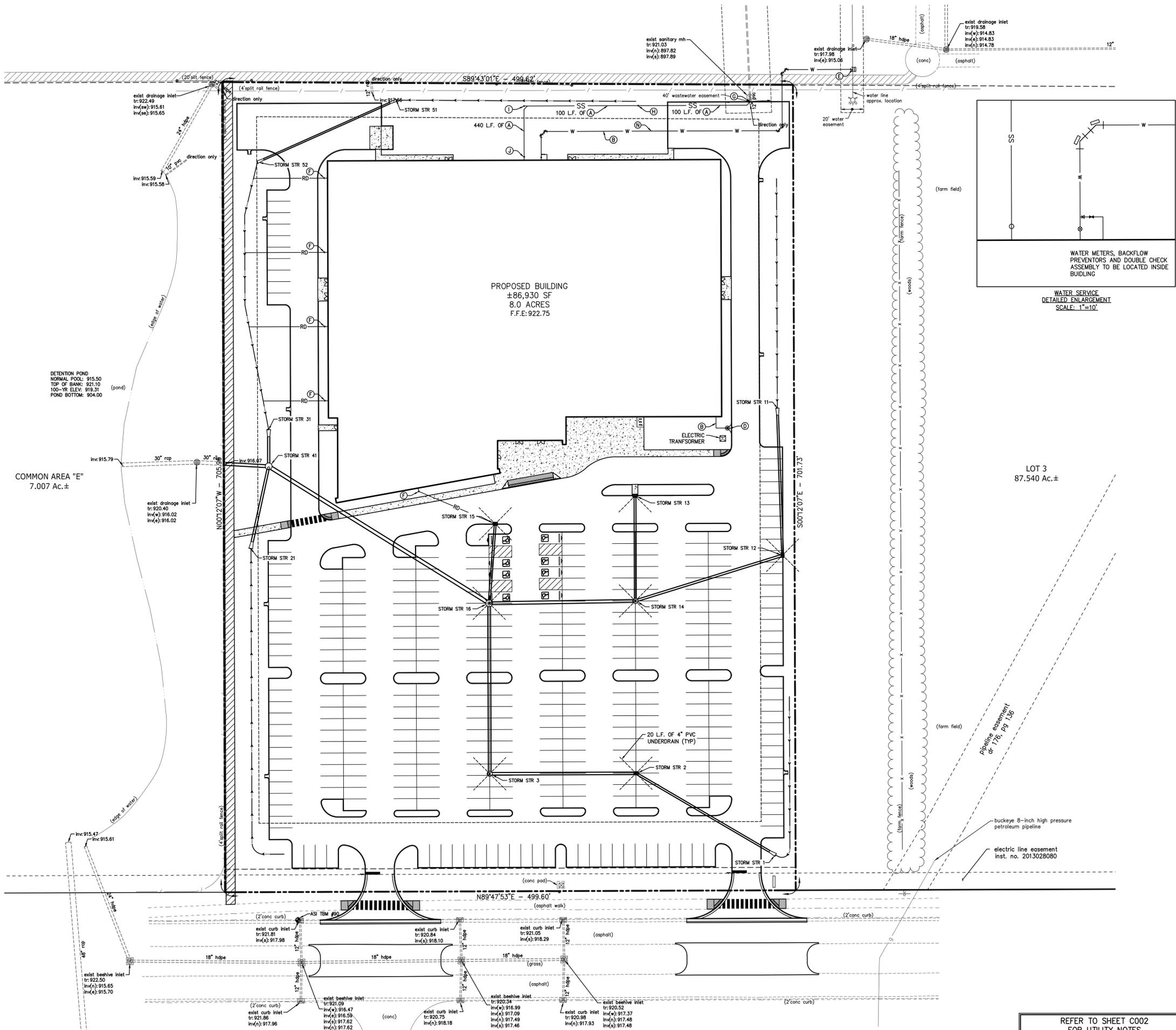
REVISION SCHEDULE

NO.	DESCRIPTION	DATE

Project Number 2014.01793

UTILITY  
PLAN

C301



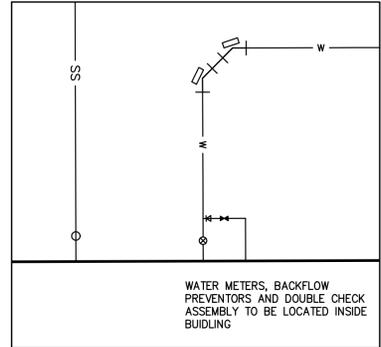
EXISTING LEGEND

- BEEHIVE INLET
- CURB INLET
- FIRE HYDRANT
- GAS MARKER SIGN
- INLET
- POST
- SANITARY MANHOLE
- TEMPORARY BENCH MARK
- TRANSFORMER
- BURIED GAS LINE
- TOP OF RIM ELEVATION
- INVERT ELEVATION
- PLASTIC PIPE
- REINFORCED CONCRETE PIPE
- PLASTIC PIPE

PROPOSED UTILITY LEGEND

- RD ROOF DRAIN
- 6" SDR26 PVC SANITARY LATERAL
- G GAS LINE
- E ELECTRIC LINE
- T TELEPHONE LINE
- W WATER LINE
- GAS METER
- ELECTRICAL TRANSFORMER
- VALVE
- WATER METER PIT
- HYDRANT
- MANHOLE

- (A) 6" SDR 26 PVC SANITARY LATERAL @ 1.04% SLOPE
- (B) 6" PVC C900 WATER LINE
- (C) 2" PVC C900 DOMESTIC SERVICE
- (D) FIRE DEPARTMENT CONNECTION
- (E) TAPPING SLEEVE AND VALVE
- (F) STORM CLEAN OUT @ INV: 917.25 WITH 10" PVC SDR 35 ROOF DRAIN @ 2.5% MIN. SLOPE
- (G) SANITARY CLEAN OUT @ INV: 897.95
- (H) SANITARY CLEAN OUT @ INV: 916.25
- (I) SANITARY CLEAN OUT @ INV: 917.29
- (J) SANITARY CLEAN OUT @ INV: 917.75
- (K) CONTRACTOR TO FIELD VERIFY LOCATION, DEPTH AND SIZE OF EXISTING UTILITIES TO ENSURE CONFLICTS DO NOT EXIST WITH PROPOSED UTILITIES
- (L) CONTRACTOR TO ENSURE VERTICAL CONFLICTS DO NOT EXIST.
- (M) 18" VERTICAL SEPARATION REQUIRED BETWEEN WATER/STORM/SANITARY CROSSINGS



BENCH INFORMATION (NAVD. 88)

- TBM #51  
RR SPIKE 2' UP IN WEST SIDE 24" TREE ALONG NORTH/SOUTH FENCE ROW NORTH OF SECTION LINE.  
ELEV = 916.63
- TBM #52  
RR SPIKE 2' UP IN SOUTH SIDE 12" TREE IN NORTH/SOUTH FENCE LINE ON NORTH SIDE OF SECTION LINE.  
ELEV = 924.88
- TBM #53  
RR SPIKE IN NORTH FACE UTILITY POLE #253-524; ±375' WEST OF KINSEY AVE. AND ±50' SOUTH OF 186th STREET.  
ELEV = 926.43
- TBM #50  
CUT SQUARE AT NW CORNER OF INLET; ±37' NORTH OF E 186th STREET AND ±65' EAST OF N/S SPLIT RAIL FENCE (BLACK).  
ELEV = 922.34

- NOTES:
- CONTRACTOR SHALL PROTECT AND NOT DESTROY THE PROPERTY CORNER MONUMENTS DURING CONSTRUCTION.
  - CONTRACTOR TO VERIFY LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES PRIOR TO COMMENCING ANY CONSTRUCTION. CONTACT ENGINEER IF VARIATION EXISTS.

**CAUTION !!**  
THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED UPON ABOVE GROUND EVIDENCE (including, but not limited to, manholes, inlets, valves, and marks made upon the ground by others) AND ARE SPECULATIVE IN NATURE. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH NO ABOVE GROUND EVIDENCE WAS OBSERVED. THE EXACT LOCATIONS OF SAID EXISTING UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.

\*811\* OR 1-800-382-5544  
CALL TOLL FREE  
- INDIANA UNDERGROUND -

REFER TO SHEET C002  
FOR UTILITY NOTES

PRINT DATE: 1/29/15 PLOT SCALE: 1:2,584.9 EDIT DATE: 1/30/2015 3:36:17 PM EDITED BY: RWINDHORST DRAWING FILE: P:\2014\01793\01793.D DRAWINGS\CIVIL\CONSTRUCTION DOCUMENTS\02014.01793.CE.C301.LUP.DWG

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FIELDHOUSE, LLC



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ISSUANCE INDEX

DATE:	01/30/2015
PROJECT PHASE:	DEVELOPMENT PLANS

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

Project Number 2014.01793

**STRUCTURE  
DATA TABLE**

**C002**

02014.01793.CE.C302.SDT.dwg

STORM STRUCTURE DATA TABLE									
NOTE: STRUCTURE CASTING IS PULLING PART ID.									
STR. NO.	STRUCTURE / CASTING TYPE	T.O.R.	INCOMING PIPE DATA (DIRECTION) / (FROM STR)	OUTGOING PIPE DATA (DIRECTION) / (TO STR)	OUTGOING PIPE L.F.	OUTGOING PIPE SIZE	OUTGOING GRADE (%)	CONNECT TO STRUCT	REMARKS
1	15" CONCRETE END SECTION	919.83	15" RCP 918.31 (NW) [2]						
2	TYPE "M" INLET / R-3455-C	921.19	21" RCP 917.85 (W) [3]	15" RCP 917.95 (SE) [1]	141'	15"	-0.25%	1	
3	TYPE "C" MANHOLE / R-3472	921.19	24" RCP 917.50 (N) [16]	21" RCP 917.60 (E) [2]	128'	21"	-0.20%	2	
11	15" CONCRETE END SECTION	919.77	15" RCP 918.25 (S) [12]						
12	TYPE "M" INLET / R-3287-SB10	920.81	18" RCP 917.82 (W) [14]	15" RCP 917.92 (N) [11]	128'	15"	-0.25%	11	
13	TYPE "J" INLET / R-3455-C	921.00	15" RCP 917.78 (S) [14]						
14	TYPE "C" MANHOLE / R-3472	921.25	24" RCP 917.46 (W) [16]	18" RCP 917.56 (E) [12] 15" RCP 917.56 (N) [13]	135' 92'	18" 15"	-0.20% -0.25%	12 13	
15	TYPE "M" INLET / R-3287-SB10	920.87	15" RCP 917.37 (S) [16]						
16	TYPE "J" MANHOLE / R-3472	921.25	30" RCP 917.10 (NW) [41]	24" RCP 917.20 (E) [14] 15" RCP 917.20 (N) [15] 24" RCP 917.20 (S) [3]	128' 69' 149'	24" 15" 24"	-0.20% -0.25% -0.20%	14 15 3	
21	18" CONCRETE END SECTION	918.46		18" RCP 916.67 (N) [41]	73'	18"	0.50%	41	
31	18" CONCRETE END SECTION	919.66	18" RCP 917.86 (S) [41]						
41	TYPE "J" MANHOLE / R-1772	920.99	18" RCP 916.30 (S) [21]	24" RCP 916.20 (W) [ ] 18" RCP 917.70 (N) [31] 30" RCP 916.30 (SE) [16]	37' 32' 227'	24" 18" 30"	0.36% -0.50% -0.35%	31 16	
51	12" CONCRETE END SECTION	920.96		12" RCP 919.71 (SW) [52]	133'	12"	0.50%	52	
52	12" CONCRETE END SECTION	920.29	12" RCP 919.04 (NE) [51]						

ALL CASTING SHALL READ "DUMP TO WASTE DRAINS TO WATERWAY"

**NOTE:**  
 1. ALL WORK TO CONFORM TO CITY OF WESTFIELD STANDARD SPECIFICATIONS AND DETAILS UNLESS OTHERWISE NOTED.  
 2. ALL WATER AND SANITARY WORK TO CONFORM TO CITIZENS WESTFIELD STANDARDS.

**NOTES:**  
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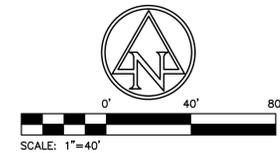
REVISION SCHEDULE

NO.	DESCRIPTION	DATE

Project Number 2014.01793

EROSION  
CONTROL PLAN

C400



EXISTING LEGEND

- BEEHIVE INLET
- CURB INLET
- FIRE HYDRANT
- GAS MARKER SIGN
- INLET
- POST
- SANITARY MANHOLE
- TEMPORARY BENCH MARK
- TRANSFORMER
- BURIED GAS LINE
- TOP OF RIM ELEVATION
- INVERT ELEVATION
- PVC
- REINFORCED CONCRETE PIPE
- PLASTIC PIPE

PROPOSED EROSION CONTROL LEGEND

- SILT FENCE
- INLET PROTECTION
- ROCK DONUT INLET PROTECTION
- EROSION CONTROL BLANKET
- SEEDING
- GRAVEL CONSTRUCTION ENTRANCE
- M.E.
- EP
- BC
- TC
- CONTOURS
- FLOW LINE
- CURB ELEVATIONS
- SPOT ELEVATIONS

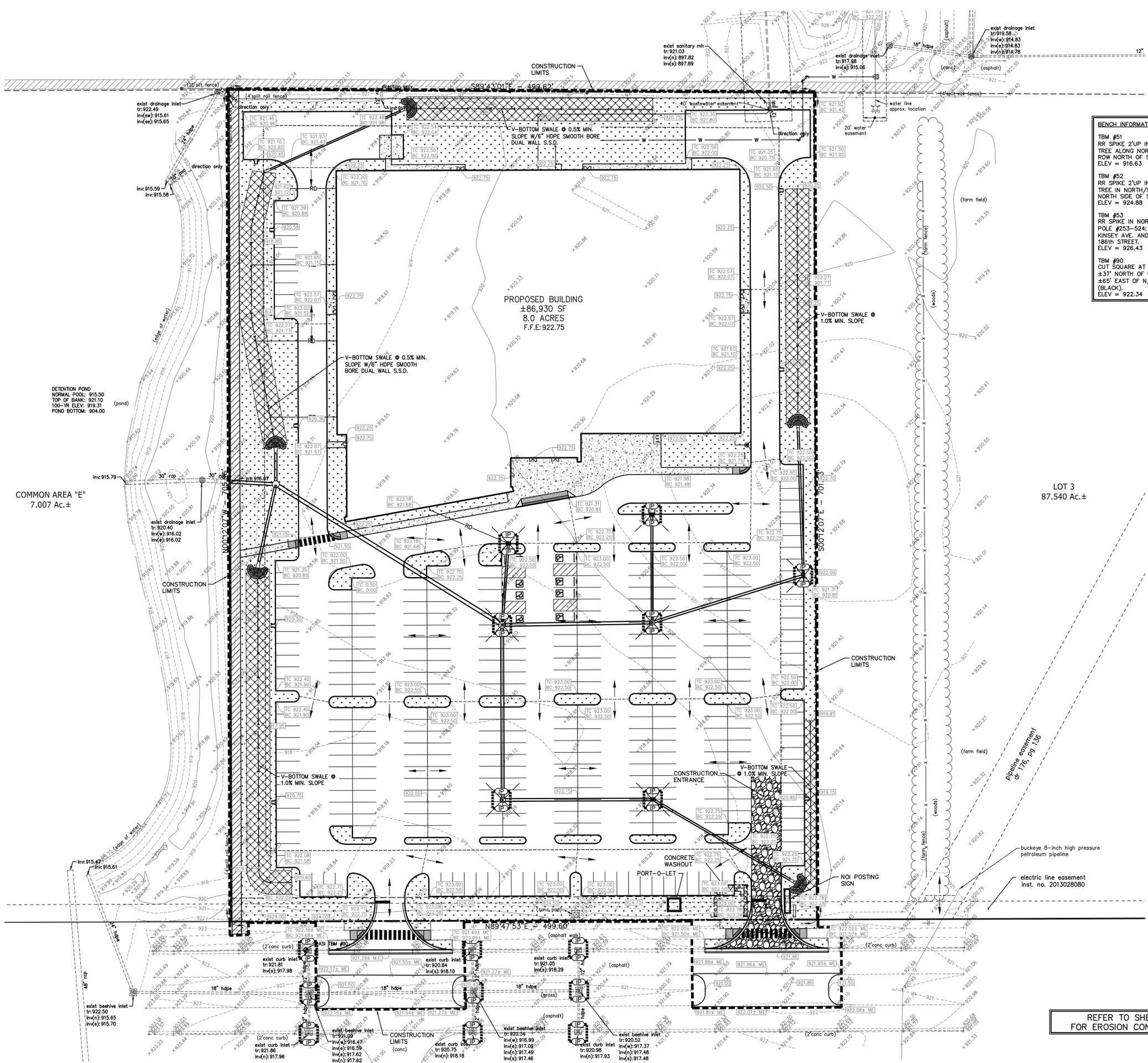
**BENCH INFORMATION (NAVD 88)**

TBM #51  
RR SPIKE 2' UP IN WEST SIDE 24"  
TREE ALONG NORTH/SOUTH FENCE  
ROW NORTH OF SECTION LINE.  
ELEV = 916.63

TBM #52  
RR SPIKE 2' UP IN SOUTH SIDE 12"  
TREE IN NORTH/SOUTH FENCE LINE ON  
NORTH SIDE OF SECTION LINE.  
ELEV = 924.88

TBM #53  
RR SPIKE IN NORTH FACE UTILITY  
POLE #253-524; ±375' WEST OF  
KINSEY AVE. AND ±50' SOUTH OF  
186TH STREET.  
ELEV = 926.43

TBM #90  
CUT SQUARE AT NW CORNER OF INLET;  
±37' NORTH OF E 186TH STREET AND  
±65' EAST OF N/S SPLIT RAIL FENCE  
ELEV = 922.34



REFER TO SHEET C002  
FOR EROSION CONTROL NOTES

**NOTES:**

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**CAUTION !!**

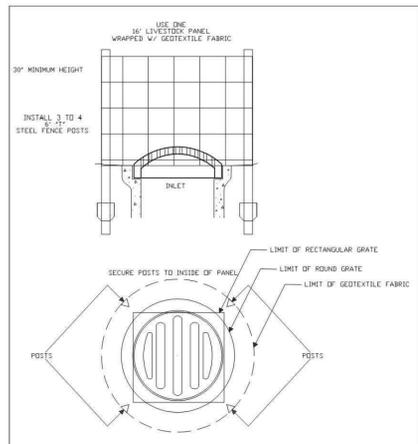
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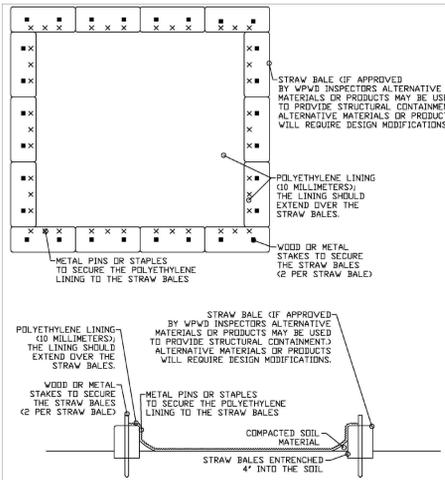
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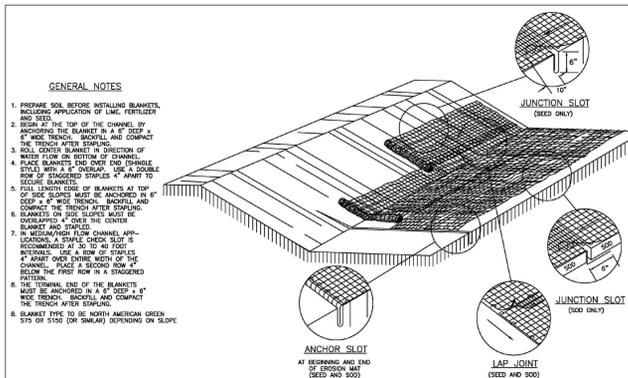
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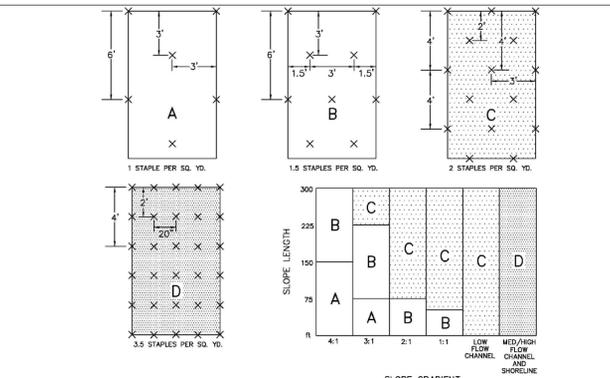
TEMPORARY DITCH INLET PROTECTION CITY OF WESTFIELD, INDIANA DATE: 4/1/13 FIGURE EC-1



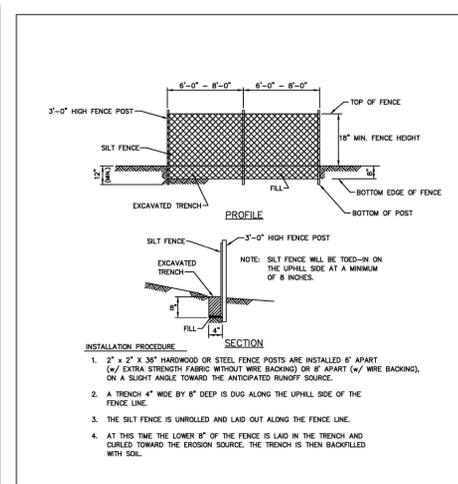
CONCRETE WASHOUT DETAIL CITY OF WESTFIELD, INDIANA DATE: 4/1/13 FIGURE EC-5



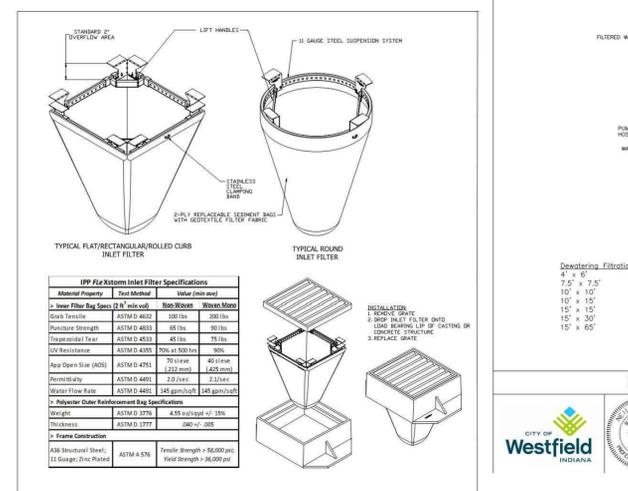
EROSION CONTROL MAT - SLOPE DETAIL CITY OF WESTFIELD, INDIANA DATE: 4/1/14 FIGURE EC-2



EROSION CONTROL MAT - STAPLE GUIDE CITY OF WESTFIELD, INDIANA DATE: 4/1/14 FIGURE EC-3



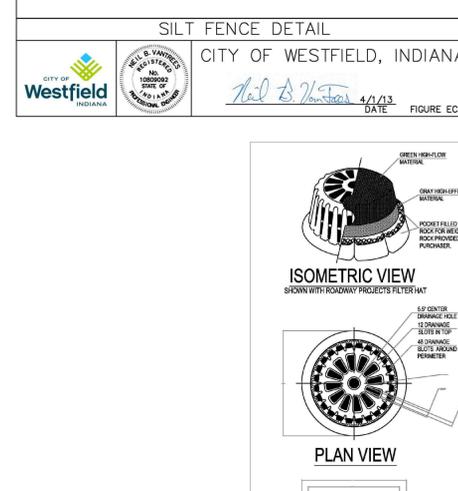
SILT FENCE DETAIL CITY OF WESTFIELD, INDIANA DATE: 4/1/13 FIGURE EC-4



INLET PROTECTION CITY OF WESTFIELD, INDIANA DATE: 4/1/13 FIGURE EC-6

Dewatering Bag Size and Capacity Chart. Includes a table with columns for dewatering bag size (4' x 6', 7.5' x 7.5', 10' x 10', 10' x 15', 15' x 30', 15' x 65') and maximum gallon per minute capacity (534, 955, 1,425, 2,117, 4,275, 9,275). Includes installation and maintenance guidelines.

DEWATERING DETAIL AND SIZE CHART CITY OF WESTFIELD, INDIANA DATE: 4/1/14 FIGURE EC-11



SILT SAVER INLET PROTECTION MODEL #R-100 CITY OF WESTFIELD, INDIANA DATE: 4/1/14 FIGURE EC-15

GENERAL NOTES: 1. PREPARE SOIL BEFORE INSTALLING BLANKETS... 2. BEGIN AT THE TOP OF THE CHANNEL... 3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW... 4. PLACE BLANKETS IN OVERLAPPING MANNER... 5. SECURE BLANKETS AT TOP OF SLOPE... 6. BLANKETS ON SIDE SLOPES MUST BE DEGRADED... 7. BLANKETS ON SIDE SLOPES MUST BE DEGRADED... 8. BLANKET TYPE TO BE NORTH AMERICAN GREEN 575 OR 5155 OR (SHAW) DEPENDING ON SLOPE.

SEEDING SPECIFICATIONS: GRADE AND APPLY SOIL AMENDMENTS. SEED FINAL GRADED AREAS DAILY WHILE SOIL IS STILL LOOSE AND MOIST. DENSITY OF VEGETATIVE COVER MUST BE PRESENT OR GREATER OVER THE SOIL SURFACE. MATERIALS: SOIL AMENDMENTS - SELECT MATERIALS AND RATES AS DETERMINED BY A SOIL TEST... SEEDING: OPTIMUM SEEDING DATES ARE MARCH 1 TO MAY 10 AND AUGUST 10 TO SEPTEMBER 30... SEEDING RATE: APPLY SEED UNIFORMLY WITH A DRILL OR OUTDRIPPER SEEDER... MAINTENANCE: INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST EVERY SEVEN CALENDAR DAYS.

PERMANENT SEEDING WITH MULCH: TABLE 1. SLOPE STABILITY RESTRICTIONS. TABLE 2. MULCH ANCHORING METHODS. TABLE 3. MULCH ANCHORING METHODS. TABLE 4. MULCH ANCHORING METHODS. TABLE 5. MULCH ANCHORING METHODS.

GRAVEL CONSTRUCTION ENTRANCE (SITES LARGER THAN TWO ACRES) CITY OF WESTFIELD, INDIANA DATE: 4/1/13 FIGURE EC-7

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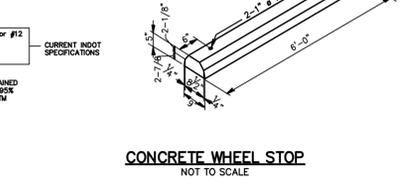
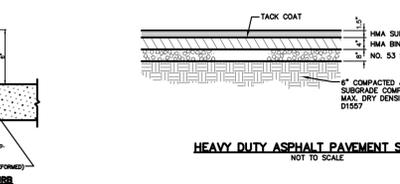
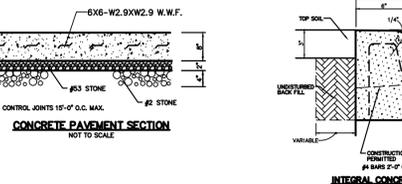
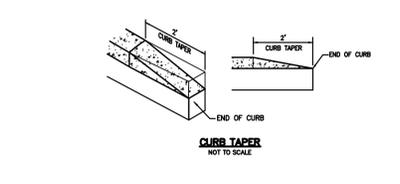
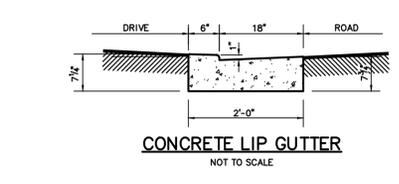
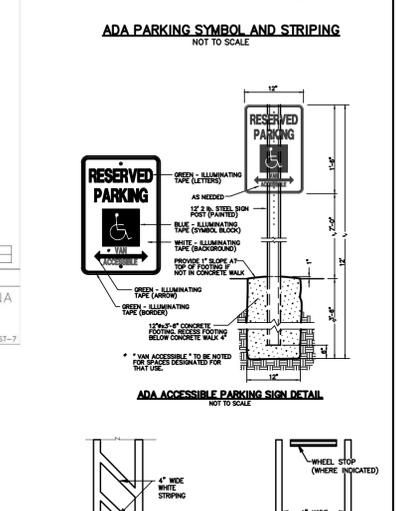
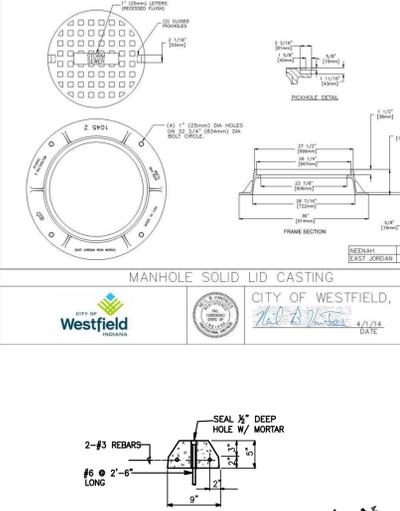
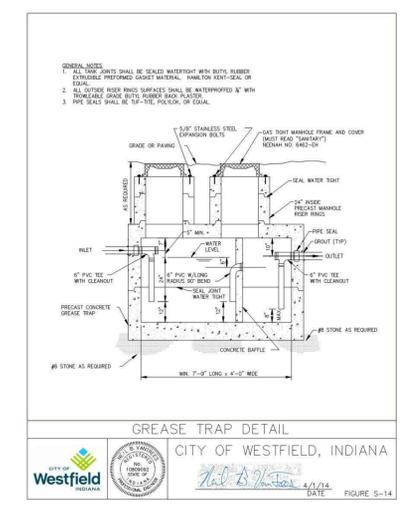
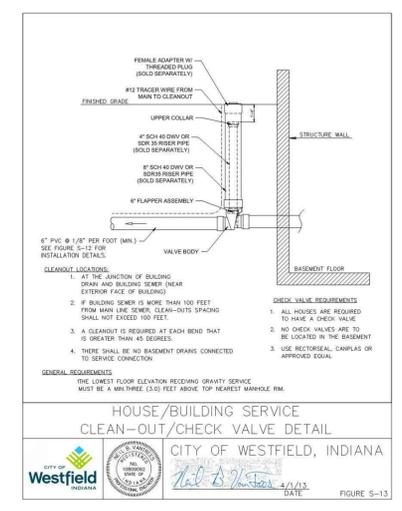
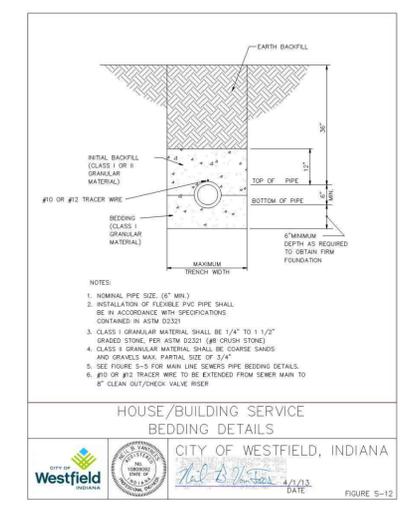
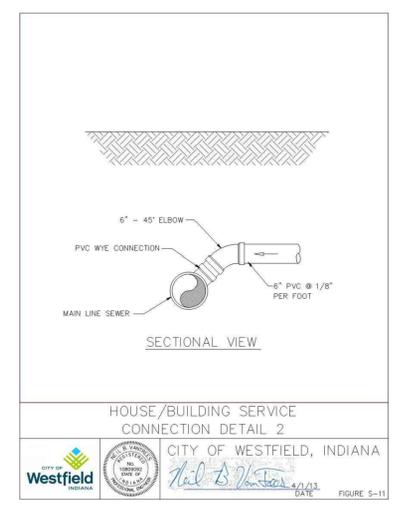
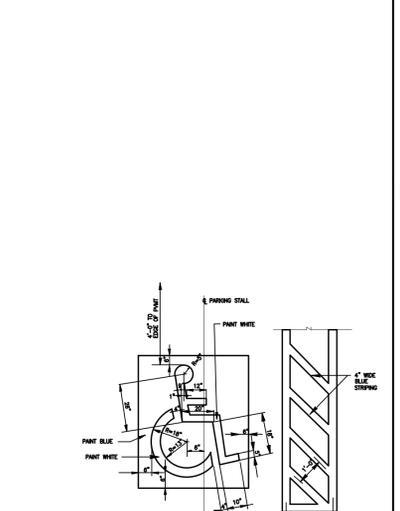
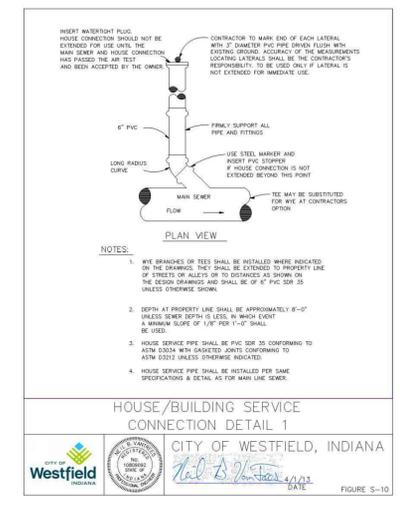
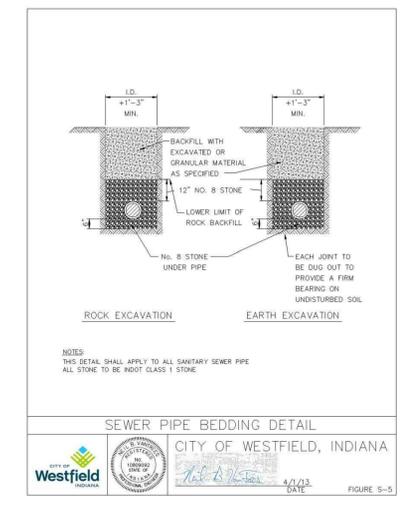
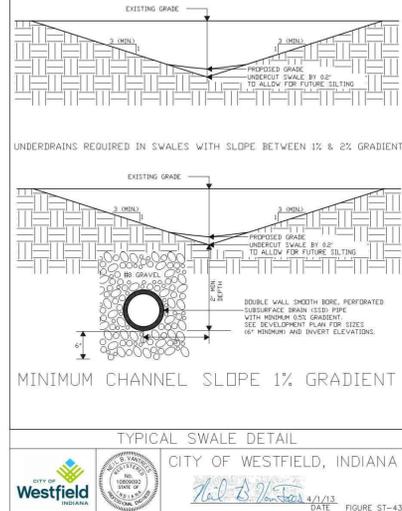
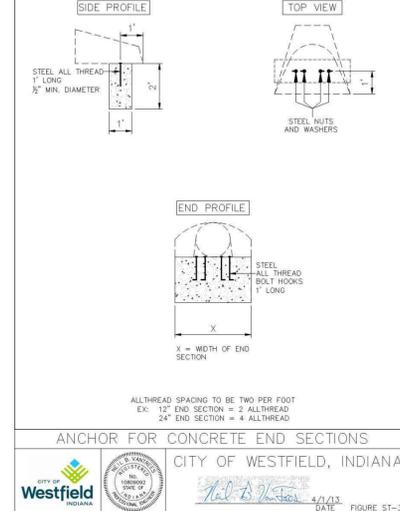
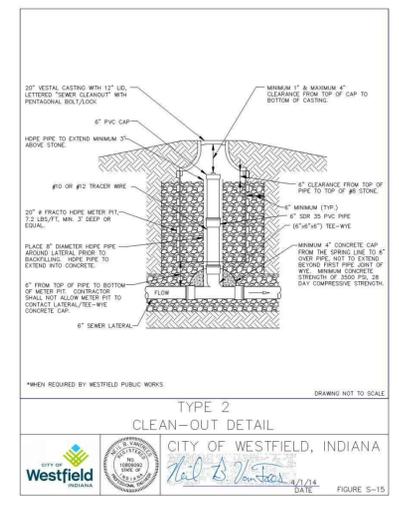
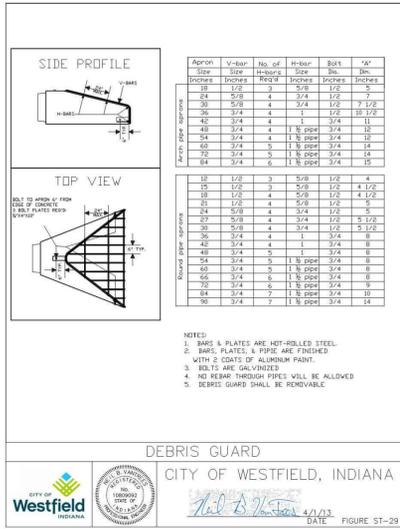
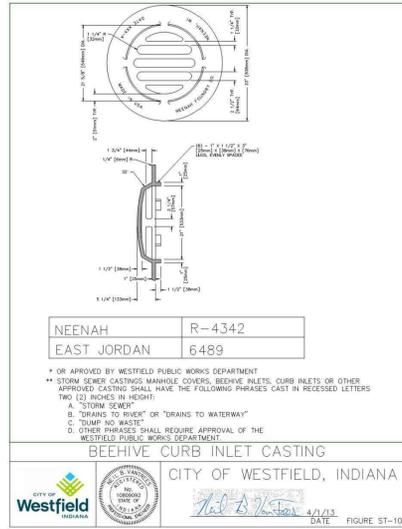
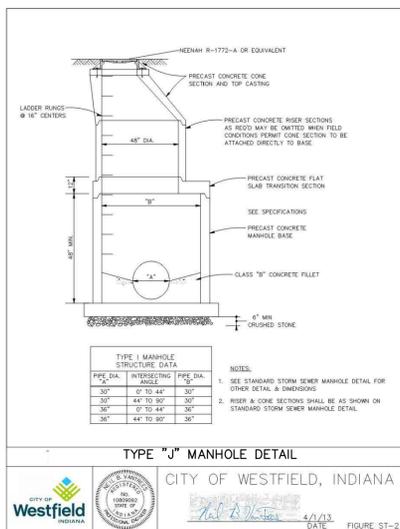
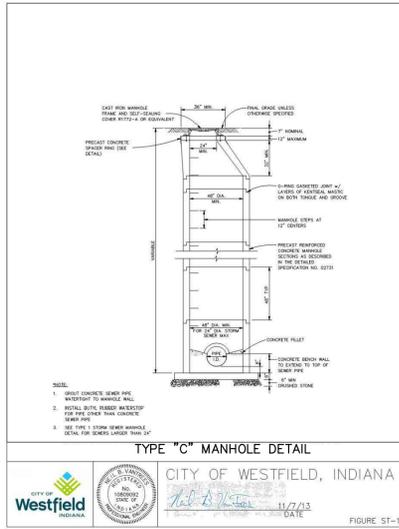
GRAND PARK FIELDHOUSE 186TH ST & KINSEY AVE WESTFIELD, IN

APPROVAL PENDING NOT FOR CONSTRUCTION

CERTIFIED BY ISSUANCE INDEX DATE: 01/30/2015 PROJECT PHASE: DEVELOPMENT PLANS REVISION SCHEDULE TABLE with columns for NO., DESCRIPTION, and DATE.

Project Number 2014.01793 EROSION CONTROL DETAILS C420 02014.01793.CE.C420.ECD.dwg

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NOT FOR CONSTRUCTION

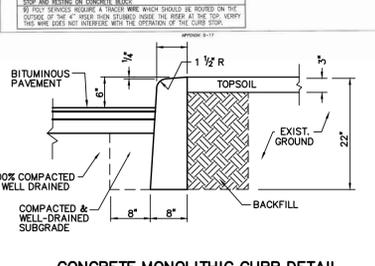
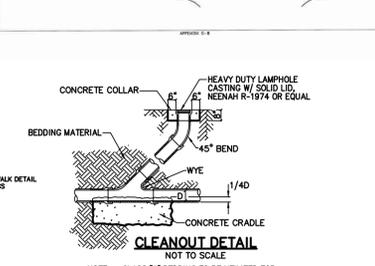
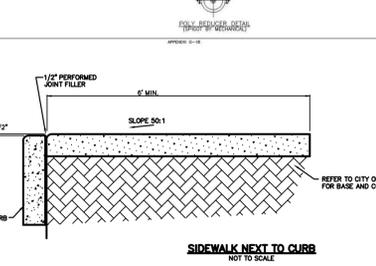
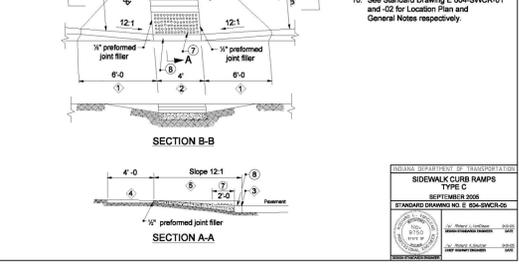
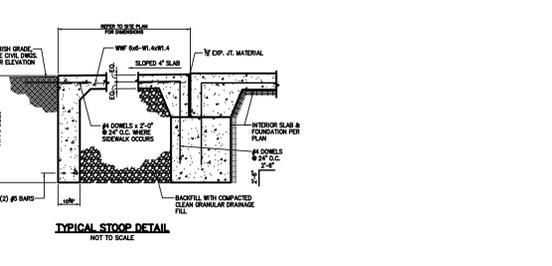
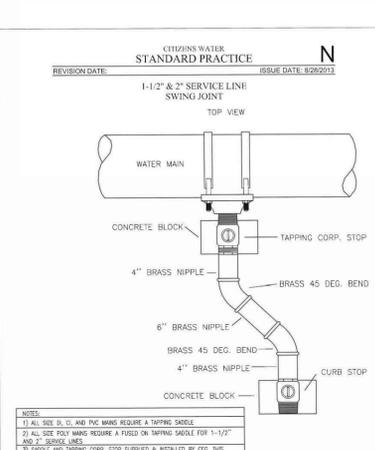
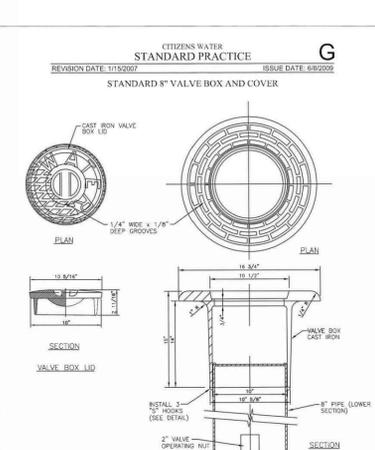
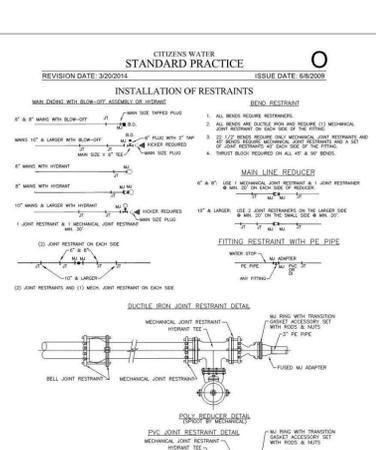
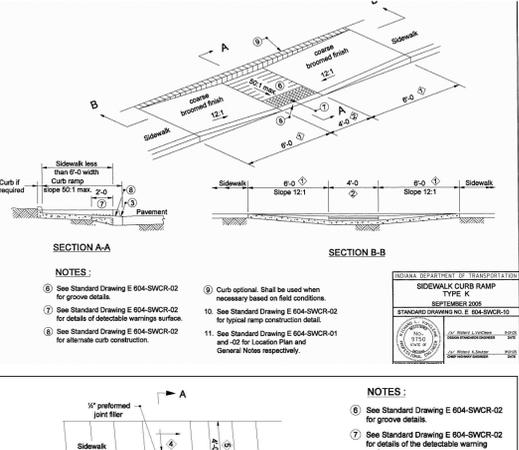
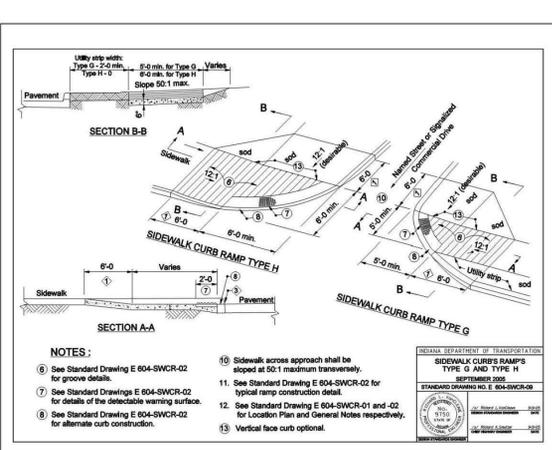
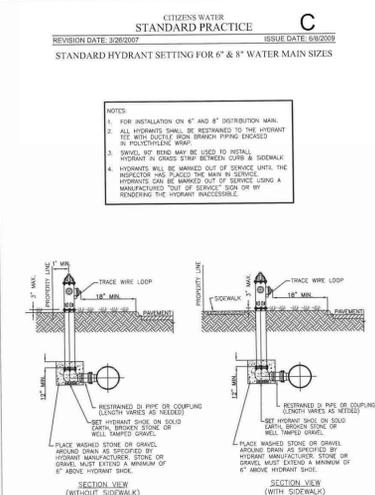
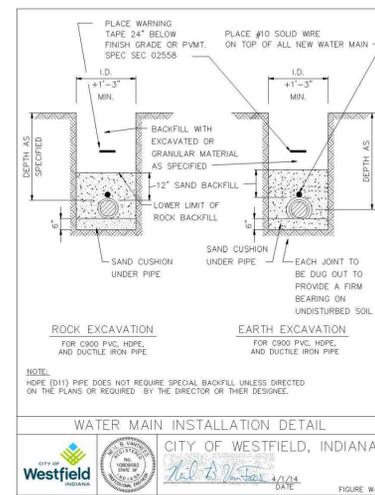
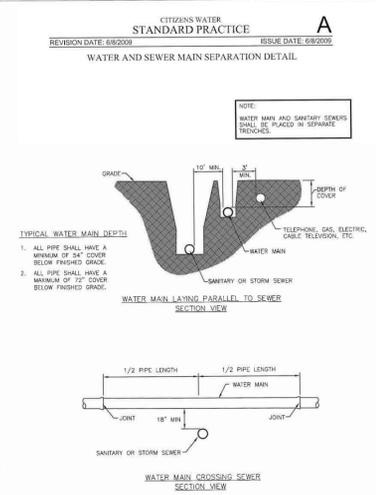
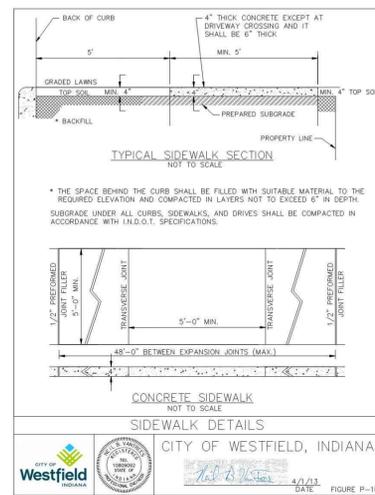
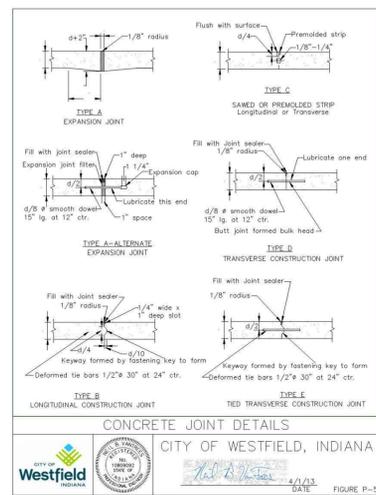
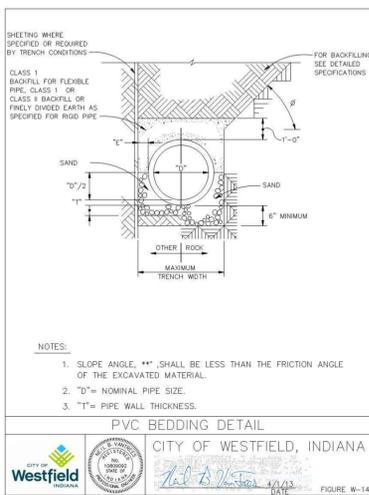
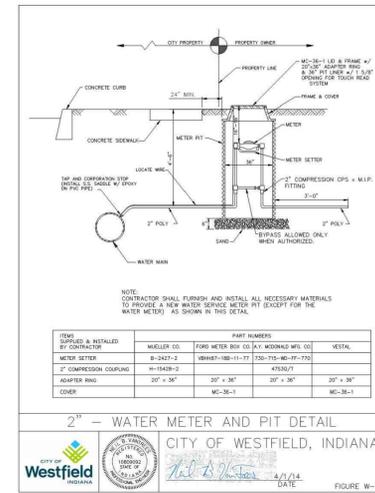
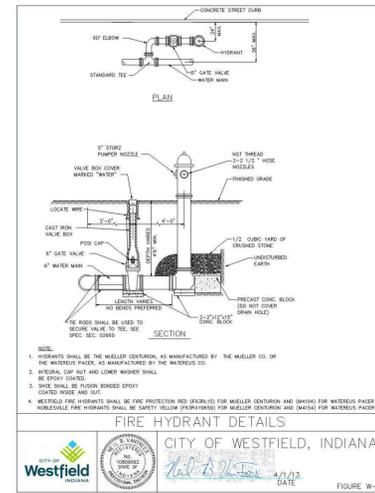
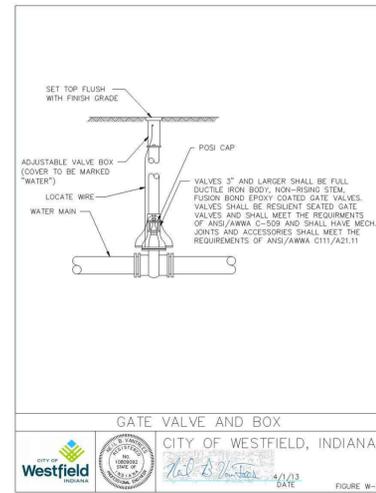
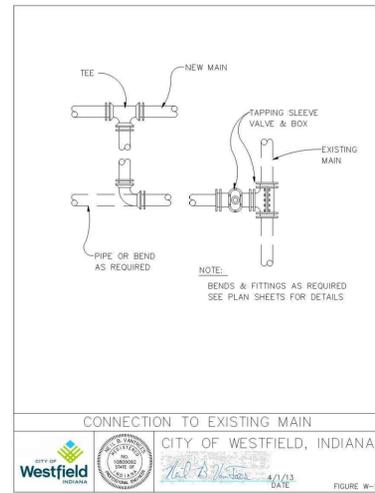
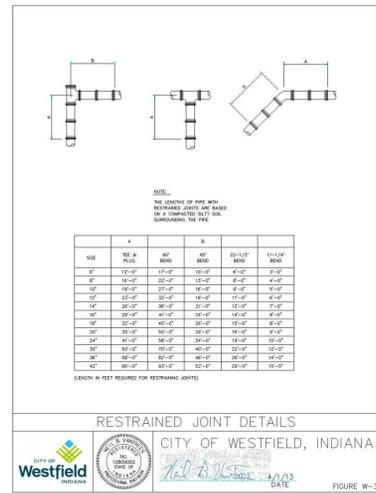
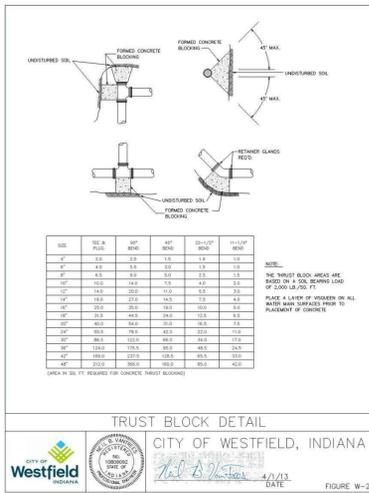
CERTIFIED BY

ISSUANCE INDEX

DATE: 01/30/2015

PROJECT PHASE: DEVELOPMENT PLANS

REVISION SCHEDULE		
NO.	DESCRIPTION	DATE



**GRAND PARK FIELDHOUSE, LLC**

7260 Shadeland Station | Indianapolis, Indiana 46256  
TEL 317.547.5580 | FAX 317.543.0270  
www.structurepoint.com

**GRAND PARK FIELDHOUSE**

**186TH ST & KINSEY AVE WESTFIELD, IN**

**APPROVAL PENDING NOT FOR CONSTRUCTION**

**CERTIFIED BY**

**ISSUANCE INDEX**

DATE:	01/30/2015
PROJECT PHASE:	DEVELOPMENT PLANS

**REVISION SCHEDULE**

NO.	DESCRIPTION	DATE

Project Number 2014.01793

**SITE DETAILS**

**C501**

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PRINT DATE: 1/29/15  
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7260 Shadeland Station | Indianapolis, Indiana 46256  
Tel: 317.547.5580 | Fax: 317.543.0270  
www.structurepoint.com

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# 186TH ST & KINSEY AVE WESTFIELD, IN



CERTIFIED BY

ISSUANCE INDEX	
DATE:	01/30/2015
PROJECT PHASE:	DEVELOPMENT PLANS

REVISION SCHEDULE		
NO.	DESCRIPTION	DATE

Project Number 2014.01793

# SITE DETAILS

# C502

### Blindness Control and Paved Invert Welded Seam Helically Corrugated Steel Pipe

The pipe shall be fabricated from flat coils. The base metal, spelter coating, and fabrication shall meet the applicable requirements of AASHTO M-36. Corrugations shall be 2-2 1/2 inch pitch by 1/2 inch depth. Each pipe shall have two similar corrugations rolled in each end.

After the ends are rolled, the pipe shall be coated with bituminous material, inside and outside, to a minimum thickness of 0.05 inch. In addition, bituminous material shall be applied to form a smooth pavement in the bottom 25% of pipe and in the bottom 40% of pipe ends required by AASHTO M-190 for Type C coating.

### Smooth Line Welded Seam Helically Corrugated Steel Pipe

The pipe shall be fabricated from flat coils. The base metal, spelter coating, and fabrication shall meet the applicable requirements of AASHTO M-36. Corrugations shall be 2-2 1/2 inch pitch by 1/2 inch depth. Each pipe shall have two smaller corrugations rolled in each end. Each pipe shall have two lifting lugs welded to the outside of the pipe.

After the ends have been rolled, the pipe shall be coated with bituminous material, inside and outside, to a minimum thickness of 0.05 inch as required by AASHTO M-190 for Type A coating. The pipe shall be centrifugally lined on the inside with bituminous material to form a smooth surface which fills the corrugations to a minimum thickness of 1/8 inch above the crests of the corrugations. The bituminous lining material shall meet the requirements of AASHTO M-190.

### Blindness Control Pipe Cautions

Coating bands shall be the same base metal and spelter coating as the pipe. Bands shall be 0.04 inch thick and 10-12 inches wide. Bands shall be bituminous coated and shall have two corrugations 7-5/8 inches center to center. Bands 12 inch diameter through 30 inch diameter shall be one-piece and 36 inch diameter through 96 inch diameter shall be two-piece. Band laps 12 inch diameter through 48 inch diameter shall be joined by one galvanized bar, bolt, and strap connector. Band laps 54 inch diameter through 96 inch diameter shall be joined by two galvanized bar, bolt, and strap connectors.

### Aluminum Alloy Structural Pipe

Aluminum alloy plate and fasteners intended for use in the construction of structural plate pipe and pipe arch for storm sewers shall meet the applicable requirements of AASHTO M-219. The plate shall be fabricated from aluminum alloy 5052 H141. The chemical composition of the plates shall conform to ASTM E309, alloy 5052.

The corrugations shall have a pitch of 9/16 inch plus or minus 3/8 inch each depth of 2.1-1/2 inches plus or minus 1/8 inch. The inside crown radius of the corrugations shall be not less than 2 inches. The structural plate pipe or arches shall be assembled in accordance with the manufacturer's erection instructions and in accordance with the drawings.

### Aluminized Steel Pipe and Arches

Aluminized coated corrugated steel pipe and pipe arch intended for use in the construction of storm sewers shall meet the applicable requirements of AASHTO M-36. Sheet material shall meet the latest revision of ASTM A575 and AASHTO M-274. The coils from which the pipe is produced shall be coated with 1.0 ounce per square foot of commercially pure aluminum.

- Sump pumps installed to receive and discharge groundwater or other stormwater shall be connected to a sanitary sewer through a separate SSSD lateral connection. Sump pumps installed to receive and discharge roof drain flow or other sanitary sewage shall be connected to the sanitary sewers. A sump pump shall not be used for one function only, either the discharge of stormwater or the discharge of sanitary sewage, each being connected to the respective receiving system only.
- Footing drains and perimeter drains shall be connected only into "D" subsurface drain (SSD) lateral connection.
- All roof downspouts, roof drains, or roof drainage piping shall discharge onto the ground and shall not be directly connected to the storm drainage system. Variation from this requirement may be requested and granted by the WPWD in special circumstances. No downspouts or roof drains shall be connected to the sanitary sewers.
- Garage and Basement floor drains and water softener discharge shall not be connected to the storm sewers.
- Swimming Pool drains shall not be connected to the storm sewers unless the water is dechlorinated prior to being connected to the storm sewer.

The quality of all materials, the process of manufacture, and the finished pipe shall be subject to inspection and approval by the WPWD. Such inspection may be made at the place of manufacture or on the construction site after delivery, or at both places, and the pipe shall be subject to rejection at any time on account of failure to meet any of the specification's requirements even though sample pieces may have been accepted as satisfactory at the place of manufacture.

Prior to being lowered into the trench, each pipe shall be carefully inspected and those not meeting the specifications shall be rejected and at once removed from the work.

The WPWD shall have the right to cut cores from each piece of the concrete pipe as the inspector desires for each inspection and tests as the inspector may wish to apply. The Developer/Contractor shall pay for the samples of an Independent Laboratory Testing.

Holes left by the removal of cores shall be filled in an approved manner by and at the expense of the manufacturer of the pipe.

The WPWD shall also have the right to take samples of concrete after it has been mixed, or as it is being placed in the form or molds, and to make such inspection and tests thereof in the inspector may wish.

Any pipe which has been damaged after delivery will be rejected and replaced solely at the Contractor's expense.

Each pipe section shall be handled into its position in the trench only in such manner and by such means as the WPWD approves as satisfactory. The Contractor will be required to furnish slings, straps, and other approval devices to permit satisfactory support of all parts of the pipe when it is lifted.

The WPWD shall be notified at least 48 hours prior to when the pipes are to be laid in the trench. At least 15 feet of the pipe shall, under ordinary circumstances, be laid before covering begins.

### Reinforced Concrete Pipe and Fittings

Reinforced concrete pipe and fittings shall conform to ASTM C76, latest revision, for circular pipe and ASTM C597 for elliptical pipe.

Reinforced concrete pipe and fittings for normal conditions shall be reinforced in accordance with ASTM C76, Class III, IV or V, Wall B (minimum). Acceptance shall be on the basis of Subsection 4.1.1. of ASTM C76.

Circumferential reinforcing in circular pipe shall be required. Only with approval from the WPWD will elliptical reinforcing or combination of elliptical and circumferential reinforcing or part circular reinforcing shall be permitted, in circular pipe.

During construction, precautionary measures such as adequate screening of grates shall be maintained to deter earth and other materials from entering the drains.

The following castings types are required:  
1. Manholes - Neenah R 1772 A or equivalent  
2. Beehive Inlets - Neenah R 4342 or equivalent  
3. "Roll Curb" Inlets - Neenah 3501 - TR or TL or equivalent  
4. "Chair Back" Curb Inlet - Neenah 3287 - 10V or equivalent  
5. Other types shall require approval of the WPWD.

Cast iron or ductile iron frames and gratings for catch basins and drain inlets shall be as shown on the drawings. Bearing surfaces shall be clean and shall provide uniform contact. Castings shall be tough, close-grained gray iron, sound, smooth, clean, free from blisters, blow holes, shrinkage, cold shuts, and all defects and shall conform to ASTM A48 Class No. 30-B.

Barrel gaskets shall be similar to and equal to "Press-Seal" or "Tylas" conforming to ASTM Designation C441, latest revision. The gasket shall be attached to the apron of the pipe and shall be the sole element depended upon to make the joint flexible and practically watertight.

Butyl mastic joint sealant in type or novel applied form specifically made for permanently sealing joints in tongue and groove concrete sewer pipe. The material shall adhere tightly to the pipe surface and form a tight, flexible joint. The material shall have been in use for at least five years. Test results and material specifications shall be submitted to the WPWD and shall be approved prior to use on the project.

### Polyvinyl Chloride Pipe and Fittings

Polyvinyl Chloride (PVC) pipe and fittings shall comply with ASTM D3034.

### Corrugated Metal Pipe and Pipe Arches

The following specifications shall govern the manufacture of the corrugated steel pipe and pipe arches:  
1. Specifications for Zinc Coated (galvanized) Steel Sheets (ASTM A444).  
2. Manufacture of Corrugated Steel Culverts and Underdrains (AASHTO M-36).  
3. Structural Plate for Pipe, Pipe Arches, and Arches (AASHTO M-167).  
4. Bituminous Coated Corrugated Steel Pipe and Arches (AASHTO M-190).  
5. Sheet Material (ASTM A525).

### Blindness Control Welded Seam Helically Corrugated Steel Pipe

The pipe shall be fabricated from flat coils. The base metal, spelter coating, and fabrication shall meet the applicable requirements of AASHTO M-36. Corrugations shall be 2-2 1/2 inch pitch by 1/2 inch depth. Each pipe shall have two similar corrugations rolled in each end. After the ends are rolled, the pipe shall be coated with bituminous material, inside and outside, to a minimum thickness of 0.05 inch as required by AASHTO M-190 for Type A coating.

- At intervals in straight sections of sewer, not to exceed the maximum allowed. The maximum distance between storm sewer manholes shall be as shown in Table 03501-2.

In addition to the above requirements, a minimum depth of 0.1 foot through manholes and inlet structures should be provided. Pipe slope should not be so steep that inlet surcharge (i.e. hydraulic grade line should remain below rim elevation).

Manhole/inlet inside lining shall be according to the City of Westfield Public Works Department Standards and Specifications. Note that the WPWD may require the applicant to provide pre-tensioned BMPs prior to discharge of the storm sewer line into a pond.

Building and backfill materials around storm sewer pipes, subsurface drains, and the associated structures shall be according to the City of Westfield Public Works Department Standards and Specifications. The specifications for the construction of storm sewers and subsurface drains, including backfill requirements, shall not be less stringent than those set forth in the latest edition of the INDOT Standard Specifications. Additionally, ductile iron pipe shall be laid in accordance with American Water Works Association (AWWA) C-600 and clay pipe shall be laid in accordance with either American Society of Testing Materials (ASTM) C-12 or the appropriate American Association of State Highway and Transportation Officials (AASHTO) specifications. Disposal on newly installed storm systems will not be allowed. Also, infiltration from cracks, missing pieces, and joints shall not be allowed. Variations from these standards must be justified and receive approval from the WPWD. Notification must be made to WPWD inspectors at least 48 hours prior to installation. All structures shall require inspection prior to backfill.

Special hydraulic structures required to control the flow of water in storm runoff drainage systems include junction chambers, drop manholes, stilling basins, and other special structures. The use of these structures shall be limited to those locations justified by prudent planning and careful and thorough hydraulic engineering analysis. Certification of special structures by a certified Structural Engineer may also be required.

The use of stormwater lift stations will not be permitted under any circumstances.

Unless otherwise approved, perforated subsurface drain tiles, footer drains, or sump pump lines shall connect to a storm structure. Storm sewer connections shall be provided by either precast or drilled holes, which are to be a minimum of two (2) inches larger than the O.D. of the connecting tile. Drain tile connections shall be made with either "Tee" or "Wye" method.

Blind connections to storm sewer pipes shall not be allowed.

Subsurface drain tile as specified herein may be used to convey water collected in sump pits and footer drains to an acceptable storm sewer outlet, provided those drain tiles are properly sized to accept these flows.

Gutter or building drains shall not be allowed to outlet directly into storm sewer systems.

To allow any connections to the storm sewer system, provisions for the connections shall be shown in the drainage calculations for the system. Specific language shall be provided in the protective covenants, on the record plat, or the parcel deed of record, noting the ability or inability of the system to accommodate any permitted connections, for example, sump pumps and footing drains.

TABLE 03501-1

Material	Manning's "n" "n"	Maximum Velocity (feet/second)
☐ Closed Conduits		
Concrete	0.013	10
Vertified Clay	0.013	10
HDPE	0.012	10
PVC	0.011	10
☐ Circular CMP, Annular Corrugations, 2.25 x 1/8 inch		
Unpaved	0.024	7
25% Paved	0.021	7
50% Paved	0.018	7
100% Paved	0.013	7
Concrete Culverts	0.013	10
HDPE or PVC	0.012	10
☐ Open Channels		
Concrete, Trowel Finish	0.013	10
Concrete, Broom Finish	0.015	10
Gravle	0.018	10
Riprap Placed	0.030	10
Riprap Dumped	0.035	10
Gabion	0.028	10
New Earth (1)	0.025	4
Existing Earth (2)	0.030	4
Dense Growth of Weeds	0.040	4
Dense Weeds and Grass	0.040	4
Scrub with Brush	0.035	4

Source of Manning "n" values: *HEPFC, Stormwater Drainage Manual, July 1993.*  
(1) New earth (uniform, unshaded, dry soil)  
(2) Existing earth (fairly uniform, with some weeds)

TABLE 03501-2

Maximum Distance Between Manholes	Maximum Distance (Feet)
Site of Pipe (Inches)	
All sites	400

TABLE 03501-3

Maximum Distance Between Manholes	Maximum Distance (Feet)
Site of Pipe (Inches)	
All sites	400

TABLE 03501-4

Maximum Distance Between Manholes	Maximum Distance (Feet)
Site of Pipe (Inches)	
All sites	400

TABLE 03501-5

Maximum Distance Between Manholes	Maximum Distance (Feet)
Site of Pipe (Inches)	
All sites	400

TABLE 03501-6

Maximum Distance Between Manholes	Maximum Distance (Feet)
Site of Pipe (Inches)	
All sites	400

TABLE 03501-7

Maximum Distance Between Manholes	Maximum Distance (Feet)
Site of Pipe (Inches)	
All sites	400

TABLE 03501-8

Maximum Distance Between Manholes	Maximum Distance (Feet)
Site of Pipe (Inches)	
All sites	400

TABLE 03501-9

Maximum Distance Between Manholes	Maximum Distance (Feet)
Site of Pipe (Inches)	
All sites	400

Catch basins and curb inlet structures which are two (2) feet by two (2) feet in size shall not have a depth deeper than four (4) feet from the invert of the lowest pipe to the lowest part of the rim elevation of the casting. All beehive castings on a two (2) foot by two (2) foot box shall have a square riser with a round hole. All structures which do not meet these criteria shall be a manhole type, which is forty-eight (48) inches in diameter.

### Cautions

Cast iron or ductile iron frames and gratings for catch basins and drain inlets shall be as shown on the drawings. Bearing surfaces shall be clean and shall provide uniform contact. Castings shall be tough, close-grained gray iron, sound, smooth, clean, free from blisters, blow holes, shrinkage, cold shuts, and all defects and shall conform to ASTM A48 Class No. 30-B.

Barrel gaskets shall be similar to and equal to "Press-Seal" or "Tylas" conforming to ASTM Designation C441, latest revision. The gasket shall be attached to the apron of the pipe and shall be the sole element depended upon to make the joint flexible and practically watertight.

Butyl mastic joint sealant in type or novel applied form specifically made for permanently sealing joints in tongue and groove concrete sewer pipe. The material shall adhere tightly to the pipe surface and form a tight, flexible joint. The material shall have been in use for at least five years. Test results and material specifications shall be submitted to the WPWD and shall be approved prior to use on the project.

Curb inlet castings which possess open backs or have grate bars parallel to traffic flow (are not "bicycle" safe) will not be accepted by the WPWD.

Storm sewer casting manholes, beehive inlets, curb inlets or other approved casting shall have the following phrases cast in recessed letters two (2) inches in height:  
1. "Storm Sewer"  
2. "Drains to River" or "Drains To Waterway"  
3. "Dump No Waste"  
4. Other phrases shall require approval of the WPWD.

Storm sewer casting manholes, beehive inlets, curb inlets or other approved casting shall have the following phrases cast in recessed letters two (2) inches in height:  
1. "Storm Sewer"  
2. "Drains to River" or "Drains To Waterway"  
3. "Dump No Waste"  
4. Other phrases shall require approval of the WPWD.

Concrete end sections shall have a minimum of a twenty-four (24) inch precast top plate bolted to the end section per Standard Detail (ST-30). Corrugated end sections with top plates shall require WPWD approval.

### Catch Basins

During construction, precautionary measures such as adequate screening of grates shall be maintained to deter earth and other materials from entering the drains.

Catch Basins, for sediment control, locations to be determined by a Professional Engineer, and approved by the WPWD. Catch Basins shall be located within easily accessible dedicated easements or right of way of sufficient size to facilitate the maintenance of these structures

Manhole steps shall be made from a steel reinforcing rod encapsulated in a copolymer polypropylene resin. The manhole steps shall equal or exceed OSHA requirements.

Any other special manholes, junction chambers, diversion chambers, and miscellaneous concrete structures shall be constructed as detailed on the drawings.

Manhole bases shall be set on a minimum of six (6) inches of # 8 aggregate.

Concrete end sections shall have a minimum of a twenty-four (24) inch precast top plate bolted to the end section per Standard Detail (ST-30). Corrugated end sections with top plates shall require WPWD approval.

### CHAPTER 03500 INSTALLATION OF STORMWATER FACILITIES

### SECTION 03501 GENERAL

#### 03501.01 Pipe Cover, Grade, and Separation from Sanitary Sewers

Pipe grade shall be such that, in general, a minimum of 2.0 feet of cover is maintained over the top of the pipe. If the pipe is to be placed under pavement, then the minimum pipe cover shall be 2.5 feet from top of pavement to top of pipe. Uniform slopes shall be maintained between inlets, manholes and inlets to manholes. Final grade shall be set with full consideration of the capacity required, sedimentation problems, and other design parameters. Minimum and maximum allowable slopes shall be those specified in the table below.

Each Basin, for sediment control, locations to be determined by a Professional Engineer, and approved by the WPWD. Catch Basins shall be located within easily accessible dedicated easements or right of way of sufficient size to facilitate the maintenance of these structures

#### 03501.02 Alignment

Storm sewers shall be straight between manholes and inlets.

#### 03501.03 Manholes and Inlets

All manholes and inlets must be pre-tamped with an appropriate message per the City of Westfield Public Works Department Standards and Specifications. Manholes and/or inlets shall be installed to provide human access to continuous underground storm sewers for the purpose of inspection and maintenance. The casing access minimum inside diameter shall be no less than 22 inches or a rectangular opening of no less than 22 inches by 22 inches. Manholes shall be provided at the following locations:

- Where two or more storm sewers converge.
- Where pipe size or the pipe material changes.
- Where a change in horizontal alignment occurs.
- Where a change in pipe slope occurs.

#### 03501.04 Proposed Road Grades

Rear yard swales shall have a minimum slope of 2% gradient. Swales less than a 2% gradient are required to have double walls, smooth bore perforated, drain tile installed two (2) feet below the invert of the swale. Minimum swale slope shall be greater than 1% gradient. Subsurface drains shall have a minimum slope of 0.5% gradient.

Proposed road grades will be required to be graded within two (2) inches of the proposed sub-grade prior to installation of SSD. Trench width for SSD shall be a minimum of three (3) inches on both sides of the SSD, with a minimum trench width of twelve (12) inches.

#### 03501.05 Storm Sewer

Storm sewers shall be straight between manholes and inlets.

#### 03501.06 Concrete Cradles

Concrete cradles shall be constructed of Class "A" concrete and of the design shown on the detailed drawings.

Manholes and other structures are to be constructed at locations shown on the drawings and in accordance with the following specifications:  
Precast concrete manhole sections shall conform to ASTM Designation C478, except as modified herein.

- The joint design of the precast sections shall consist of a bell or groove on one end of the unit of pipe and a spigot or tongue on the adjacent end of the joining section.
- The joint shall consist of a flat rubber gasket attached to the spigot end of the precast manhole section and shall conform to Sections 6.1.6, 6.1.7 and 9 of ASTM Designation 441, latest revision.

Openings in manhole sections for sewer connections shall be cut at the point of manufacture and shall be circular or horseshoe shaped with approval or roughened surfaces to improve mortar bond. Doghouse structures shall be permitted with approval from the WPWD.

Manhole bases shall be cast on a minimum of 6 inches of compacted crushed stone.  
Manhole channels or inverts (flow lines) shall be performed and poured with Class "A" concrete to the spring line of the connecting pipe. The finished invert shall be a semi-circular shape, trowel and broom finished, smooth channel directing the flow to the downstream sewer.

Manhole frames and lids shall be of good quality cast iron, conforming to ASTM Designation A48 and as shown on Detail #2 on the Standard Detail Sheet (See Section 2-11 C-1). Unless specifically designated otherwise, manhole castings shall be the non-lacking type. The joint between the casting frame and cone sections shall be fully mortared or gasketed and coated with butyl rubber or a cold tar epoxy coating upon reaching its final set to become a watertight joint. The casting frame shall be bolted through all risers and into the cone section.

Manhole steps shall be made from a steel reinforcing rod encapsulated in a copolymer polypropylene resin. Steps shall be placed as shown on the drawings.

Manhole bases shall be cast on a minimum of 6 inches of compacted crushed stone.

Manhole channels or inverts (flow lines) shall be performed and poured with Class "A" concrete to the spring line of the connecting pipe. The finished invert shall be a semi-circular shape, trowel and broom finished, smooth channel directing the flow to the downstream sewer.

Manhole frames and lids shall be of good quality cast iron, conforming to ASTM Designation A48 and as shown on Detail #2 on the Standard Detail Sheet (See Section 2-11 C-1). Unless specifically designated otherwise, manhole castings shall be the non-lacking type. The joint between the casting frame and cone sections shall be fully mortared or gasketed and coated with butyl rubber or a cold tar epoxy coating upon reaching its final set to become a watertight joint. The casting frame shall be bolted through all risers and into the cone section.

Manhole steps shall be made from a steel reinforcing rod encapsulated in a copolymer polypropylene resin. Steps shall be placed as shown on the drawings.

Manhole bases shall be cast on a minimum of 6 inches of compacted crushed stone.

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Manhole steps shall be made from a steel reinforcing rod encapsulated in a copolymer polypropylene resin. Steps shall be placed as shown on the drawings.

Manhole bases shall be cast on a minimum of 6 inches of compacted crushed stone.

### Manholes, Inlets, and Other Structures

Storm sewer manholes and inlets shall be constructed of precast reinforced concrete. Material and construction shall conform to the latest edition of the Indiana Department of Transportation (INDOT) Standard Specifications, Sections 702 and 720.

Materials for manholes, junction chambers, diversion chambers, and miscellaneous concrete structures shall comply with the following:

- Concrete shall be Portland cement and shall meet the requirements of ASTM Specification C150, ACI 301, and ACI 318. Concrete for precast manhole sections shall be 3000 psi concrete. Monolithic manholes shall use 4000 psi concrete. Ready-mix concrete shall conform to ASTM C94, Alternate 2. Maximum size of aggregate shall be 3/4 inch. Slump shall be between 2 and 5 inches.
- Forms for chamber and structures shall be plywood or other approved material. Steel forms shall be used for the inside face of monolithic concrete manholes. Doghouse structures shall be permitted with approval from the WPWD.
- Reinforcing steel shall conform to ASTM A615, Grade 60 deformed bars, or ASTM A616 Grade 60 deformed bars.
- Mortar Materials:
  - Sand - ASTM Designation C144, passing a No. 8 sieve.
  - Cement - ASTM Designation C150, Type I.
  - Water - shall be potable.

The manufacturer shall provide openings for sewers entering and leaving the manhole. Any additional openings needed to be made in the field shall be made by drilling holes at least 1/2 inch in diameter with a maximum spacing of 2 inches.

Manhole steps shall be made from a steel reinforcing rod encapsulated in a copolymer polypropylene resin. The manhole steps shall equal or exceed OSHA requirements.

Any other special manholes, junction chambers, diversion chambers, and miscellaneous concrete structures shall be constructed as detailed on the drawings.

Manhole bases shall be set on a minimum of six (6) inches of # 8 aggregate.

Concrete end sections shall have a minimum of a twenty-four (24) inch precast top plate bolted to the end section per Standard Detail (ST-30). Corrugated end sections with top plates shall require WPWD approval.

### Catch Basins

During construction, precautionary measures such as adequate screening of grates shall be maintained to deter earth and other materials from entering the drains.

Catch Basins, for sediment control, locations to be determined by a Professional Engineer, and approved by the WPWD. Catch Basins shall be located within easily accessible dedicated easements or right of way of sufficient size to facilitate the maintenance



CERTIFIED BY

ISSUANCE INDEX	
DATE:	01/30/2015
PROJECT PHASE:	DEVELOPMENT PLANS

REVISION SCHEDULE		
NO.	DESCRIPTION	DATE

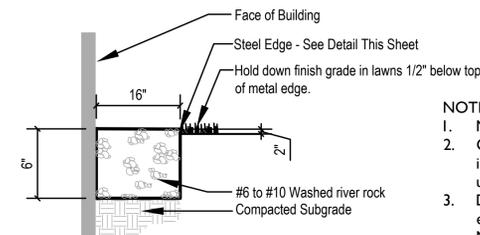
Project Number 2014.01793

**PLANTING  
DETAILS**

**L101**

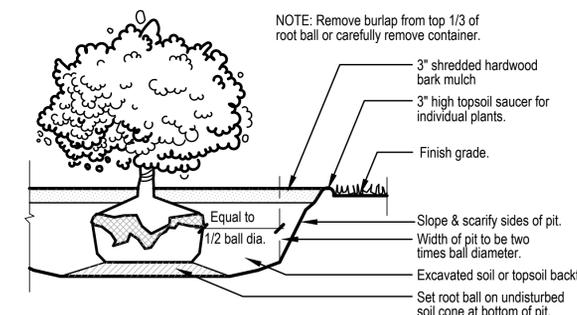
PLANT SCHEDULE					
Symbol	Botanical Name	Common Name	Size	Container	Notes
TREES					
Ace-s	Acer saccharum 'Legacy'	Legacy Sugar Maple	1.5" cal.	B&B	matched
Cer-c	Cercis canadensis	Eastern Redbud	clump form	B&B	3-5 stems
Gin-b	Ginkgo biloba 'Princeton Sentry'	Princeton Sentry Sugar Maple	1.5" cal.	B&B	columnar form
Gle-t	Gleditsia triacanthos inermis 'Shademaster'	Shademaster Honeylocust	1.5" cal.	B&B	symmetrical, matched, strong central leader
Que-r	Quercus rubra	Road Oak	1.5" cal.	B&B	dug in spring
Ulm-x	Ulmus x 'Princeton'	Princeton Elm	1.5" cal.	B&B	symmetrical, matched, strong central leader
SHRUBS					
Bux-x	Buxus x koreana 'Green Mountain'	Green Mountain Boxwood	24" ht.	container	space @ 3'-0" o.c.
Ite-v	Itea virginica 'Henry's Garnet'	Henry's Garnet Sweetspire	24" ht.	container	space @ 3'-0" o.c., allow to mass
Phy-o	Physocarpus opulifolium 'Seward'	Summer Wine Ninebark	24" ht.	container	space @ 4'-0" o.c., allow to mass
Rh-a	Rhus aromatica 'Gro Low'	Gro Low Sumac	24" spread	container	space @ 4' o.c., allow to mass
GROUNDCOVERS, PERENNIALS AND GRASSES					
Cal-x	Calamagrostis x acutiflora 'Karl Foerster'	Karl Foerster Feather Reed Grass	#1	pot	space @ 3'-0" o.c.
Pan-x	Panicum virgatum 'Cloud Nine'	Cloud Nine Switch Grass	#2	pot	space @ 3'-0" o.c.

 Areas to receive lawn

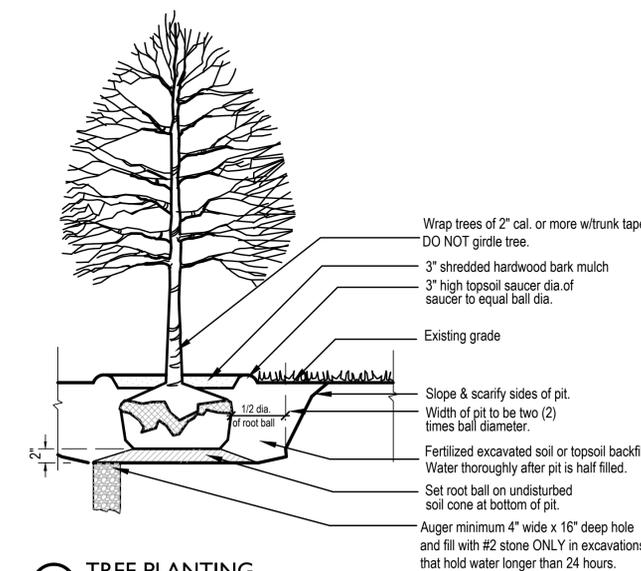


**MOW STRIP**  
Not to Scale

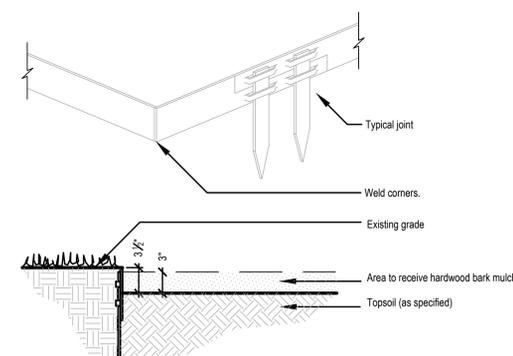
- NOTES:
- Maintain straight and true edge.
  - Outside edge shall not jog back and forth in response to slight building facade undulations and changes.
  - Do not place steel edging along the edge of hard surfaces, such as sidewalks. Mow strip material shall be graded in such a manner that the pavement is able to contain the mow strip aggregate.



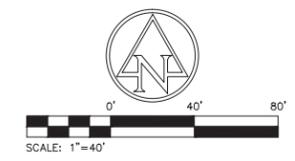
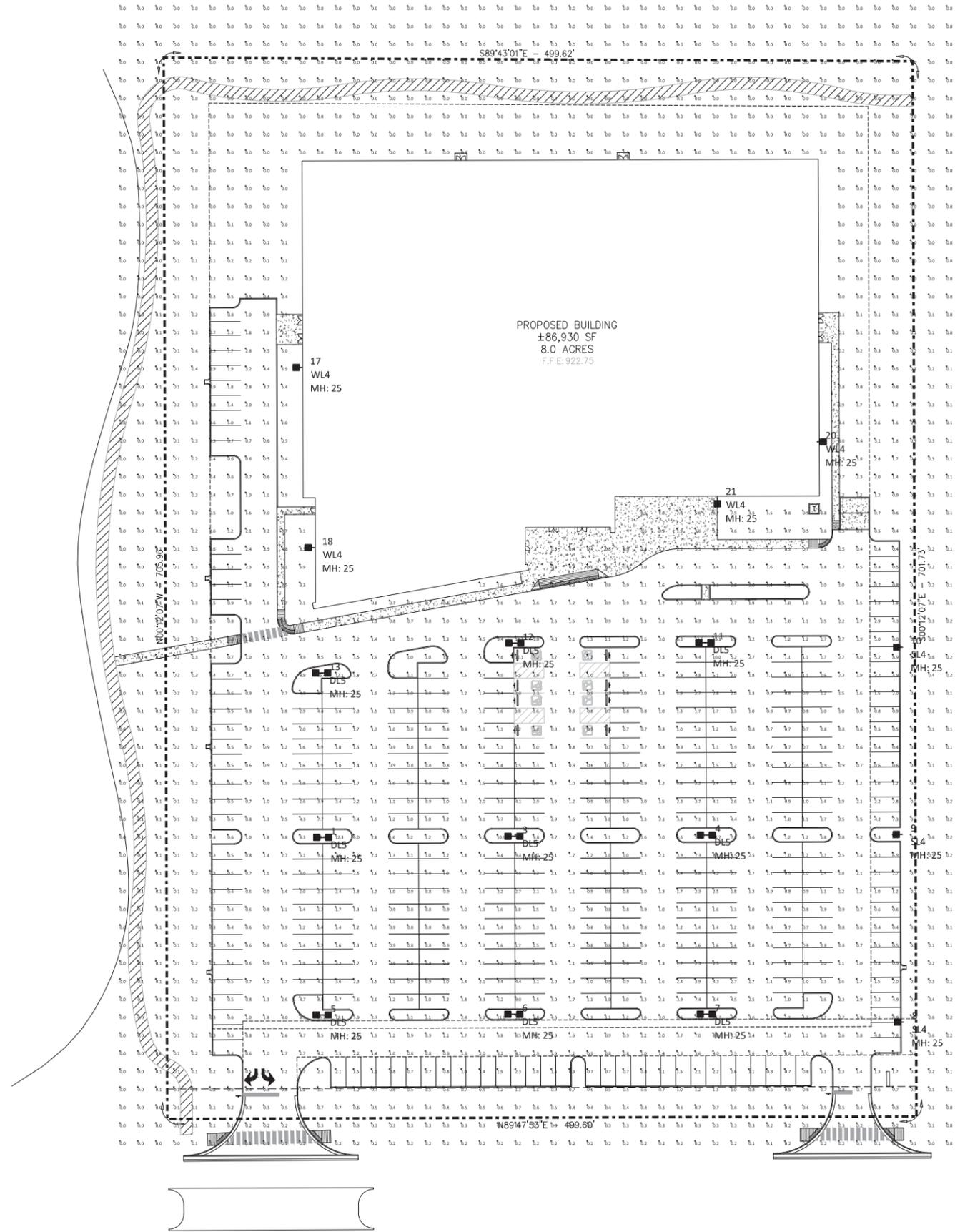
**SHRUB PLANTING**  
Not to Scale



**TREE PLANTING**  
Not to Scale



**STEEL EDGE**  
Not to Scale



**SITE LIGHTING NOTES:**

1. ALL POLES ARE 23' TALL MOUNTED ON BASES 2'-0" A.F.G. POLE HEIGHT TO MATCH PARKING LOT POLE HEIGHTS WITHIN GRAND PARK.
2. LIGHT LEVELS ARE MAINTAINED WITH A .92 LIGHT LOSS FACTOR.
3. FOOTCANDLE VALUES ARE SHOWN AT GRADE LEVEL.

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
BASEBALL	Illuminance	Fc	1.17	15.7	0.0	N.A.	N.A.
DRIVEWAYS ADJACENT BUILDING	Illuminance	Fc	1.15	8.3	0.0	N.A.	N.A.
PARKING AREA	Illuminance	Fc	2.22	15.7	0.4	5.55	39.25

Symbol	Qty	Label	Arrangement	LLF	Description	Lum. Watts	Arr. Watts	Total Watts	Lum. Lumens
[Symbol]	9	DLS	D180	0.920	TWIN ASSEMBLY CBMC# SLC-D-23-507G-5BC DUAL 194 WATT LED FIXTURES	193.8	387.6	3488.4	18455
[Symbol]	3	SL4	SINGLE	0.920	SINGLE PERIMETER ASSEMBLY CBMC #SCL-C-23-507G-5BC SINGLE 194 WATT LED FIXTURE	194.5	194.5	583.5	18408
[Symbol]	4	WL4	WALL MOUNT	0.920	WALL MOUNTED CBMC #SCL-C-WMB SINGLE 194 WATT LED FIXTURE	194.5	194.5	778	18408

GRAND PARK FIELDHOUSE, LLC



GRAND PARK FIELDHOUSE

186TH ST & KINSEY AVE WESTFIELD, IN

APPROVAL PENDING  
NOT FOR CONSTRUCTION

CERTIFIED BY		
ISSUANCE INDEX		
DATE:	01/30/2015	
PROJECT PHASE:	DEVELOPMENT PLANS	
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**CBMC LIGHTING DISTRIBUTION** CB06461-R1

5855 KOPETSKY DR | INDIANAPOLIS, IN 46217  
 317-780-8350 | WWW.CBMCINC.COM

**SITE LIGHTING PHOTOMETRY PLAN C900**