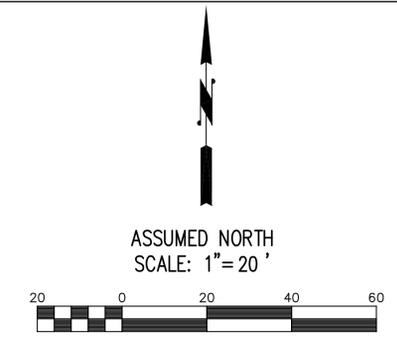


GENERAL NOTES

- OWNER ASSUMES NO RESPONSIBILITY FOR ACTUAL CONDITION OF ITEMS OR STRUCTURES TO BE DEMOLISHED.
- PROVIDE TEMPORARY BARRICADES AND OTHER FORMS OF PROTECTION AS NEEDED TO PROTECT OWNER'S PERSONNEL AND THE GENERAL PUBLIC FROM INJURY DUE TO THE DEMOLITION AREA.
- REPAIR ALL INCIDENTAL DAMAGE TO ADJACENT FACILITIES CAUSED BY GENERAL DEMOLITION AT NO ADDITIONAL COST TO OWNER.
- CONDUCT SELECTIVE DEMOLITION OPERATIONS AND DEBRIS REMOVAL IN A MANNER TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES.
- DO NOT CLOSE, BLOCK OR OTHERWISE OBSTRUCT STREETS, WALKS, OR OTHER OCCUPIED OR USED FACILITIES WITHOUT WRITTEN PERMISSION AND/OR REQUIRED PERMITS FROM LOCAL JURISDICTION. PROVIDE ALTERNATE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS IF REQUIRED BY GOVERNING JURISDICTION.
- DO NOT INTERRUPT EXISTING UTILITIES SERVING OCCUPIED OR USED FACILITIES, EXCEPT WHEN AUTHORIZED IN WRITING FROM UTILITY COMPANY.
- USE WATER SPRINKLING, TEMPORARY ENCLOSURES, AND OTHER SUITABLE METHODS TO LIMIT DUST, DIRT, AND DEBRIS TO LOWEST PRACTICAL LEVELS. COMPLY WITH GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
- PERFORM SELECTIVE DEMOLITION WORK IN A SYSTEMATIC MANNER. USE SUCH METHODS AS NECESSARY TO COMPLETE DEMOLITION SHOWN ON DRAWINGS.
- COMPLETELY FILL BELOW-GRADE AREAS AND VOIDS RESULTING FROM DEMOLITION WORK. PROVIDE FILL CONSISTING OF APPROVED EARTH, GRAVEL OR SAND, FREE OF TRASH AND DEBRIS, STONES OVER 6" DIAMETER, ROOTS, TOPSOIL, AND OTHER ORGANIC MATTER.
- REMOVE DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM DEMOLITION OPERATIONS FROM SITE. TRANSPORT AND LEGALLY DISPOSE OF MATERIALS FROM SITE.
- IF HAZARDOUS MATERIALS ARE ENCOUNTERED DURING DEMOLITION OPERATIONS, COMPLY WITH ALL APPLICABLE REGULATIONS, LAWS, AND ORDINANCES CONCERNING REMOVAL, HANDLING AND PROTECTION AGAINST EXPOSURE OR ENVIRONMENTAL POLLUTION.
- UPON COMPLETION OF DEMOLITION WORK, REMOVE TOOLS, EQUIPMENT, AND DEMOLISHED MATERIALS FROM SITE. REMOVE PROTECTION BARRICADES AND LEAVE SITE FREE OF DEBRIS.
- REPAIR DEMOLITION PERFORMED IN EXCESS OF THAT REQUIRED. RETURN FACILITIES AND SURFACES TO REMAIN TO THEIR EXISTING CONDITION PRIOR TO COMMENCEMENT OF SELECTIVE DEMOLITION WORK. REPAIR ADJACENT CONSTRUCTION OR SURFACES SOILED OR DAMAGED.
- TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION TO CONFORM TO APPLICABLE LOCAL AND STATE STANDARDS.
- ALL CONSTRUCTION ACTIVITY ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH APPLICABLE O.S.H.A. STANDARDS FOR WORKER SAFETY.
- IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL UTILITY LOCATIONS BEFORE CONSTRUCTION BEGINS.
- ALL PROPOSED SIDEWALKS SHALL ALIGN WITH EXISTING SIDEWALKS AT THEIR POINT OF CONNECTION.
- SIGN SPECIFICATIONS SHALL COMPLY WITH THE "INDIANA DEPARTMENT OF TRANSPORTATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", LATEST EDITION, UNLESS OTHERWISE APPROVED BY THE CITY OF WESTFIELD DPW.



LEGEND

- | | |
|------------------------|---------------|
| Electric Transformer | Gas Valve |
| Electric Meter | Water Valve |
| Gas Meter | Water Meter |
| Telephone Manhole | Sign |
| Sanitary Manhole | Light |
| Electric Manhole | Utility Pole |
| Existing Drainage Pipe | Storm Manhole |
| Telephone Line | Telephone Box |
| Electric Line | |
| Water Line | |
| Gas Line | |
| CATV Line | |
| Water Edge | |
- DENOTES CURB REMOVAL

KEY NOTES

- CONTRACTOR TO REMOVE ANTENNA AND SATELLITES. COORDINATE WITH ADJACENT LANDOWNER/UTILITY PROVIDER.
- CONTRACTOR TO REMOVE EXISTING ROLL CURB, CLEANLY & NEATLY.

BOUNDARY NOTE

THESE PLANS WERE PREPARED WITHOUT THE BENEFIT OF A BOUNDARY SURVEY. THEREFORE, ROGER WARD ENGINEERING, INC. CANNOT BE HELD RESPONSIBLE IF ACTUAL EXISTING PROPERTY LINES, EASEMENTS, AND RIGHT-OF-WAY LOCATIONS ARE DIFFERENT FROM WHAT IS SHOWN. SEE RECORD SURVEYS FOR EXACT INFORMATION REGARDING PROPERTY BOUNDARY, EASEMENTS, AND RIGHT-OF-WAY.

UTILITY NOTE

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 UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH NO ABOVE GROUND EVIDENCE WAS OBSERVED. THE EXACT LOCATION OF EXISTING UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.

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EXISTING CONDITIONS & DEMOLITION PLAN

REVISIONS:

1	DRAWN BY: RED
2	DATE: 05/27/2011
3	FILE NAME: INT.001/PMC/C1
4	RSB: INT001p01

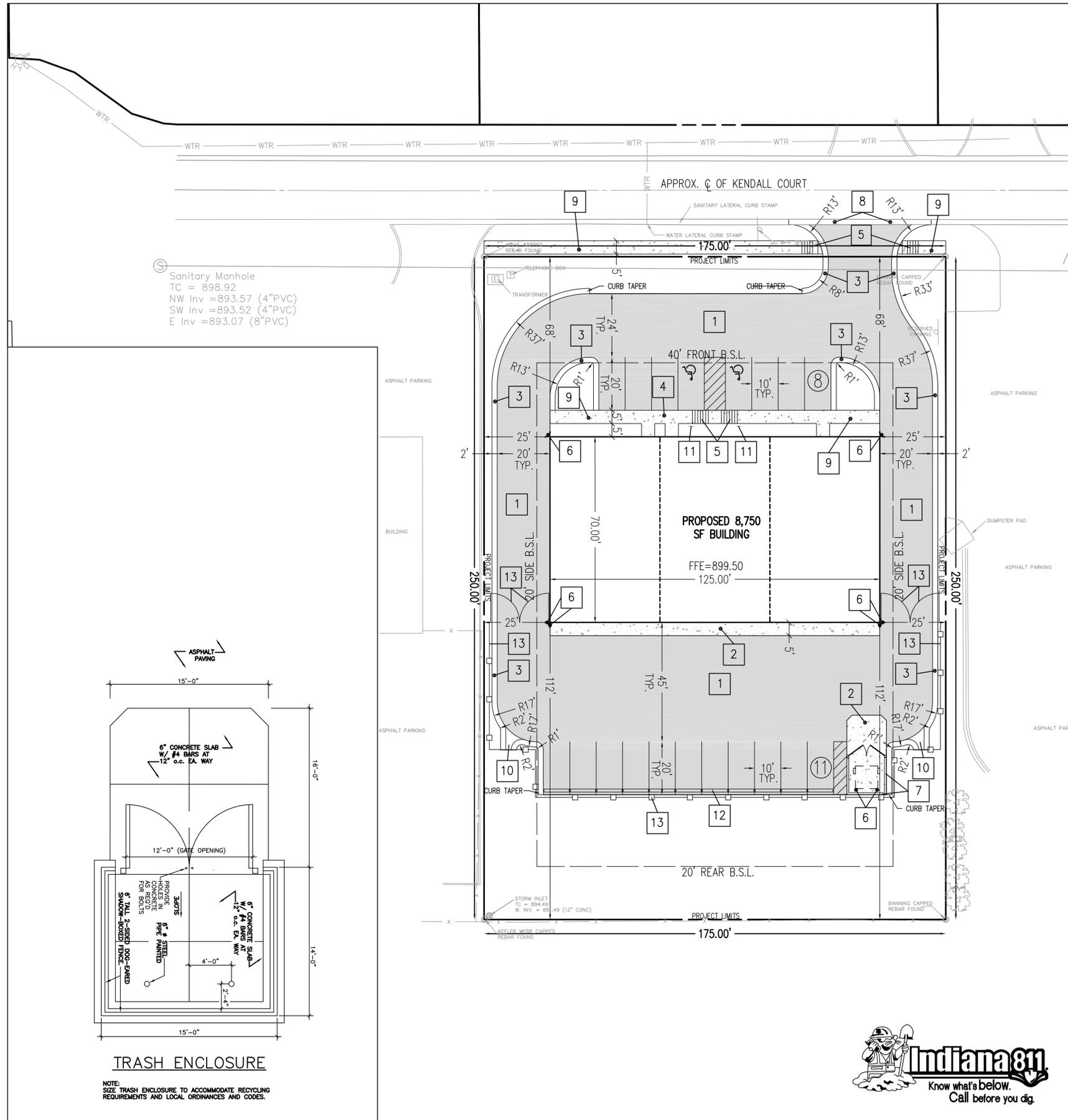
INTERBODY, INC. PROPOSED BUILDING
 1021 KENDALL COURT
 WESTFIELD, INDIANA

BY: _____
 DATE: 10-25-2011

SHEET
C1
 OF
 11

JOB#: INT.001





KEY NOTES

- 1 PROPOSED ASPHALT PAVEMENT (SEE SHEET C801).
- 2 PROPOSED CONCRETE PAVEMENT (SEE SHEET C801).
- 3 PROPOSED CONCRETE ROLL CURB & GUTTER (SEE SHEET C801).
- 4 PROPOSED INTEGRAL CURB & WALK (SEE SHEET C801).
- 5 PROPOSED ADA RAMP (SEE SHEET C801).
- 6 PROPOSED CONCRETE BOLLARD (QTY: 8).
- 7 PROPOSED DUMPSTER ENCLOSURE AND CONCRETE PAD (SEE DETAIL THIS SHEET).
- 8 PROPOSED CONCRETE VALLEY CURB & GUTTER (SEE SHEET C801).
- 9 PROPOSED SIDEWALK (SEE SHEET C801).
- 10 PROPOSED CURB TURN-OUT (SEE SHEET C801).
- 11 PROPOSED ACCESSIBLE PARKING SIGN (SEE SHEET C801).
- 12 PROPOSED CONCRETE WHEEL STOP (QTY: 11).
- 13 PROPOSED 6' TALL CHAIN LINK FENCE W/ PRIVACY SLATS (COLOR BY OWNER) AND GATES.

GENERAL NOTES

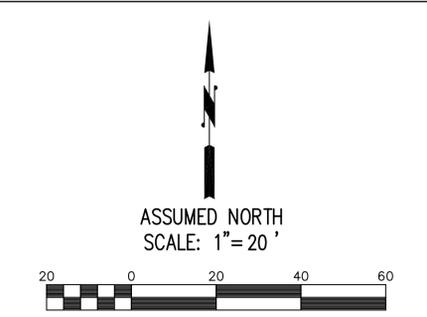
1. IT SHALL BE THE RESPONSIBILITY OF EACH SUBCONTRACTOR TO VERIFY ALL EXISTING UTILITIES AND CONDITIONS PERTAINING TO THEIR PHASE OF WORK. IT SHALL ALSO BE THE SUBCONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNERS OF THE VARIOUS UTILITIES FOR PROPER STAKE LOCATION OF EACH UTILITY BEFORE WORK IS STARTED. 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.
2. STANDARD SPECIFICATIONS FOR THE LOCAL GOVERNING AGENCY SHALL APPLY FOR ALL SANITARY SEWERS, STORM SEWERS, AND WATER MAINS.
3. ALL PARKING STRIPES ARE TO BE 4" PAINTED (WHITE), HANDICAPPED ACCESS AISLES SHALL BE 4" PAINTED (BLUE).
4. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT OR BACK OF ROLL CURB, UNLESS NOTED OTHERWISE.
5. THE EDGE OF 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.
6. ANY PART OF THE SANITARY OR STORM SEWER TRENCHES RUNNING UNDER OR WITHIN 5' OF PAVED AREAS TO BE BACKFILLED WITH GRANULAR MATERIAL.
7. ALL WATER MAINS TO HAVE A 54" MINIMUM COVER OVER TOP OF PIPE.
8. WATER SERVICE LINE TO THE BUILDING SHALL HAVE A SHUT-OFF VALVE IN AN ACCESSIBLE LOCATION OUTSIDE OF THE BUILDING.
9. STERILIZATION OF WATER MAIN SHALL BE IN ACCORDANCE WITH STATE BOARD OF HEALTH REQUIREMENTS.
10. EXPANSION JOINTS ARE TO BE PLACED AT ALL WALK INTERSECTIONS AND BETWEEN WALKS AND PLATFORMS. SIDEWALK SCORES ARE TO BE EQUALLY PLACED BETWEEN EXPANSION JOINTS, CONTRACTION JOINTS, AND PERPENDICULAR SIDEWALKS AT 5' INTERVALS OR LESS WITH A CONTRACTION JOINT EVERY 20' OR LESS.
11. REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS.
12. CONTRACTOR TO REFER TO SITE LIGHTING PLAN FOR LOCATION OF LIGHT POLES.

LEGAL DESCRIPTION

PART OF THE NORTHWEST QUARTER OF SECTION 1, TOWNSHIP 18 NORTH, RANGE 3 EAST IN WASHINGTON TOWNSHIP, HAMILTON COUNTY, INDIANA, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER OF SECTION 36, TOWNSHIP 19 NORTH, RANGE 3 EAST IN HAMILTON COUNTY, INDIANA, SAID CORNER BEING SOUTH 89 DEGREES 49 MINUTES 58 SECONDS WEST 79.77 FEET FROM THE NORTHEAST CORNER OF THE NORTHWEST QUARTER OF SECTION 1, TOWNSHIP 18 NORTH, RANGE 3 EAST IN HAMILTON COUNTY, INDIANA; THENCE SOUTH 89 DEGREES 49 MINUTES 58 SECONDS WEST ON THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 1, A DISTANCE OF 396.53 FEET TO THE CENTERLINE OF PROPOSED INGRESS/EGRESS EASEMENT (PROPOSED EASEMENT #1) SAID EASEMENT BEING 50.00 FEET OF EVEN WIDTH; THENCE SOUTH 01 DEGREES 02 MINUTES 08 SECONDS WEST (THIS AND THE FOLLOWING 4 COURSES ARE ON THE CENTERLINE OF SAID PROPOSED EASEMENT #1) A DISTANCE OF 582 FEET TO THE POINT OF CURVATURE OF A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 325.00 FEET; THENCE SOUTHWESTERLY ON SAID CURVE AN ARC DISTANCE OF 98.38 FEET; THENCE SOUTH 18 DEGREES 22 MINUTES 43 SECONDS WEST TANGENT WITH THE LAST DESCRIBED CURVE 121.06 FEET TO THE POINT OF CURVATURE OF A TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 300.00 FEET; THENCE SOUTHERLY ON SAID CURVE AN ARC DISTANCE OF 96.23 FEET; THENCE SOUTH 00 DEGREES 00 MINUTES 00 SECONDS WEST TANGENT WITH THE LAST DESCRIBED CURVE AND PARALLEL WITH THE EAST LINE OF SAID NORTHWEST QUARTER SECTION 282.22 FEET TO THE INTERSECTION OF THE CENTERLINE OF A PROPOSED INGRESS/EGRESS EASEMENT (PROPOSED EASEMENT #2), ALSO BEING 50.00 FEET OF EVEN WIDTH; THENCE SOUTH 90 DEGREES 00 MINUTES 00 SECONDS WEST ON THE CENTERLINE OF SAID PROPOSED EASEMENT #2 A DISTANCE OF 25.00 FEET TO THE WEST LINE OF PROPOSED EASEMENT #1; THENCE SOUTH 00 DEGREES 00 MINUTES 00 SECONDS WEST ON SAID WEST LINE 25.00 FEET TO THE SOUTH LINE OF PROPOSED EASEMENT #2; THENCE SOUTH 90 DEGREES 00 MINUTES 00 SECONDS WEST ON SAID SOUTH LINE 175.00 FEET TO A 5/8 INCH REBAR AT THE POINT OF BEGINNING FOR THE TRACT HEREIN DESCRIBED; THENCE SOUTH 00 DEGREES 00 MINUTES 00 SECONDS WEST PARALLEL WITH THE CENTERLINE OF PROPOSED EASEMENT #1 A DISTANCE OF 250.00 FEET TO A 5/8 INCH REBAR; THENCE SOUTH 90 DEGREES 00 MINUTES 00 SECONDS WEST 175.00 FEET TO A 5/8 INCH REBAR; THENCE NORTH 00 DEGREES 00 MINUTES 00 SECONDS EAST ON SAID WEST LINE 250.00 FEET TO A 5/8 INCH REBAR ON THE SOUTH LINE OF PROPOSED EASEMENT #2; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS EAST ON SAID SOUTH LINE 175.00 FEET TO THE POINT OF BEGINNING, CONTAINING 1.00 ACRES, MORE OR LESS.

NOTE: THE PROPOSED INGRESS/EGRESS EASEMENTS REFERRED TO IN THE DESCRIPTION ABOVE ARE NOW DEDICATED AS PUBLIC RIGHT-OF-WAY, AS SHOWN IN DEDICATIONS RECORDED AUGUST 1, 1991, AS INSTRUMENT NOS. 91-19717 AND 91-19718, IN THE OFFICE OF THE RECORDER OF HAMILTON COUNTY, INDIANA.



DEVELOPMENT SUMMARY

SITE INFORMATION :
 TOTAL SITE AREA = +/- 1.00 AC
 SITE ZONING = E-1
 FRONT BUILDING SETBACK = 40' FROM R/W
 SIDE BUILDING SETBACK = 20'
 REAR BUILDING SETBACK = 20'

REQUIRED PARKING CALCULATION :
 OFFICE AREA: 1 SPACE PER 200 SF OF OFFICE AREA
 (2,000 SF) = 10 SPACES

SERVICE STATION: 1 SPACE PER EMPLOYEE, PLUS 2 FOR EACH SERVICE STALL
 (6 EMPLOYEES) = 6 SPACES
 (1 SERVICE STALL) = 2 SPACES

-TOTAL PARKING SPACES REQUIRED = 18 SPACES

PROPOSED PARKING CALCULATION :
 ON-SITE PARKING SPACES PROVIDED = 17 SPACES
 ACCESSIBLE SPACES PROVIDED = 2 SPACES

-TOTAL PARKING SPACE PROVIDED = 19 SPACES

LEGEND

- EXISTING SANITARY SEWER & MANHOLE
- EXISTING STORM SEWER; INLET & M.H.
- EXISTING GAS LINE
- EXISTING WATER LINE
- OVHD - EXISTING ELECTRIC/TELEPHONE LINE (AERIAL)
- UGE - EXISTING UNDERGROUND ELECTRIC LINE
- UGT - EXISTING UNDERGROUND TELEPHONE LINE
- EXISTING FIRE HYDRANT
- EXISTING VALVE; GAS & WATER
- EXISTING ELECTRIC MANHOLE & TRANSFORMER
- EXISTING TELEPHONE MANHOLE & PEDESTAL
- EXISTING WATER METER
- EXISTING AREA LIGHT
- 14 - NUMBER OF PROPOSED PARKING SPACES
- PROPOSED 6' TALL CHAIN LINK FENCE
- HATCHING DENOTES ASPHALT PAVEMENT
- HATCHING DENOTES CONCRETE WALKS AND PAVEMENT

BOUNDARY NOTE

THESE PLANS WERE PREPARED WITHOUT THE BENEFIT OF A BOUNDARY SURVEY. THEREFORE, ROGER WARD ENGINEERING, INC. CANNOT BE HELD RESPONSIBLE IF ACTUAL EXISTING PROPERTY LINES, EASEMENTS, AND RIGHT-OF-WAY LOCATIONS ARE DIFFERENT FROM WHAT IS SHOWN. SEE RECORD SURVEYS FOR EXACT INFORMATION REGARDING PROPERTY BOUNDARY, EASEMENTS, AND RIGHT-OF-WAY.

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SITE PLAN

REVISIONS:
 1
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 DATE: 11/07/2011
 FILE NAME: INT/00/00/000
 XREF: INT/00/00/000

INTERBODY, INC.
 PROPOSED BUILDING
 1021 KENDALL COURT
 WESTFIELD, INDIANA

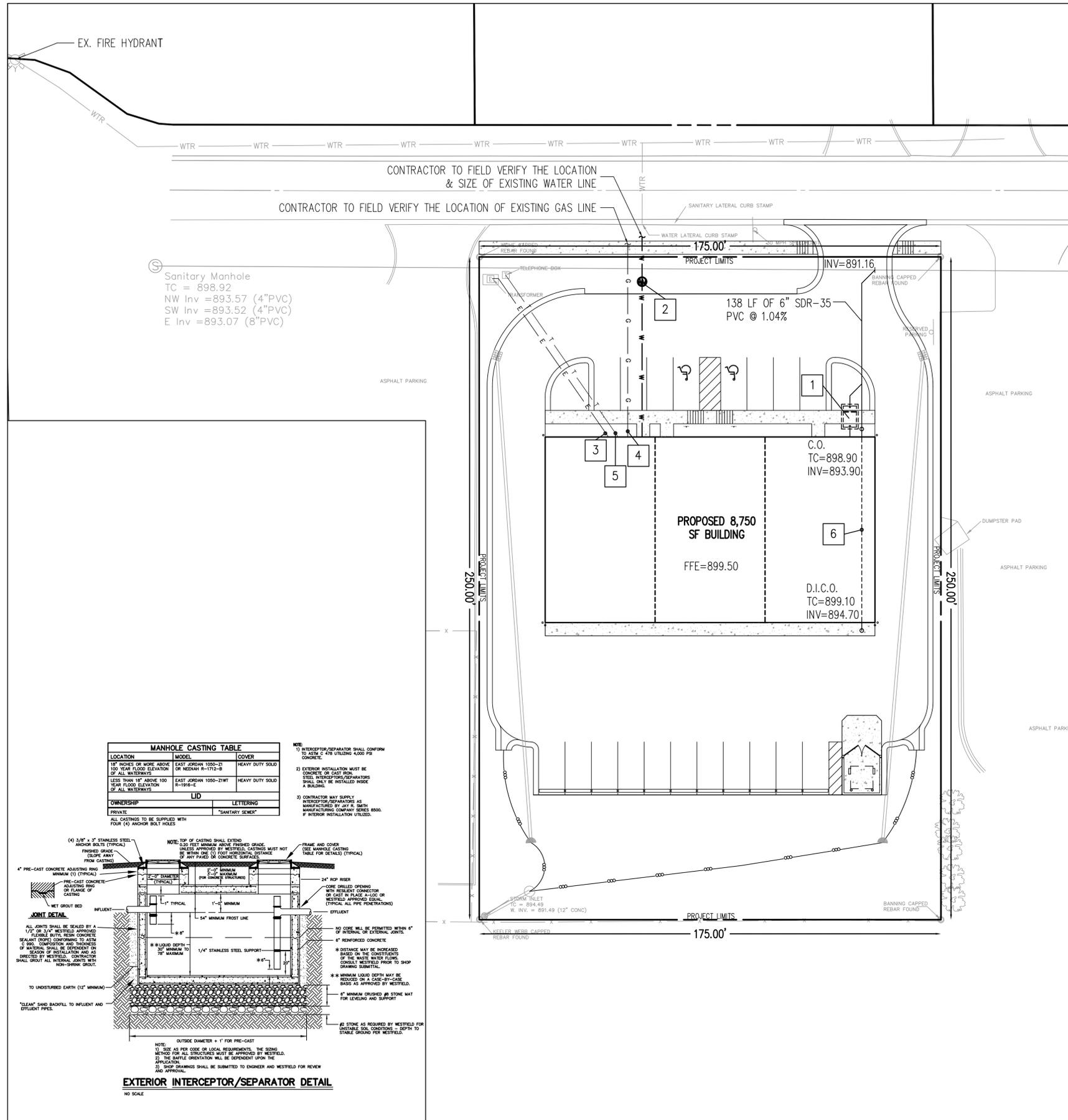
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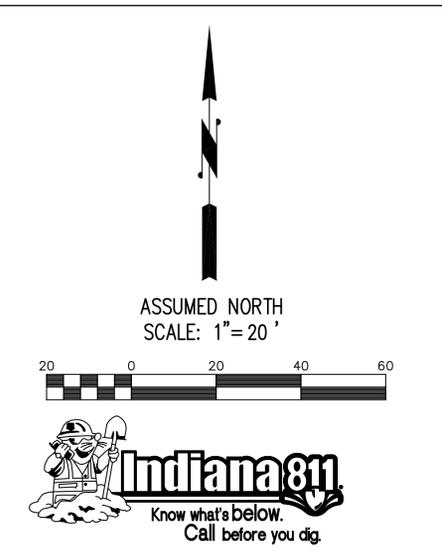
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- ### KEY NOTES
- 1 PROPOSED OIL/WATER SEPARATOR (SEE DETAIL THIS PAGE).
 - 2 1-1/2" DOMESTIC WATER SERVICE W/ EXTERIOR METER PIT. (PER WESTFIELD WATER STANDARDS).
 - 3 PROPOSED ELECTRIC SERVICE LINE (COORDINATE WITH UTILITY PROVIDER).
 - 4 PROPOSED NATURAL GAS SERVICE LINE. (COORDINATE WITH UTILITY PROVIDER).
 - 5 PROPOSED TELEPHONE SERVICE LINE (COORDINATE WITH UTILITY PROVIDER).
 - 6 PROPOSED SANITARY SEWER LATERAL (PER WESTFIELD SEWER STANDARDS).

- ### GENERAL NOTES
1. IT SHALL BE THE RESPONSIBILITY OF EACH SUBCONTRACTOR TO VERIFY ALL EXISTING UTILITIES AND CONDITIONS PERTAINING TO THEIR 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.
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 3. ALL PARKING STRIPES ARE TO BE 4" PAINTED (WHITE). HANDICAPPED ACCESS AISLES SHALL BE 4" PAINTED (BLUE).
 4. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT OR FACE OF CURB, UNLESS NOTED OTHERWISE.
 5. THE EDGE OF 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.
 6. ANY PART OF THE SANITARY OR STORM SEWER TRENCHES RUNNING UNDER OR WITHIN 5' OF PAVED AREAS TO BE BACKFILLED WITH GRANULAR MATERIAL.
 7. ALL WATER MAINS TO HAVE A 54" MINIMUM COVER OVER TOP OF PIPE.
 8. WATER SERVICE LINE TO THE BUILDING SHALL HAVE A SHUT-OFF VALVE IN AN ACCESSIBLE LOCATION OUTSIDE OF THE BUILDING.
 9. STERILIZATION OF WATER MAIN SHALL BE IN ACCORDANCE WITH STATE BOARD OF HEALTH REQUIREMENTS.
 10. EXPANSION JOINTS ARE TO BE PLACED AT ALL WALK INTERSECTIONS AND BETWEEN WALKS AND PLATFORMS. SIDEWALK SCORES ARE TO BE EQUALLY PLACED BETWEEN EXPANSION JOINTS, CONTRACTION JOINTS, AND PERPENDICULAR SIDEWALKS AT 5' INTERVALS OR LESS WITH A CONTRACTION JOINT EVERY 20' OR LESS.
 11. REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS.
 12. ALL 6" PVC SANITARY SEWER LATERALS SHALL BE INSTALLED AT A MINIMUM SLOPE OF 1.04%.
 13. ALL LATERALS ARE REQUIRED TO HAVE TRACER WIRE INSTALLED ON THE TOP OF THE PIPE FROM THE SEWER MAIN TO THE CLEANOUT.
 14. CONTRACTOR TO REFER TO SITE LIGHTING PLAN FOR LOCATION OF LIGHT POLES.
 15. CONTRACTOR TO PROVIDE SUFFICIENT CONDUIT WHERE ELECTRIC LINES CROSS PAVEMENT.



LEGEND

- EXISTING SANITARY SEWER & MANHOLE
- EXISTING STORM SEWER; INLET & M.H.
- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING ELECTRIC/TELEPHONE LINE (AERIAL)
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING UNDERGROUND TELEPHONE LINE
- EXISTING CABLE TELEVISION LINE
- EXISTING FIRE HYDRANT
- EXISTING VALVE; GAS & WATER
- EXISTING ELECTRIC MANHOLE & TRANSFORMER
- EXISTING TELEPHONE MANHOLE & PEDESTAL
- EXISTING WATER METER
- EXISTING BOLLARDS
- EXISTING AREA LIGHT
- PROPOSED STORM SEWER; INLET, BEE HIVE INLET & M.H.
- PROPOSED ELECTRIC SERVICE
- PROPOSED TELEPHONE SERVICE
- PROPOSED WATER SERVICE
- PROPOSED GAS SERVICE
- PROPOSED SANITARY LATERAL AND CLEANOUT
- PROPOSED DUCTILE IRON CLEANOUT

UTILITY NOTE

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 UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH NO ABOVE GROUND EVIDENCE WAS OBSERVED. THE EXACT LOCATION OF EXISTING UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.

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UTILITY PLAN

REVISIONS:
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 DATE: 11/07/2011
 FILE NAME: INT/007/016/C102
 XREF: INT/016/INT/016.DWG

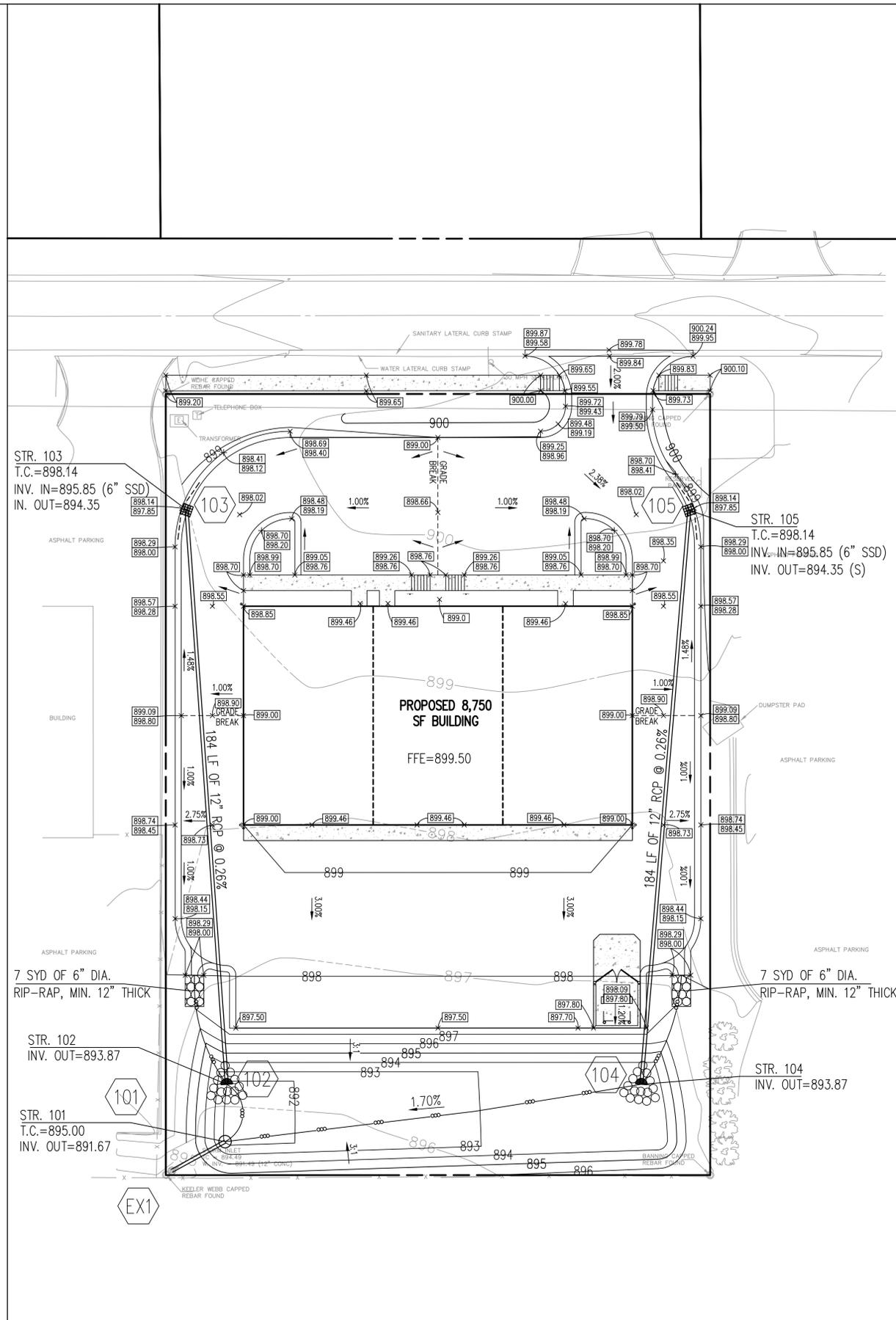
INTERBODY, INC.
PROPOSED BUILDING
1021 KENDALL COURT
WESTFIELD, INDIANA

BY:

DATE: 10-25-2011

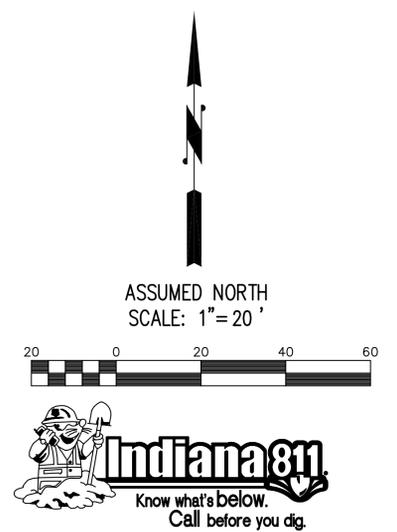
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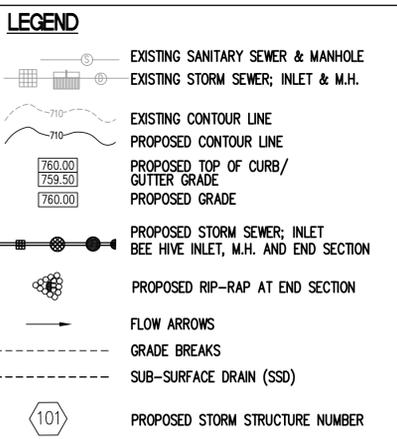
GENERAL NOTES

1. ALL GRADES AT BOUNDARY SHALL MEET EXISTING GRADES.
2. SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
3. ALL SWALES SHALL HAVE A MINIMUM SLOPE OF 1.00%.
4. CONTRACTOR SHALL MINIMIZE DAMAGE TO EXISTING TREES.
5. SLOPES SHALL NOT BE GREATER THAN 3:1 UNLESS OTHERWISE SPECIFIED.
6. REMOVE AND BACKFILL ALL AREAS WHERE ANY FIELD TILE CROSSES PROPOSED BUILDING PADS. ALL FIELD TILES INTERCEPTED TO BE PERPETUATED INTO STORM SEWER SYSTEM. THE SUBCONTRACTOR SHALL NOTIFY IN WRITING THE OWNER AND THE ENGINEER IN ANY CIRCUMSTANCES WHERE THIS CANNOT BE ACCOMPLISHED.
7. THE SUB-GRADE AND ANY FILL PLACED ON-SITE SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT MAXIMUM DRY DENSITY (ASTM D-1557). FILL BENEATH THE BASE OF FOOTING ELEVATION AND PARKING LOT AREAS SHALL BE COMPACTED TO 97 PERCENT MAXIMUM DRY DENSITY (ASTM D-1557). REFER TO PROJECT GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS.
8. THE CONTRACTOR SHALL CONFIRM ALL EARTHWORK QUANTITIES PRIOR TO THE START OF CONSTRUCTION. IF AN EXCESS OR SHORTAGE OF EARTH IS ENCOUNTERED, THE CONTRACTOR SHALL CONFIRM WITH THE OWNER AND ENGINEER THE REQUIREMENTS FOR STOCKPILING, REMOVAL OR IMPORTING OF EARTH.
9. ALL STORM SEWER TRENCHES ARE TO BE BACKFILLED WITH GRANULAR MATERIAL.
10. STANDARD SPECIFICATIONS FOR THE LOCAL GOVERNING AUTHORITY SHALL APPLY FOR ALL STORM SEWER CONSTRUCTION.
11. MAXIMUM SLOPE OF 2.00% IN HANDICAPPED PARKING AREAS.
12. ROOF DRAINS AND FOUNDATIONS DRAINS TO BE KEPT SEPARATE. REFER TO ARCHITECTURAL PLANS FOR LOCATION OF FOUNDATION DRAINS AND DOWNSPOUTS.
13. ALL STORM WATER SHALL BE KEPT SEPERATE FROM SANITARY LINES.



BENCHMARK NOTE
 PROJECT BENCHMARK: AN ISHC DISK SET IN THE TOP OF THE SOUTHWEST WINGWALL OF A CONCRETE SLAB CULVERT, OVER THE BOWMAN DRAIN, +/-293 FEET WEST OF THE INTERSECTION OF SR 32 AND UNION STREET ON THE SOUTHSIDE OF SR 32 IN WESTFIELD. HAMILTON COUNTY BENCHMARK NAME G 11.
 ELEVATION = 876.57 (N 1746561.65 E 198703.77 NAD 83)

FLOOD NOTE
 THIS SITE DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD ZONE AS SCALED FROM THE FLOOD INSURANCE RATE MAP (FIRM) FOR HAMILTON COUNTY, INDIANA, MAP NUMBER 18057C0120F, DATED FEBRUARY 19, 2003.



STORM SEWER TABLE

STR #	CASTING	TC/GUT	DOWNSTREAM PIPE INFORMATION	INVERTS	STRUCTURE TYPE	DETAIL ON SHEET #
EX1	EXISTING	894.49	N/A	NE=891.49, W=891.49 (EX. 12" STORM)	N/A	N/A
101	NEENAH R-4342	895.00	19 LF OF 12" RCP @ 0.97%	SW=891.49	48" DIA. MANHOLE	C802
102	END-SECTION	894.87	N/A	N=893.87	ISOMETRIC HEADWALL	C802
103	NEENAH R-3501-N	898.14	184 LF OF 12" RCP @ 0.26%	SSD=894.85, S=894.35	48" DIA. ROLL CURB INLET	C802
104	END-SECTION	894.87	N/A	N=893.87	ISOMETRIC HEADWALL	C802
105	NEENAH R-3501-N	898.14	184 LF OF 12" RCP @ 0.26%	SSD=894.85, S=894.35	48" DIA. ROLL CURB INLET	C802

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GRADING & DRAINAGE PLAN

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REVISIONS:
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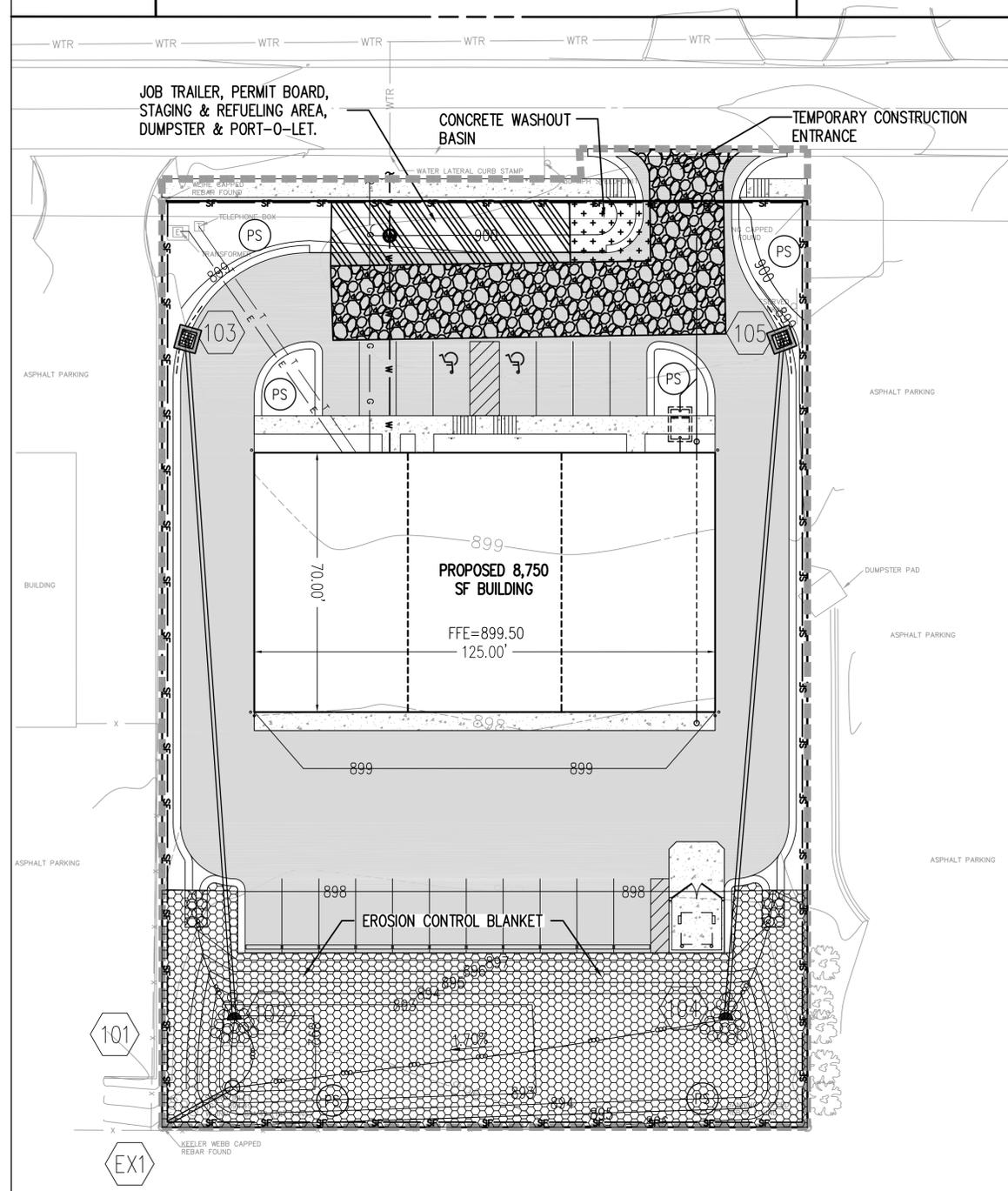


BY: _____

DATE: 10-25-2011

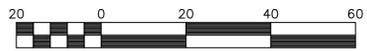
SHEET
C103
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 11

JOB#: INT.001



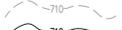
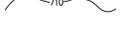
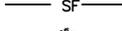
GENERAL NOTES

1. CONTRACTOR SHALL INSTALL ALL REQUIRED SILT FENCES, SILT TRAPS, TREE PROTECTION AND INLET PROTECTION FOR EXISTING INLETS PRIOR TO THE START OF ANY EARTH MOVING OR STRIPPING.
2. CONTRACTOR SHALL INSTALL A STONE CONSTRUCTION ENTRANCE OR SOME OTHER DEVICE PRIOR TO THE START OF EARTHWORK AS NECESSARY TO PREVENT SOIL FROM BEING TRACKED OR WASHED INTO EXISTING ROADWAYS.
3. 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 AND PROTECTED. AS GRADING IS DONE, INSTALL SILT TRAPS, SILT FENCES, SLOPE DRAINS, TEMPORARY DIVERSIONS AND OTHER RUNOFF CONTROL MEASURES AT APPROPRIATE LOCATIONS TO KEEP SEDIMENT CONTAINED ON SITE.
4. ALL DISTURBED AREAS SHALL BE SEEDED AND STRAW MULCHED AS SHOWN ON THE PLANS IMMEDIATELY AFTER COMPLETION OF GROUND ACTIVITY. FOR LARGE PROJECTS, THIS SEEDING SHOULD BE COMPLETED IN PHASES AS THE DIFFERENT AREAS OF THE SITE ARE COMPLETED.
5. PERMANENT AND FINAL VEGETATION OR STRUCTURAL EROSION CONTROL DEVICES SHALL BE INSTALLED AS SOON AS PRACTICAL UNDER THE CIRCUMSTANCES.
6. THE DURATION OF TIME WHICH AN AREA REMAINS EXPOSED SHALL BE KEPT TO A PRACTICAL MINIMUM DEPENDING UPON THE WEATHER. IF CONSTRUCTION ACTIVITY IS TO CEASE FOR MORE THAN TWO WEEKS, THE DISTURBED AREAS SHALL BE TEMPORARILY SEEDED.
7. ALL STORM SEWER INLET PROTECTION DEVICES SHALL BE PUT IN PLACE AT THE TIME EACH INLET IS CONSTRUCTED.
8. THE CONTRACTOR SHALL MAINTAIN EROSION CONTROL MEASURES AND DEVICES DURING CONSTRUCTION AND UNTIL SILTATION OF THE STREETS AND STORM SEWERS WILL NO LONGER OCCUR.
9. ONCE ONSITE EROSION AND SILTATION OF THE STREETS AND STORM SEWERS WILL NO LONGER OCCUR, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE TEMPORARY EROSION CONTROL DEVICES.
10. THESE GENERAL PROCEDURES MAY NOT COVER ALL SITUATIONS. REFER TO EROSION CONTROL PLANS FOR SPECIFIC NOTES AND ADDITIONAL DETAILS.
11. EROSION CONTROL TO COMPLY WITH INDIANA 327 IAC AND RULE #5, AND THE INDIANA STORM WATER QUALITY MANUAL.
12. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED IN THE FIELD BY THE INSPECTOR.
13. DIRT AND DEBRIS SHALL NOT BE TRACKED INTO THE ROADWAYS VIA CONSTRUCTION EQUIPMENT AND PERSONNEL.
14. INLET PROTECTION IS TO BE PROVIDED AT ALL INLETS. SEE SHEET C105 FOR INLET PROTECTION DETAILS.


 ASSUMED NORTH
 SCALE: 1"=20'



 Know what's below.
 Call before you dig.

LEGEND

-  EXISTING STORM SEWER INLET & MANHOLE
-  PROPOSED STORM SEWER; INLET BEE HIVE INLET, M.H. AND END SECTION W/ RIP-RAP
-  EXISTING CONTOUR LINE
-  PROPOSED CONTOUR LINE
-  EASEMENT BOUNDARY
-  RIGHT-OF-WAY
-  TEMPORARY SEEDED
-  PERMANENT SEEDED
-  LIMITS OF CONSTRUCTION
-  SILT FENCE
-  SILT FENCE INLET PROTECTION
-  PAVED AREA INLET PROTECTION
-  EROSION CONTROL BLANKET (SC150 OR EQUAL)
-  PROPOSED RIP-RAP AT END SECTION

ROGER WARD ENGINEERING INCORPORATED
 CIVIL ENGINEERS - LAND PLANNERS - DEVELOPMENT CONSULTANTS
 7474 NOEL ROAD
 INDIANAPOLIS, INDIANA 46276
 (317) 251-1728 (FAX) 251-1923
 www.rw-engineering.com

EROSION CONTROL PLAN
 DRAWN BY: BED
 DATE: 11/07/2011
 FILE NAME: INT.001/010/C104
 XREF: INTERBODY, INCORPORATED

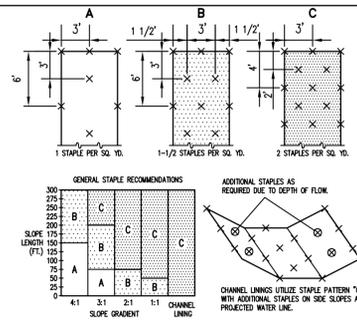
INTERBODY, INC.
 PROPOSED
 BUILDING
 1021 KENDALL COURT
 WESTFIELD, INDIANA

BY:

DATE: 10-25-2011

SHEET
C104
 OF
 11

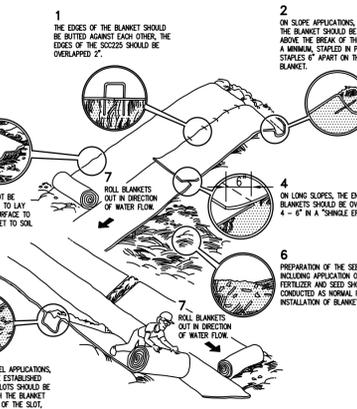
JOB#: INT.001



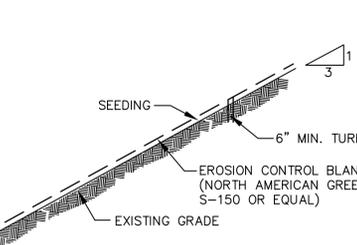
GENERAL STAPLE RECOMMENDATIONS

SLOPE LENGTH (FT)	4:1	3:1	2:1	1:1
300	B	C	C	C
250	B	C	C	C
200	B	C	C	C
150	A	B	B	B
100	A	B	B	B
50	A	B	B	B
25	A	B	B	B

STAPLE PATTERNS APPLY TO ALL NORTH AMERICAN EROSION CONTROL BLANKETS. STAPLE PATTERNS MAY VARY DEPENDING UPON SOIL TYPE AND AVERAGE ANNUAL RAINFALL. AT SLOPE LENGTHS GREATER THAN 300 FEET OR WHERE DRAINAGE OVER LARGE AREAS IS DIRECTED ONTO THE BLANKETS, STAPLE PATTERN "C" SHOULD BE UTILIZED.



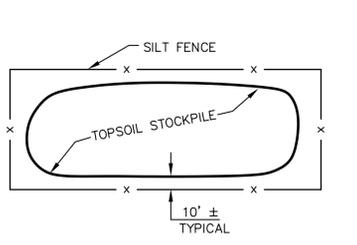
EROSION BLANKET INSTALLATION
MODEL SC-150



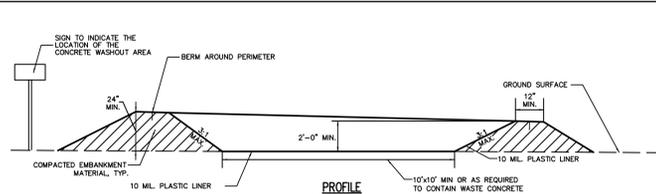
NORTH AMERICAN GREEN

TYPE	LONGEVITY	MAX. SLOPE	APPLICATION
S75	10 MONTHS	3:1	LOW FLOW SWALES
DS75	60 DAYS	3:1	LOW FLOW SWALES
S150	10 MONTHS	2:1	MODERATE DISCHARGE SWALES
DS150	60 DAYS	2:1	MODERATE DISCHARGE SWALES
SC150	2 YEARS	1:1	MEDIUM DISCHARGE SWALES
C125	3 YEARS	>1:1	HIGH DISCHARGE SWALES

EROSION CONTROL MATTING DETAIL



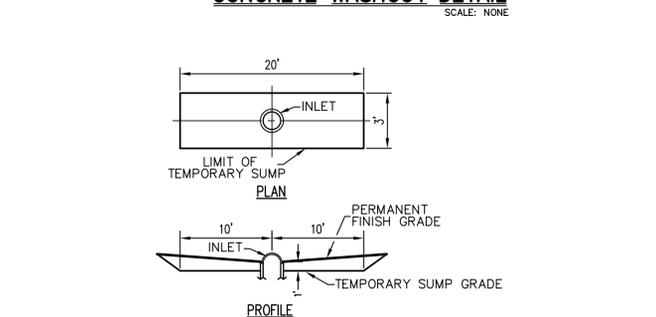
TYPICAL TOPSOIL STOCKPILE



CONCRETE WASHOUT DETAIL
SCALE: NONE

NOTES:

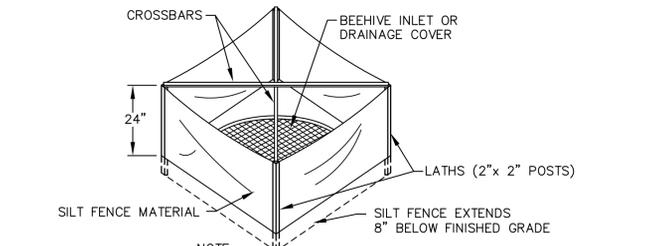
- CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
- SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
- THE CONCRETE AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
- AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN ACCEPTED WASTE SITE.
- WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE SEEDING AND MULCHED OR OTHERWISE STABILIZED IN A MANNER ACCEPTED BY THE CITY.



TEMPORARY SILTATION TRAP DETAIL
SCALE: NONE

NOTE: TEMPORARY SILTATION SUMPS SHALL BE USED IN ALL AREAS AS SHOWN ON THIS PLAN UNTIL THE PAVEMENT IS PLACED. AT THAT TIME, SAND BAGS SHALL BE UTILIZED.

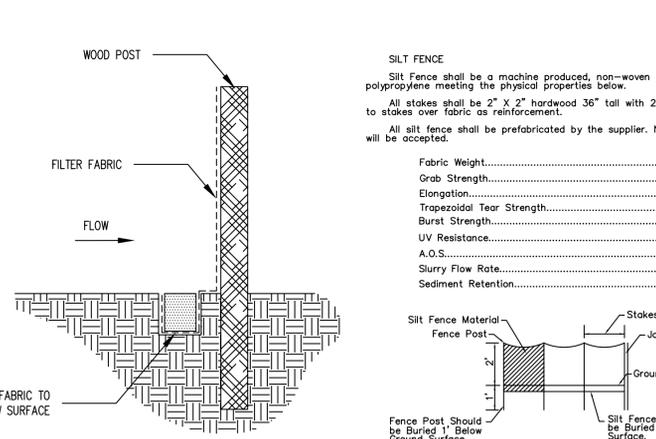
TEMPORARY SEDIMENT TRAP DETAIL
SCALE: NONE



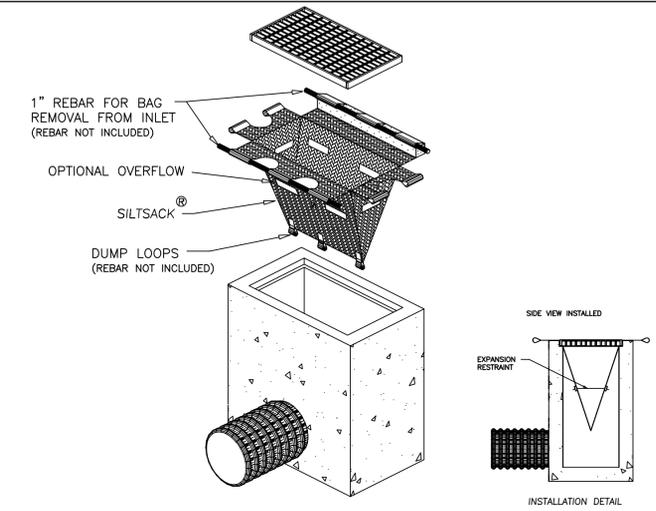
INLET PROTECTION - SILT FENCE

NOTE:

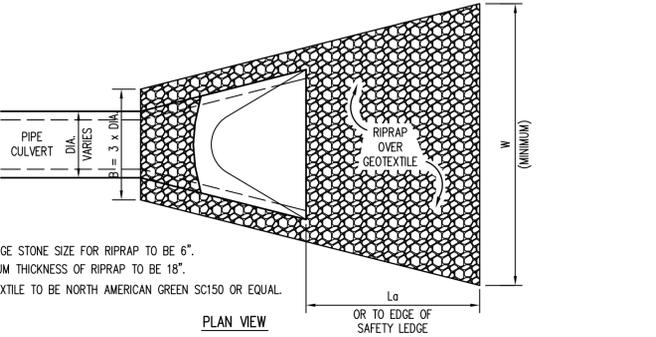
- SEE SILT FENCE DETAIL FOR MATERIAL SPECIFICATIONS.
- SILT FENCE SHALL BE PREASSEMBLED BY SUPPLIER.



SILT FENCE DETAIL
(N.T.S.)



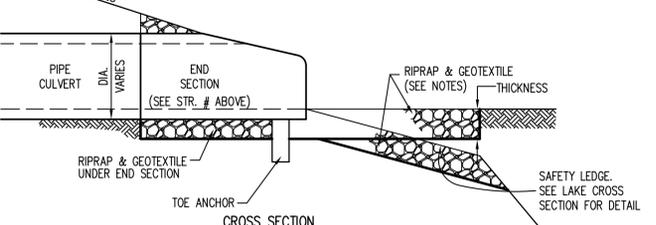
CATCH BASIN SEDIMENT INSERT
NO SCALE



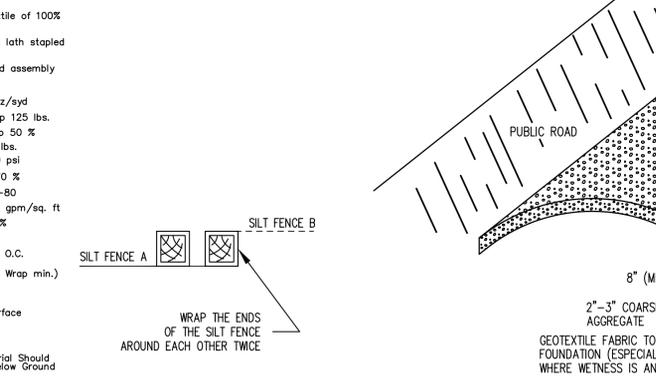
NOTES:

- AVERAGE STONE SIZE FOR RIPRAP TO BE 6".
- MINIMUM THICKNESS OF RIPRAP TO BE 18".
- GEOTEXTILE TO BE NORTH AMERICAN GREEN SC150 OR EQUAL.

STR #	B	Lo	W	THICKNESS	d ₅₀
102	3'	10'	20'	18"	6"
104	3'	10'	20'	18"	6"



RIPRAP DETAIL @ END SECTION



TEMPORARY CONSTRUCTION ENTRANCE DETAIL

SOIL CONDITION	Wet		Norm		Dry		Frost Tolerance (days)	Mature Height (inches)	Flowering Time (days)	Salt Tolerance			
	1	2	1	2	1	2							
Creeping Red Fescue <i>Festuca rubra</i>	2	1	2	1	1	1	Med.	1	20-25	12-18	7-21		S
Kentucky Bluegrass <i>Poa pratensis</i>	2	1	2	1	1	1	Med.	1	25-35	12-18	10-20		MT
Tall Fescue <i>Festuca L. arundinacea</i>	2	1	1	1	1	1	Low	1	24-35	24-36	5-14		T
Perennial ryegrass <i>Lolium perenne</i>	2	1	2	-	1	2	Med-High	2	15-20	12-18	5-10		MT
Crownvetch <i>Coronilla varia</i>	-	1	1	2	-	-	Low	1	5-10	24	14-21	T	
Red Clover <i>Trifolium pratense</i>	-	1	-	2	-	-	Med.	1	7-10	18	5-10	S	S

Ranking:
1 Good
2 Medium
- Not tolerant

Salt Tolerance (to both soil salts & spray):
T Tolerance
MT Medium Tolerance
S Slight Tolerance

FIGURE 5-4

Seedbed Preparation

Apply lime to raise the pH to the level needed for species being seeded. Utilize phosphorus-free fertilizer unless required by soils test. Application of 150 lbs. of ammonium nitrate on areas low in inorganic matter and fertility will greatly enhance vegetative growth.

Work the fertilizer and lime into the soil to a depth of 2-3 inches with a harrow, disk or rake operated across the slope as much as possible.

Seeding

Select a seed mixture based on projected use of the area (Figure 5-2), while considering best seeding dates. See Figure 5-3 this sheet. If tolerances are a problem, such as salt tolerance of seedlings adjacent to streets and highways, see Figure 5-4 this sheet before final seedings.

Mulch Rate

Mulch is to be applied at 2,000 to 3,000 pounds per acre in areas not covered by erosion control blanketing. Mulch must be anchored using a mulch anchoring tool or farm disk with dull, serrated, straight set blades, or bulldozer cleats driven up and down slope.

Figure 5-2: Permanent Seed Mixtures

Species	Seeding Rate lbs/acre	Suitable pH lbs/1000 sq. ft.	Site Suitability*		
			Droughty	Well Drained	Wet
Level and Sloping, Open Areas					
1. Tall Fescue	35	.8	5.5-8.3	2	1 2
2. Tall Fescue	25	.6	5.5-8.3		1
3. Red Clover**	5	.12	5.5-8.3		1
4. Kentucky Bluegrass	15	.4	5.5-7.5	2	1
5. Creeping Red Fescue	15	.4	5.5-7.5	2	1
Steep Banks and Cuts					
4. Tall Fescue	15	.4	5.8-7.5	2	1 2
5. Kentucky Bluegrass	25	.6	5.8-7.5	2	1 2
5. Tall Fescue	35	.8	5.5-8.3	2	1
6. Emerald Crownvetch**	10	.25	5.5-8.3	2	1
Lawns and High Maintenance Areas					
6. Kentucky Bluegrass	40	.9	5.8-7.5	2	1
7. Creeping Red Fescue	40	.9	5.8-7.5	2	1
7. Perennial Ryegrass (Turf Type)	170	4.0	5.0-7.5		1
8. Tall Fescue	170	4.0	5.5-8.3	2	1 2

* 1 - Preferred 2 - Will Tolerate ** Inoculate with specific inoculant.

Temporary Seeding Dates

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wheat or Rye												
Oats												
Annual Ryegrass												
Permanent Seeding Dates												
Non-irrigated*												
Irrigated												
Dormant Seeding**												

■ Irrigation needed during this period. To control erosion at times other than in the shaded areas, use mulch.
* Late summer seeding dates may be extended 5 days if mulch is applied.
** Increase seeding application by 50%.

FIGURE 5-3

Temporary Seedings

Kind of Seed	1000 Sq. Ft.	Acre	Remarks
Wheat or Rye	3.5 lbs.	2 bu.	Cover seed 1" to 1 1/2" deep
Spring Oats	2.3 lbs.	3 bu.	Cover seed 1" deep
Annual ryegrass	1 lb.	40 lbs.	Cover seed 1/4" deep*

* Not necessary where mulch is applied.

ROGER WARD ENGINEERING INCORPORATED

CIVIL ENGINEERS - LAND PLANNERS - DEVELOPMENT CONSULTANTS

7474 NOEL ROAD
INDIANAPOLIS, INDIANA 46276
(317) 251-1738 (FAX) 251-1823
www.rwengineering.com

EROSION CONTROL DETAILS

REVISIONS:

NO.	DATE	BY	REASON
1	11/07/2011	RED	DRAWN BY: RED
2	11/07/2011	RED	DATE: 11/07/2011
3	11/07/2011	RED	FILE NAME: INT/00/000/000/000
4	11/07/2011	RED	REVISIONS:

INTERBODY, INC.

PROPOSED BUILDING

1021 KENDALL COURT

WESTFIELD, INDIANA

REGISTERED PROFESSIONAL ENGINEER

No. PE19800489

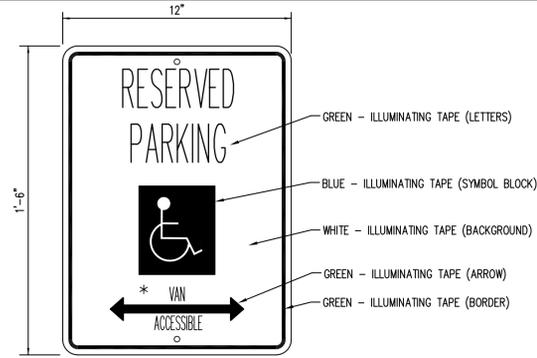
STATE OF INDIANA

BY: _____

DATE: 10-25-2011

SHEET **C105** OF 11

JOB#: INT.001

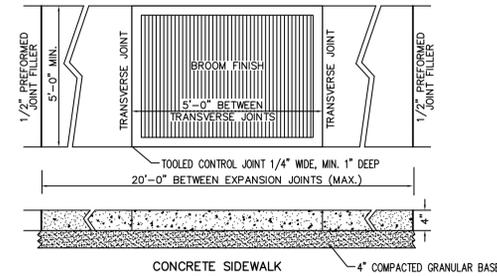


* "VAN ACCESSIBLE" TO BE NOTED FOR SPACES DESIGNATED FOR THAT USE.

HANDICAP PARKING SIGN DETAIL

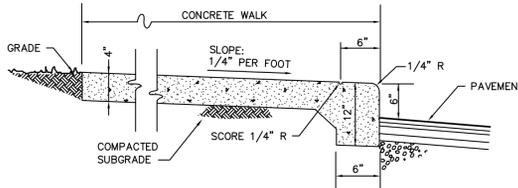
NO SCALE

SUBGRADE UNDER ALL CURB, SIDEWALK, AND DRIVES SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 207.02 OF THE STANDARD SPECIFICATIONS.

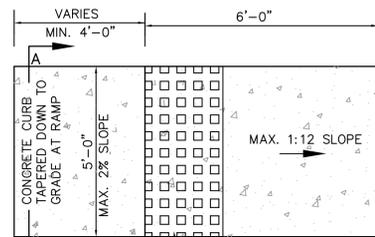


SIDEWALK DETAIL

NOT TO SCALE

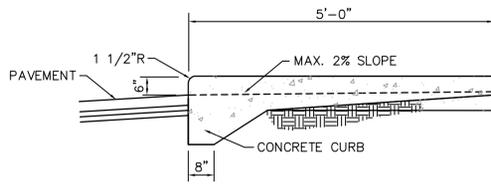


CONCRETE CURB AND WALK

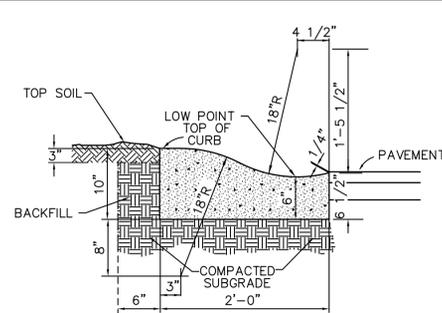


PLAN VIEW

24" WIDE DETECTABLE WARNING PATTERN PER ADA 4.29.2

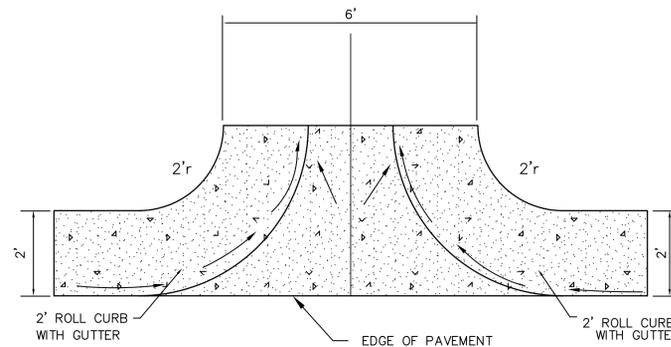


WHEELCHAIR RAMP DETAIL

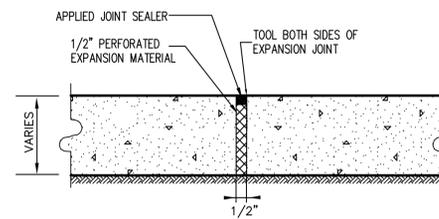


2' CONCRETE ROLL CURB & GUTTER

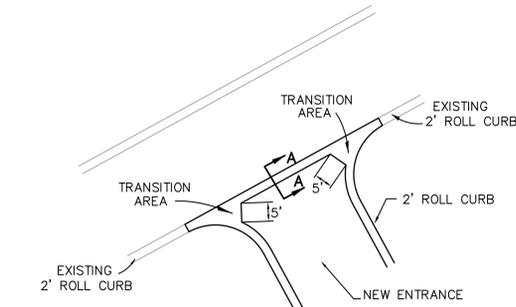
NO SCALE



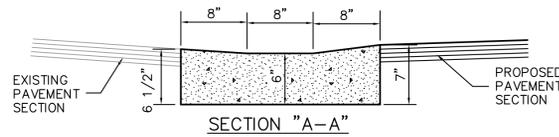
CURB TURN-OUT DETAIL



EXPANSION JOINT DETAIL

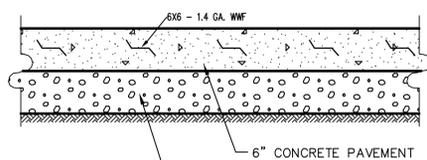
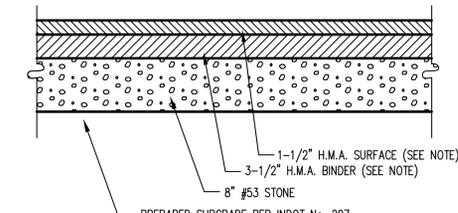


VALLEY GUTTER AND SECTION (ROLL CURB)

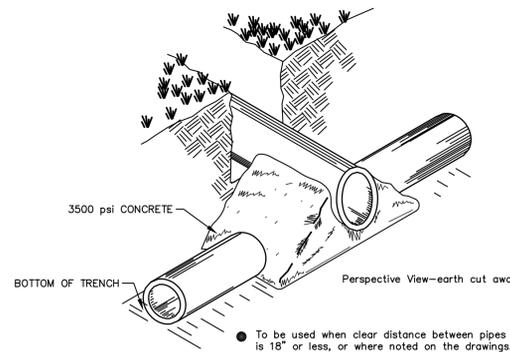


TYPICAL PAVEMENT SECTION

NOTE: CONTRACTOR TO CHECK SOILS REPORT TO VERIFY MINIMUM PAVEMENT THICKNESSES.

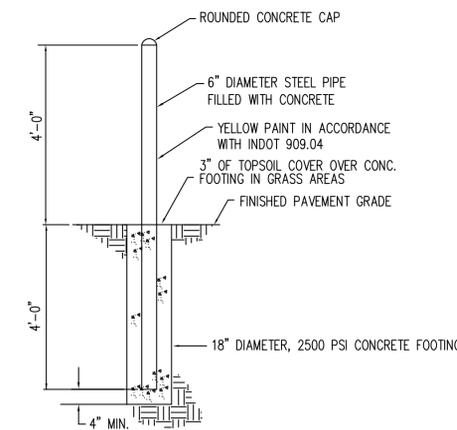


CONCRETE PAVEMENT SECTION

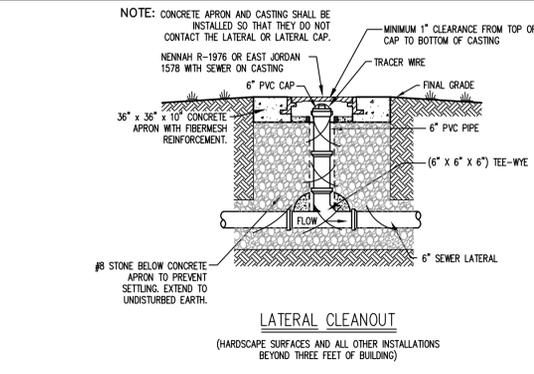


CONCRETE CRADLE

To be used when clear distance between pipes is 18" or less, or where noted on the drawings.

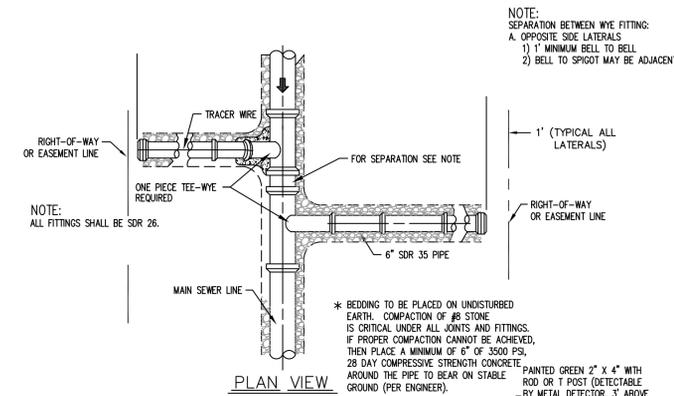


BOLLARD DETAIL

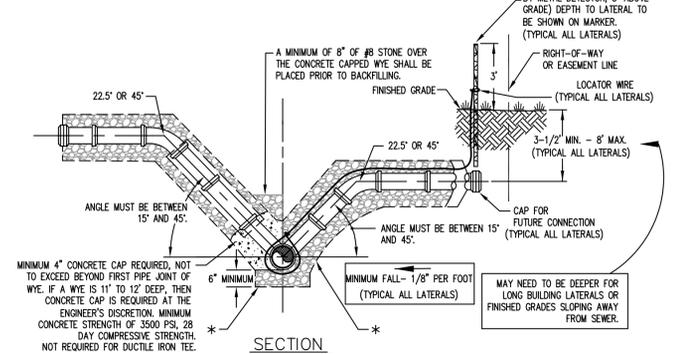


LATERAL CLEANOUT

(HAROSCAPE SURFACES AND ALL OTHER INSTALLATIONS BEYOND THREE FEET OF BUILDING)



PLAN VIEW



SECTION

MORE THAN 20' DEEP LESS THAN 20' DEEP

NOTE: DEPTH OF SERVICE LATERAL SHALL BE MEASURED FROM FINISHED GRADE TO THE TOP OF MAIN SEWER LINE. PIPE REQUIREMENTS PER DEPTH ARE AS FOLLOWS: 3'-19" = SDR-35 20'-25" = SDR-26 26" OR GREATER = SDR-23.5

SERVICE LATERAL DETAIL

ROGER WARD ENGINEERING INCORPORATED
 CIVIL ENGINEERS - LAND PLANNERS - DEVELOPMENT CONSULTANTS
 7474 NOEL ROAD
 INDIANAPOLIS, INDIANA 46278
 (317) 251-1738 (FAX) 251-1823
 www.rw-engineering.com

GENERAL DETAILS

REVISIONS:
 1 2 3 4

DRAWN BY: BED
 DATE: 11/07/2011
 FILE NAME: INT/007/016/C801
 XREF:

INTERBODY, INC.
 PROPOSED
 BUILDING
 1021 KENDALL COURT
 WESTFIELD, INDIANA

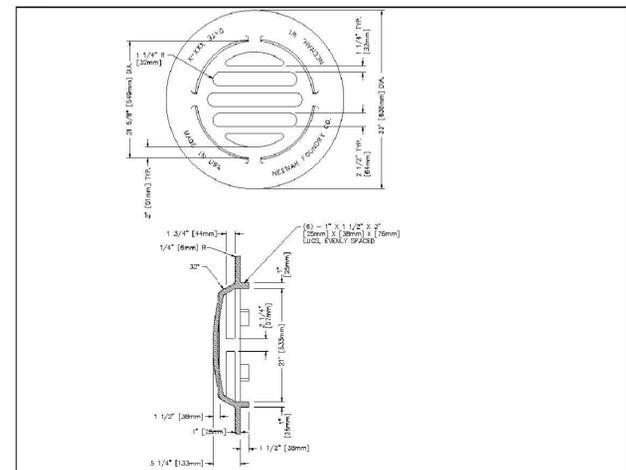
REGISTERED PROFESSIONAL ENGINEER
 No. PE19800489
 STATE OF INDIANA

BY:

DATE: 10-25-2011

SHEET
C801
 OF
 11

JOB#: INT.001

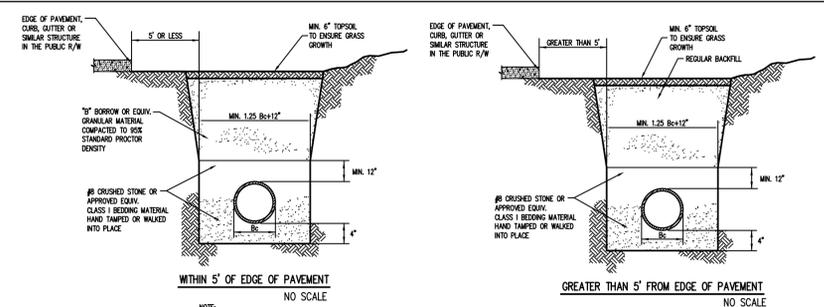


NEENAH	R-4342
EAST JORDAN	6489

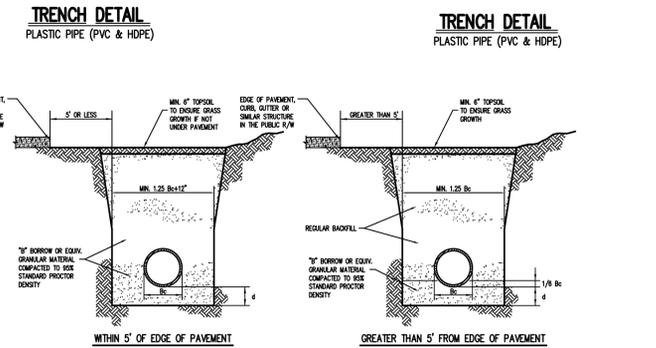
* OR APPROVED BY WESTFIELD PUBLIC WORKS DEPARTMENT
 ** STORM SEWER CASTINGS MANHOLE COVERS, BEEHIVE INLETS, CURB INLETS OR OTHER APPROVED CASTING SHALL HAVE THE FOLLOWING PHRASES CAST IN RECESSED LETTERS TWO (2) INCHES IN HEIGHT:
 A. "STORM SEWER"
 B. "DRAINS TO RIVER" OR "DRAINS TO WATERWAY"
 C. "DUMP NO WASTE"
 D. OTHER PHRASES SHALL REQUIRE APPROVAL OF THE WESTFIELD PUBLIC WORKS DEPARTMENT.

BEEHIVE CURB INLET CASTING

Westfield PUBLIC WORKS
 TOWN OF WESTFIELD, INDIANA
Barbara Lynn Hoff 4/10/06 DATE
 FIGURE ST-10



LEGEND
 B_o = OUTSIDE DIAMETER
 D = INSIDE DIAMETER
 δ = DEPTH OF BEDDING MATERIAL BELOW PIPE

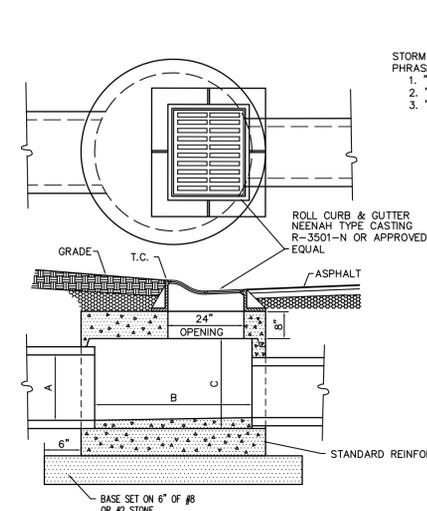


LEGEND
 B_o = OUTSIDE DIAMETER
 D = INSIDE DIAMETER
 δ = DEPTH OF BEDDING MATERIAL BELOW PIPE

DEPTH OF BEDDING MATERIAL BELOW PIPE

D	δ (MIN)
27" & SMALLER	3"
30" TO 48"	4"
60" & LARGER	6"

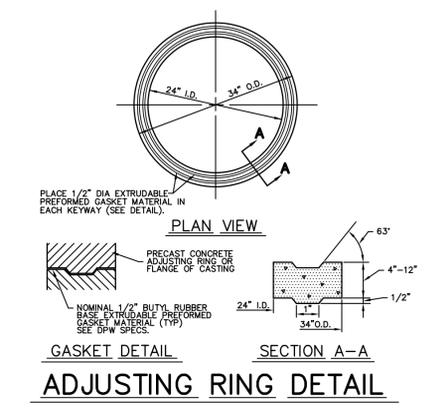
TRENCH DETAIL
 REINFORCED CONCRETE PIPE (RCP)



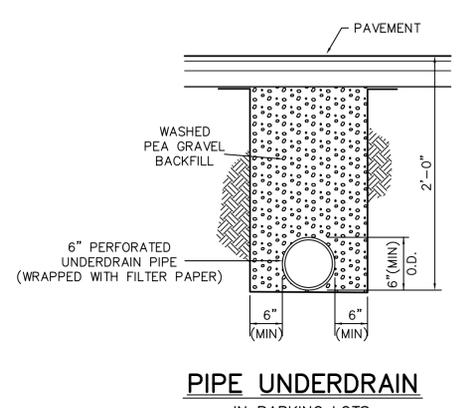
DIMENSIONS (INCHES)

A (MAX)	B	B	C
(MAX)	INVERT	INVERT	(MIN)
	0-45 DEG	45-90 DEG	
12	48	48	18
15	48	48	21
18	48	48	25
21	48	48	28
24	48	60	31
27	60	60	34
30	60	60	38
33	60	72	41
36	60	72	44
42	60	72	50

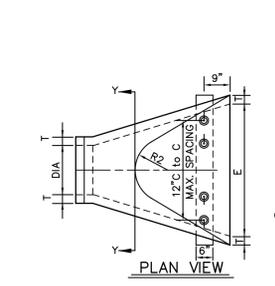
SPECIAL ROLL CURB INLET
 NO SCALE
 STRUCTURES 103 & 105



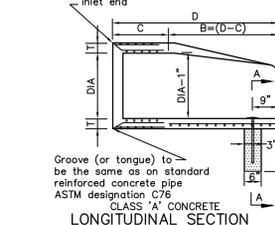
ADJUSTING RING DETAIL



PIPE UNDERDRAIN
 IN PARKING LOTS



SLOPE DETAIL



PRECAST CONCRETE END SECTION

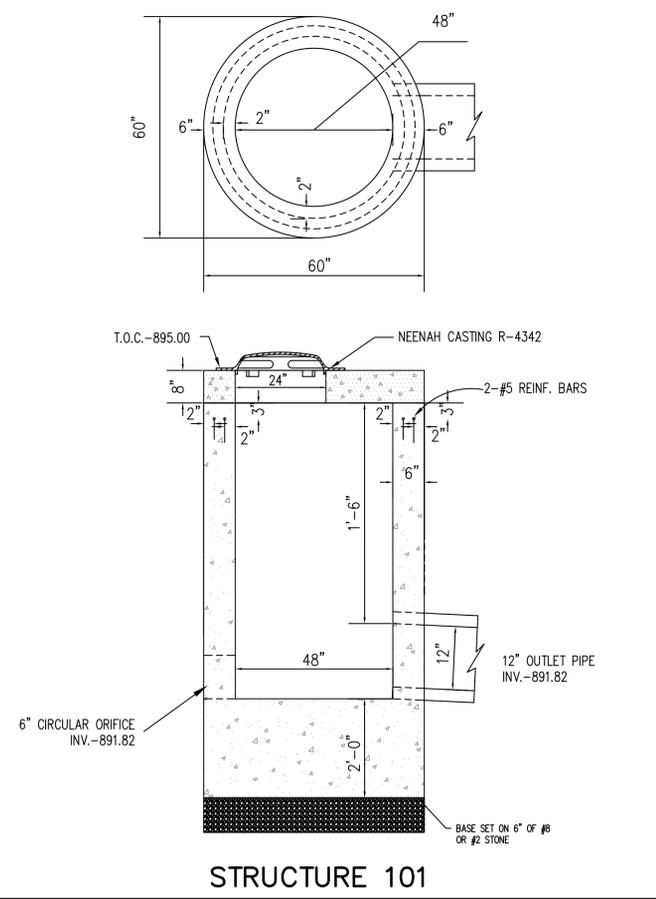
DIMENSIONS OF CONCRETE END SECTIONS FOR ROUND PIPE

DIA	T (MIN)	A*	C*	D*	E*	K	R ₁	R ₂	APPROX. WEIGHT
12"	2"	5"	4'-3"	6'-2"	2'-0"	1.3	10 1/8"	9"	800
15"	2 1/4"	7"	4'-0"	6'-3"	2'-6"	1.5	12 1/2"	11"	1,100
18"	2 1/2"	11"	4'-1"	6'-2"	3'-0"	1.8	15 1/2"	12"	1,300
21"	2 3/4"	11"	3'-6"	6'-3"	3'-6"	2.1	16 1/8"	13"	1,500
24"	3"	1'-0"	2'-8"	6'-3"	4'-0"	2.3	16 3/16"	14"	1,800
27"	3 1/4"	1'-1"	2'-5"	6'-3"	4'-6"	2.6	18 1/2"	14 1/2"	2,100
30"	3 1/2"	1'-2"	1'-10"	6'-3"	5'-0"	2.9	18 3/16"	15"	2,400
33"	3 3/4"	1'-3"	3'-6"	6'-3"	5'-6"	3.1	18 1/2"	17 1/2"	4,100
36"	4"	1'-5"	3'-1"	8'-3"	6'-0"	3.4	23 3/4"	20"	4,200
48"	5"	2'-0"	2'-2"	8'-2"	7'-0"		28 1/8"	22"	6,500

* TOLERANCE +/- 1"

PRECAST CONCRETE END SECTION

STRUCTURES 102 & 104



STRUCTURE 101

EARTHWORK

1. SCOPE OF WORK

A. Extent: The work required under this section consists of all excavating, filling, rough grading and related items necessary to complete the work indicated on the drawings and described in the specifications. The Contractor shall notify in writing the owners and the Engineer of any changes, errors or omissions found on the plans or in the field before work is started or resumed.

1. In general, the items of work to be performed under this section shall include clearing and grubbing, removal of trees and stumps (where required), protection of trees to remain, stripping and storage of topsoil, fill compaction and rough grading of entire site.

2. Excavated material that is suitable may be used for fills. All unsuitable material and all surplus excavated material not required shall be removed from the site. The location of dump and length of haul shall be the Contractor's responsibility.

3. Provide and place any additional fill material from off the site as may be necessary to produce the grades required. Fill obtained from off site shall be of kind and quality as specified for each use, and the source approved by the Owner.

4. The Contractor shall accept the site as he finds it and shall remove all trash, rubbish and debris from the site prior to starting excavation.

B. Work not included: The following items of related work are specified and included in other sections of these specifications:

- 1. Excavation, grading and backfilling for utility lines
2. Storm drainage systems
3. Sanitary sewer systems
4. Streets and paving
5. Water supply system

2. BENCH MARKS

1. Maintain carefully all bench marks, monuments and other reference points, if disturbed or destroyed, Contractor shall contact engineer. Replacement shall be at Contractor's expense.

3. REMOVAL OF TREES

A. Remove all trees and stumps from area to be occupied by road and surfaced areas. Removal of trees outside these areas shall only be done as noted on drawings or approved by the Owner.

B. All brush, stumps, wood and other refuse from the trees shall be removed to disposal areas off of the site. Disposal by burning shall not be permitted unless proper permits are obtained (where applicable). The location of on-site bury pits shall be approved by the owner and the Engineer if permitted.

4. PROTECTION OF TREES

A. General Protection: The Contractor shall be responsible for the protection of tops, trunks and roots of existing trees on the project site that are to remain. Existing trees subject to construction damage shall be boxed, fenced or otherwise protected before any work is started; do not stockpile within branch spread. Remove interfering branches without injury to trunks and cover scads with tree paint.

5. HANDLING OF TOPSOIL

A. Remove all organic material from the areas to be occupied by buildings, roads, walks and parking areas. Pile and store topsoil at a location where it will not interfere with construction operations. Topsoil shall be reasonably free from subsoil, debris, weeds, grass, stones, etc.
B. After completion of site grading and subsurface utility installation, top soil shall be replaced in areas designated on the erosion control plan for seeding and/or sod. Any remaining topsoil shall be used for finished grading around structures and landscaping areas.

6. DISPOSITION OF UTILITIES:

A. Rules and regulations governing the respective utilities shall be observed in executing all work under this section.
B. If active utilities are encountered but not shown shown on the drawings, the Engineer shall be advised before work is continued.
C. Inactive and abandoned utilities encountered in excavating and grading operations shall be reported to the Engineer. They shall be removed, plugged or capped as directed by the Utility Company or the Engineer.
D. It shall be the responsibility of each contractor to verify all existing utilities and conditions pertaining to his phase of the work. It shall also be the contractor's responsibility to contact the owners of the various utilities before work is started.

7. SITE GRADING:

A. Grades: Contractor shall perform all cutting, filling, compacting of fills and rough grading required to bring entire project area to grade as shown on the drawings.
B. Rough Grading: The tolerance for paved areas shall not exceed 0.10 feet plus or minus above the established subgrade. All other areas shall not exceed 0.10 feet plus or minus the established grade. All banks and other breaks in grade shall be rounded at top and bottom.
C. Compaction Requirements:
1. All areas supporting footings and paved areas shall be compacted to at least 95% maximum dry density (ASTM D-1557).
2. All fill below building slab, adjacent to foundations and over foundations shall be compacted to 93% maximum dry density (ASTM D-1557).

8. EARTH WORK BALANCE

A. The Contractor shall confirm all earthwork quantities prior to start of construction. If an excess or shortage of earth is encountered, the Contractor shall confirm with the Owner and Engineer the requirements for stockpiling, removal or importing of earth.

B. Minor adjustments to the grades may be required to earthwork balances when minor excess material or shortages are encountered. It is recognized by the parties hereto that the calculations of the Engineer in determining earthwork quantities shall be accomplished in accordance with the American Society of Civil Engineers Standards for such calculations. Further, that these calculations are subject to the interpretations of soil borings as the physical limits of the various soil types, the allowable variation in finish grade and compaction permitted the contractor, and that all of these parameters may cause either an excess or shortage of actual earthwork materials to complete the project. If such an actual minor excess or shortage of materials occurs, the contractor shall contact the Engineer to determine if adjustment can be made to correct the imbalance of earth.

9. TESTING

A. Contractor shall hire at Contractor's expense an independent soil testing service to assure soil compaction with scope of testing to be approved by Engineer. Copies of test results shall be submitted to the Engineer.

SANITARY SEWER SYSTEMS

1. SCOPE OF WORK

A. The work under this section includes all sanitary sewers, manholes, cleanouts and related items including excavating and backfilling, necessary to complete the work shown in the drawings, starting five feet outside the building walls. The ends of sewers shall be tightly plugged or capped at the terminal points, and connected to buildings, pending the connecting of all such lines to the building drain as specified on the plumbing and architectural drawings. The set of all openings shall be on the job site at all times.

2. MATERIALS

A. Polyvinyl Chloride Pipe (PVC)

1. 8"-15" PVC pipe shall be SDR 35 and conform to ASTM D3034, with a minimum cell classification of 12454-B or 12454-C. Greater than 15" PVC pipe shall conform to ASTM F679, with a minimum cell classification of 12454-C.

2. All fittings and joints shall be compression type flexible gasketed joints, and manufactured and installed in accordance with the pipe manufacturer's specifications. No solvent cement joints shall be allowed. All fittings shall be heavy walled fittings.

3. Pipes shall have a minimum pipe stiffness of 46 psi when measured at 5K vertical stress deflection and tested in accordance with ASTM D 2412 and a minimum tensile strength 34.50 MPa.

B. Ductile Iron Pipe

1. Ductile iron (DI) pipe must meet ASTM A-746 and ANSI/AWWA A21.51/C151 with exterior bituminous coating per ANSI/AWWA A21.51/C151 and ANSI/AWWA A21.10/C110. The interior surfaces of all pipe, fittings, and adapters shall be lined with factory applied Protecto 401 ceramic epoxy lining, or approved equal. Pipe must be marked per ASTM A 746.

2. Mechanical, push on or restrained joints shall be provided. Flanged joints are not allowed for buried applications. Mechanical joints and accessories shall conform to AWWA C111/ANSI A21.11. The bolts and nuts shall be corrosion resistant high strength alloy steel. Push-on type joints shall conform to ANSI A21.11/AWWA C111. Fittings shall comply with ANSI Specification A21.10/AWWA C110. Restrainted joints shall be manufactured in accordance with pipe manufacturer's requirements. Locking rings, tabs, inserts, or gaskets with inset steel grips may all be used for gravity sanitary sewer applications. Flange gaskets shall be standardized for the type of pipe and joint specified, and shall comply with ANSI A21.10/AWWA C110.

C. Manholes

1. Precast reinforced concrete manhole sections and steps and concrete adjusting rings shall conform to ASTM C-443 per latest revision. Exterior of manhole shall be waterproofed with Bismalec material. Manhole sections shall not be installed until at least five days after having been cast unless permitted in writing by the Department.

2. Castings shall be of uniform quality, free from blow holes, porosity, hard spots, shrinkage distortion or other defects. They shall be smooth and well-cleaned by shot-blasting or by some other approved method. They shall be coated with asphalt paint which shall result in a smooth coating, tough and tenacious when cold, not tacky or brittle. They shall be gray iron meeting ASTM A-48 latest revision. Manhole covers for sanitary sewer shall be Neenah Type R-1077-A w/R-1712-B-SP Frame w/Self-Sealing application.

3. Joints - Manhole sections shall be joined with a rubber gasket per ASTM C 443, and 1/2" diameter butyl rubber rope sealant per ASTM C 950.

4. Manholes shall include steps. Manhole steps shall conform to the requirements of ASTM C 478 and be manufactured using steel reinforcement in polypropylene plastic. Steps shall be factory installed when the manhole is manufactured.

5. Manholes shall be bedded on a granular foundation. The granular foundation shall be compacted with vibratory tamps.

6. Manholes adjusting rings shall only be concrete. They shall conform to ASTM C 478. Minimum thickness of concrete ring shall be four (4) inches.

7. Castings for manholes shall be Neenah R-1713-B-SP or East Jordan 1027-(AGSM). All castings shall have a machined bearing surface with Type F concealed pickholes. The words "Sanitary Sewer" and "City of Westfield" must be cast in recess letters two inches in height onto solid lid covers. Castings shall be manufactured in accordance with ASTM A 48 - Class 35B, and have a minimum tensile strength of 35,000 psi.

3. APPLICATION

A. Permits and Codes - The intent of this section of the specifications is that the contractor's bid on the work covered herein shall be based upon the drawings and specifications but that the work shall comply with all applicable codes and regulations as amended by any waivers. Contractor shall furnish all bonds necessary to get permits for cuts and connections to existing sewers. The Contractor shall be responsible for obtaining or verifying all permits for all or portions of this project prior to starting construction. The Contractor shall notify the local or county inspector or utility superintendent 48 hours prior to commencement of sanitary construction.

B. Local Standards - The term "local standards" as used herein means the standards of design and construction of the respective municipal department or utility company.

C. Existing Improvements - Maintain in operating condition all active utilities, sewers and other drains encountered in the sewer installation. Repair to the satisfaction of the owner any damage to existing active improvements.

D. Workmanship - To conform to all local, state and national codes and to be approved by all local and state agencies having jurisdiction.

E. Trenching - Lay all pipe in open trenches, except when the local authority gives written permission for tunneling or jacking of pipe. Open trenches shall be sufficiently a distance of 1.5 feet beyond the right-of-way line and within 5'-8" of the existing ground surface. The ends shall be plugged and sealed with a water tight cap. Sewer service lines shall be marked with a 2"x4" painted green and extending from the lateral end to 3' above grade.

F. Special Supports - Whenever, in the opinion of the Engineer, the soil at or below the pipe grade is unsuitable for supporting sewers and appurtenances specified in this section, such special support, in addition to those shown or specified, shall be provided as the Engineer may direct, and the contract will be adjusted.

G. Backfilling - No. 8 crushed stone or No. 8 fractured grade aggregate shall be used. Bedding material shall be placed and compacted prior to laying the pipe. Hauling material shall be shovel sliced or otherwise carefully placed and worked or hand tamped to the springline to ensure compaction and complete filling of voids. The initial backfill shall be added in six inch lifts worked in for compaction.
Material Pipe size (in) Depth Below Barrel, (in) Depth Above Top of Pipe, (in)
Flexible 6 or less 4 4
Pipe 8 to 15 4 12
18 and larger 8 12

Material Pipe size (in) Depth Below Barrel, (in) Depth Above Top of Pipe, (in)
Rigid 8 to 16 4 6
Pipe 18 and larger 8 6

Final Backfill - For excavation within the right-of-ways, final backfill requirements shall be in accordance with the Department of Metropolitan Developments' Regulations For Cuts Within The Public Right-of-Way.

All other backfill requirements are as follows: Within 5' of pavement, curbs, gutters, or similar structures trenches shall be backfilled with Structural "B-Barrow" for structural installations per INDOT Standard Specifications - Section 211. Backfill shall be compacted to achieve a minimum of 95% Standard Proctor Dry Density per INDOT Section 203.23.

Backfill shall be added and compacted in 12 in. lifts by mechanical tampers. Maximum compaction depth shall not exceed 8 ft. Backfill outside of 5' of grade of pavement, curbs, gutter or similar structures shall be backfilled with clean fill material free of rocks larger than 6 in. in diameter, frozen lumps of soil, wood, or other extaneous material.

H. Flow Channels - The flow channels within manholes shall be an integral part of the precast base. The channels shall be shaped and formed for a clean transition with proper hydraulics to allow the smooth conveyance of flow through the manhole. The bench wall shall be formed to the crown of the inlet and outlet pipes to form a U shaped channel. The bench wall shall slope back from the crown at 1/2 inch per foot to the manhole wall. No brick, rock or sand fillers will be allowed.

I. Infiltration - The contractor shall furnish necessary equipment to test sewers for infiltration. Infiltration tests shall not exceed the Local Standards. All sanitary sewer lines upon completion will be required to pass a low pressure air test, unless otherwise directed by the City Engineer. Said test shall be conducted according to NCP1 Standard Method, and shall be witnessed by an inspector authorized by the City Engineer. Infiltration under test shall not exceed 100 gallons per inch of inside diameter of sewer pipe one mile of sewer in 24 hours and is inclusive of all appurtenances within the section being tested such as manholes, house connections, etc. Any portions not passing said tests for acceptance shall be repaired or replaced, including re-excavation and backfill, at the Contractor's expense.

J. Flushing Sewers - Flush all sanitary sewers except building sewers with water to obtain free flow through each line. Remove all silt and trash from appurtenances just prior to acceptance of work.

K. Plastic Sewer Pipe Installation - Plastic sewer pipe shall be installed in accordance with ASTM D2221 per latest revision, and no plastic pipe shall exceed an 11 point mandrel test deflection of 3%. All sewer mains shall be lapped at the time the mandrel test is conducted. All mains shall be true to alignment and grade.

L. Storm Water Connections - No roof drains, footing drains and/or surface water drains may be connected to the sanitary sewer systems, including temporary connections during construction.

M. Waterline Crossing - Water and sewer line crossings and separations shall be in accordance with Ten States Standards and local and state codes. Waterlines and sanitary sewers shall maintain a minimum of 10 foot horizontal separation and a minimum 18 inches of clearance between pipes at crossings. Otherwise, sanitary sewer within 10 feet of waterlines shall be constructed of water works grade Ductile Iron Pipe with mechanical joints and fittings. One length of sewer pipe should be centered at the waterline crossing so that no joint is closer than 10 feet to the waterline.

N. Utilities - It shall be the responsibility of each contractor to verify all existing utilities and conditions pertaining to his phase of the 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 and the engineer of any changes, errors or omissions found on these plans or in the field before work is started or resumed.

O. Service Laterals - Individual building service lines shall be 6 inches in diameter and of PVC material. Material requirements are in the table below

Table with 3 columns: Material, Designation, Classification. Row 1: PVC, ASTM D 3034 SDR26, CELL CLASS 12454 OR 12364.

Service lines shall be connected to the main sewer by a wye at locations generally shown within these plans. Service lines shall be extended a distance of 1.5 feet beyond the right-of-way line and within 5'-8" of the existing ground surface. The ends shall be plugged and sealed with a water tight cap. Sewer service lines shall be marked with a 2"x4" painted green and extending from the lateral end to 3' above grade.

P. New Sanitary Sewer Main Construction - Contractor shall record length and dimensions of each service line stub from nearest downstream manhole measure along the sanitary sewer main. The locations of manholes and service lines along with any other construction changes are to be incorporated on the original construction drawings as as-built locations and submitted to the Engineer as soon after completion of construction as possible, not to exceed 30 days.

Q. Gravity Sanitary Sewer Testing - All sanitary sewers 24 inches and less shall be air tested by means of a low pressure air test per Section 602.03 of the City of Indianapolis Sanitary Sewer Standards. All sewers larger than 24 inches shall be joint tested per Section 602.04.

All sewers 24 inches and less shall be tested by means of a low-pressure air test to detect damaged piping and/or improper joining. Testing shall be done per ASTM F 1417 flexible and semi-rigid pipe and ASTM C 924 for RCP.

All sewers greater than 24 inches shall be joint tested using air or water tight low pressure joints shall be tested. Testing shall be per ASTM C 1103 and per City of Indianapolis Sanitary Sewer Standards and Specifications.

R. Force Main Testing - All force mains for lift stations and common force mains in low pressure systems shall be tested for leakage by a Hydrostatic Leak Test per Section 603.03.

The hydrostatic leak test shall be done in accordance with AWWA standards based on force main material, in accordance with ASTM E 1003 and per Section 603.03.

S. Manhole Testing - All manholes shall be tested for infiltration by means of a negative air (vacuum) pressure test per Section 604.04 of the City of Indianapolis Sanitary Specifications.

All manholes shall be tested for infiltration by means of a Negative Air (Vacuum) Pressure Test. Testing shall be done per ASTM C 1244.

All internal chimney seals shall be tested using a leakage test. Testing shall be performed per Section 604.05.

STORM SEWER SYSTEMS

1. SCOPE OF WORK

The work under this section includes all storm sewers, storm water inlets, and related items, including all excavating and backfilling, necessary to complete the work shown on the drawings. All work and materials shall meet the local governing authorities specifications.

2. MATERIALS

A. Storm Sewers

1. Reinforced concrete sewer pipe shall conform to ASTM C-76 latest revision, and shall be installed in accordance with ASTM C-443 latest revision when storm pipe is continuously submerged in water.

2. Aluminized type 2 corrugated steel pipe shall conform to ASTM C-76 latest revision, and shall be installed in accordance with AASHTO M36 (type 1) with 2 2/3 x 1/2 corrugations for 12" and 15" diameters. Type 2 corrugations for 3/4" x 7 1/2 corrugations for 18" diameter and larger). The pipe shall be formed from an aluminized steel type 2 coil that conforms to AASHTO M274. The minimum gage thickness of the pipe shall be as follows:

Table with 2 columns: Diameter, Gage. Row 1: 12" - 36", 16. Row 2: 18" - 48", 14. Row 3: 24" - 84", 12.

3. High density polyethylene pipe shall perform to AASHTO M252 and M294 Type S specifications, latest revision, and shall have material specifications conforming to ASTM D1248 or D3350, latest revision.

4. Polyvinyl Chloride (PVC) profile wall gravity flow storm sewer pipe shall be the integral wall bell and spigot type with elastomeric seal joints and smooth interior in accordance with AASHTO M304. A minimum Cell Class of 12454C or 12364C as set forth by ASTM D 1784 shall be required.

Smoothwall PVC pipe shall be in accordance with ASTM F 679 or AASHTO M 278 for the specified sizes, and shall have a minimum Cell Class of 12364C for pipes meeting specification ASTM F 679 or 12454C for pipes meeting specification AASHTO M 278. Cell class properties shall be set forth by ASTM D 1784.

B. Manholes

1. Precast reinforced concrete manhole sections and steps shall conform to ASTM C-478 latest revision.

2. Casting shall be of uniform quality, free from blow holes, porosity, hard spots, shrinkage distortion or other defects. They shall be smooth and well cleaned by shot-blasting or by some other approved method. They shall be coated with asphalt paint which shall result in a smooth coating, tough and tenacious when cold, not tacky or brittle. They shall be gray iron meeting ASTM A-48 latest revision.

3. Joints - Manhole sections shall be joined with rubber type gaskets. The rubber type gaskets shall meet ASTM C-443 latest revision. When manhole and storm pipe are continuously in water.

C. SUBDRAINS

1. Perforated plastic pipe subdrains shall conform to ASTM F-405, AASHTO M-252 (4 to 10" pipe).

3. APPLICATION

A. Permits and Codes - The intent of this section of the specifications is that the contractor's bid on the work covered herein shall be based upon the drawings and specifications but that the work shall comply with all applicable codes and regulations as amended by any waivers. Contractor shall furnish all bonds necessary to get permits for cuts and connections to existing sewers. The Contractor shall notify the local or county inspector or utility superintendent 48 hours prior to commencement of sanitary construction.

B. Local Standards - The term "Local Standards" as used herein means the standards of design and construction of the respective municipal department or utility company.

C. Existing Improvements - Maintain in operating condition all active utilities, sewers and other drains encountered in the sewer installation. Repair to the satisfaction of the owner any damage to existing active improvements.

D. Workmanship - To conform to all local, state and national codes and to be approved by all local and state agencies having jurisdiction.

E. Trenching - Lay all pipe in open trenches, except when the local authority gives written permission for tunneling. Open trenches shall be sufficiently a distance of 1.5 feet beyond the right-of-way line and within 5'-8" of the existing ground surface. The ends shall be plugged and sealed with a water tight cap. Sewer service lines shall be marked with a 2"x4" painted green and extending from the lateral end to 3' above grade.

F. Special Supports - Whenever in the opinion of the Engineer the soil at or below the pipe grade is unsuitable for supporting sewers and appurtenances specified in this section, such special support, in addition to those shown or specified, shall be provided as the Engineer may direct, and the contract will be adjusted.

G. Backfilling - For a depth of at least 12 inches above the top of the pipe, backfill with earth or granular material free from large stones, rock fragments, roots or sod. Tamp this backfill thoroughly, taking care not to disturb the pipe. For the remaining trench depth, backfill with earth or granular material containing stones or rocks not larger than 4 inches. Backfill under and within 5' of paved areas shall be granular material only and shall conform to local standards - thoroughly compacted by approved methods.

H. Manhole Inverts - Construct manhole flow channels of concrete sewer pipe or brick, smoothly finished and of semicircular section conforming to the inside diameter of the connecting sewers. Make changes in size or grade gradually and changes in direction by true curves. Provide such channels for all connecting sewers at each manhole.

I. Subdrains - All subdrains shall be of the size shown on the plans and shall be constructed to the grades shown. All drains constructed off-site as part of the outlet drain will be located as shown.

J. Utilities - It shall be the responsibility of each contractor to verify all existing utilities and conditions pertaining to his phase of the 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 and the engineer of any changes, errors or omissions found on these plans or in the field before work is started or resumed.

K. Expansion Joints - Shall be 1/2 inch thick premoled at ends of all returns and at a maximum spacing of 100 feet.

L. Concrete Joints - Unless otherwise provided, contraction joints shall be sawed joints spaced 20 feet on center.

M. Finish - Tamp and screed concrete as soon as placed, and fill any honey combed places. Finish square corners to 1/4" radius and other corners to radii shown.

N. Concrete Walks and Exterior Steps
1. Slopes - Provide 1/4 inch per foot cross slope. Make adjustments in slopes at work, and dimensions as necessary to provide proper drainage.
2. Dimensions - Walks and steps shall be one course construction and of widths and details shown on the drawings.
3. 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" expansion joints where sidewalks intersect, and at a maximum spacing of 48 feet between expansion joints.

J. Curing Concrete - Except as otherwise specified, cure all concrete by one of the methods described in Section 501.17 of the Indiana Department of Transportation Specifications, latest revision.

1. Portland cement - Conforming to ASTM C-150, Type I or Type IIIA.

2. Aggregates: Conforming to ASTM C-33

3. Water - Shall be clear and free from injurious amounts of oils, acids, alkalis, organic materials or other deleterious substances.

B. Welded Steel Wire Fabric - Where required for concrete reinforcement shall conform to ASTM A185.

C. Premoled Joint Filler - Shall be of non -extruding type meeting ASTM D-544 except that premoled joint filler used in concrete walk construction may be either non-extruding or resilient.

D. Bituminous Pavement Materials - All materials proposed for the construction of bituminous pavements shall comply with the Indiana Department of Transportation specifications, per latest revision.

E. Compacted Aggregate Subbase: Shall be crushed stone or gravel. Crushed gravel shall be a minimum of 35% crushed material. Chert shall be limited to a maximum of 8% of the total. Material shall be free from an excess of flat, elongated, finely laminated, soft or disintegrated pieces, and shall be free from fragments coated with dirt. Compacted aggregate shall be graded as follows:

Table with 3 columns: SEVE SIZE, % PASSING. Row 1: 1-1/2", 100. Row 2: 3/4", 80-90. Row 3: 3/8", 70-90. Row 4: 1/2", 55-80. Row 5: 3/16", 35-60. Row 6: 1/4", 25-50. Row 7: 1/8", 12-30. Row 8: #200, 10.

**COMMERCIAL GRADE #53 AGGREGATE MAY BE USED IN PARKING GARAGE.

NOTE: MINIMUM COVER OVER TOP OF ALL WATERMANS TO BE 54" FROM FINISH GRADE.

Table with 3 columns: SEVE SIZE, % PASSING. Row 1: 1-1/2", 100. Row 2: 3/4", 80-90. Row 3: 3/8", 70-90. Row 4: 1/2", 55-80. Row 5: 3/16", 35-60. Row 6: 1/4", 25-50. Row 7: 1/8", 12-30. Row 8: #200, 10.



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SPECIFICATIONS

DRAWN BY: RED
DATE: 11/07/2011
FILE NAME: INT/001/096/030
XREF:

REVISIONS:
1 2 3 4

INTERBODY, INC.
PROPOSED
BUILDING
1021 KENDALL COURT
WESTFIELD, INDIANA



BY:
DATE: 10-25-2011

SHEET
C901
OF
11

JOB#: INT.001

LANDSCAPE SPECIFICATIONS

LANDSCAPE SPECIFICATIONS: These specifications cover the furnishing of labor, plants, equipment, and materials to perform landscape operations in connection with this construction project at the locations shown on the landscape drawing.

LANDSCAPE MATERIALS:

FERTILIZER: Granular non-burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer, 20% nitrogen, 10% phosphoric acid, and 5% potash by weight or similarly approved composition.

PLANTING BACKFILL SOIL: Backfill plant pits with the following topsoil mixture: 1 part topsoil, 1 part soil amendment and 1 part soil from excavation. Topsoil: ASTM D5268, PH Range of 5.5 to 7, MIN. 4 percent organic material, free of stones 1 inch and larger. Soil Amendment: Sphagnum peat moss or EPA rated class IV compost. Prepare planting backfill soil on site. Notify landscape architect/engineer one week prior to commencing planting to arrange site inspection to conform sufficient quantities of imported topsoil, compost and fertilizer are on site for planting operations.

PLANT MATERIALS: Provide trees and shrubs as indicated. Comply with sizing and grading standards of "American Standard for Nursery Stock". Provide only sound, healthy vigorous plants free from defects, disfiguring knots, sun scald injuries, frost cracks, plant diseases, insects or any other form of disease or infestation. All plants shall have fully developed form without voids or open spaces.

PLANTING BED MULCH: 3 inches of Premium grade shredded hardwood mulch (Dark Tan in color) over pre-emergent weed control granules.

PROJECT EXECUTION:

SUBSURFACE UTILITIES: Contractor shall determine utility line locations prior to commencing work. Any conflicts between utility locations, excavation and/or landscape operations shall be brought to Owner's attention prior to commencing excavation and/or grading work. Contractor assumes responsibility for any utility damage resulting from landscape operations. CONTRACTOR SHALL NOTIFY UTILITY LOCATE SERVICE (1-800-382-5544) A MINIMUM OF TWO WORKING DAYS PRIOR TO EXCAVATION.

PLANTING EXCAVATION: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage or obstructions, notify owner before planting. See planting details for planting, pruning and staking requirements. All plant beds including tree rings found in lawn areas shall have a 4" spade edge, NO EDGING.

SEEDED LAWN: Complete all other landscape plantings, mulching and staking prior to seeding lawn areas. Apply fertilizer at a rate equal to 4 pounds of actual nitrogen per 1,000 square feet. Spread topsoil over lawn areas to a depth of two inches prior to seed bed preparation. Cultivate soil to a depth of three inches prior to seeding. Seed bed shall be in a firm but uncompacted condition with a relatively fine texture at time of seeding. Apply Warren's Turf Type Tall Fescue, Frontrunner, at the rate of 7 pounds per 1,000 square feet. Spread weed and seed free straw uniformly over seeded areas and secure to place with emulsified tackifier. Contractor shall maintain seeded lawn for a period of 60 days beyond final acceptance by mowing and watering as required to maintain vigorous growth during establishment period.

PROJECT WARRANTY: Contractor shall warrant trees, shrubs, and plants for a period of one year after date of substantial completion against defects including death and unsatisfactory growth, except for defects resulting from neglect by the Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond installer's control. Remove and replace trees, shrubs or other plants found to be dead or in unhealthy condition during warranty period. Replace trees and shrubs which are in doubtful condition at end of warranty period.

LANDSCAPE NOTES

All species of plant materials and substitutions thereof are subject to acceptance by the City of Westfield Planning Department approval and of the Owner(s) or a representative of the Owner(s).

All plant materials are to be warranted for a period of no less than one year from final acceptance by the Owner(s) or a representative of the Owner(s).

All plant material is to be planted in a manner that ensures its survival. Any environmental or other type of situation that is noted by the landscape Contractor that could potentially injure the plant or shorten its longevity is to be made known to the Owner(s) and potential substitutions or corrections to the situation can be made at no expense to the Contractor.

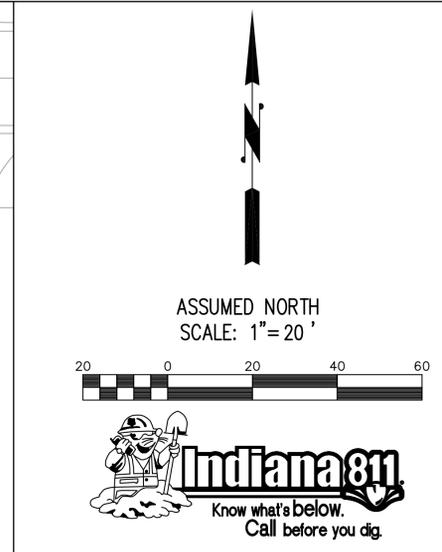
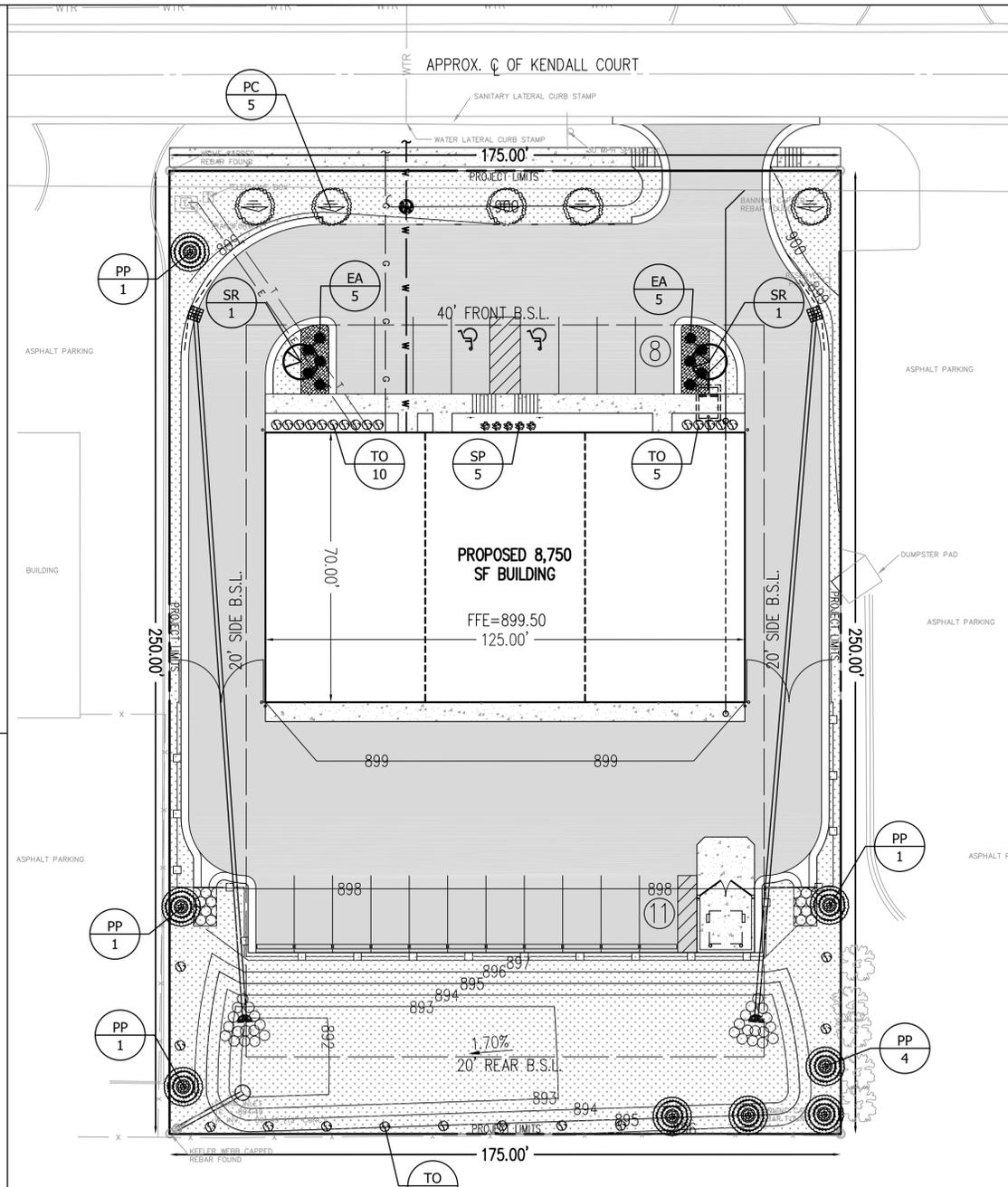
All materials failing the one year warranty period are to be replaced at the expense of the Landscape Contractor.

Any deviation from responsible landscape practices and the City of Westfield Zoning Ordinance will result in the immediate termination of the Landscape Contract and the Contractor will pay all costs associated with the corrections.

All plant material is to come from respectable sources within 100 miles of the site on which it is being installed. If no source for a plant species is available within this area, the project Landscape Architect/Engineer is to be notified immediately to make a determination of possible options.

All plant material is subject to approval by the project Landscape Architect/Engineer prior to installation and may be rejected for reasons of health, aesthetics, size or other reasonable causes.

The Landscape Contractor is responsible for the timely installation of all material in his contract. Should there be a delay due to weather or other unforeseeable, natural circumstances, the timeline will be adjusted.



LEGEND

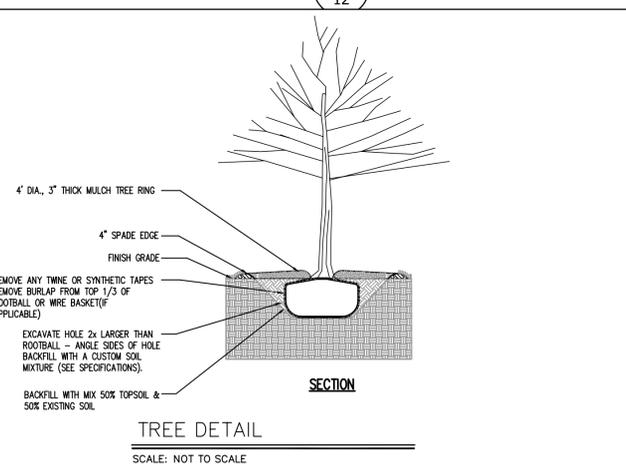
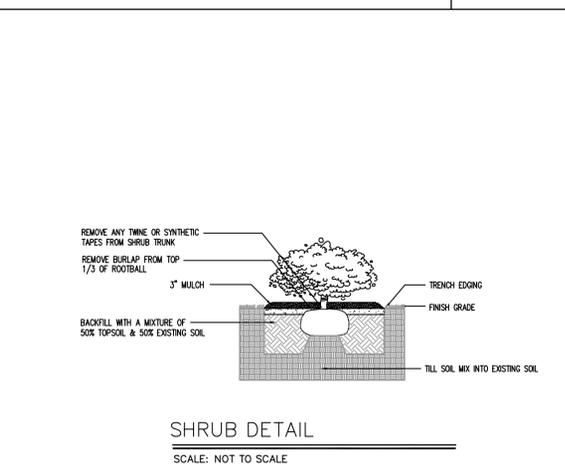
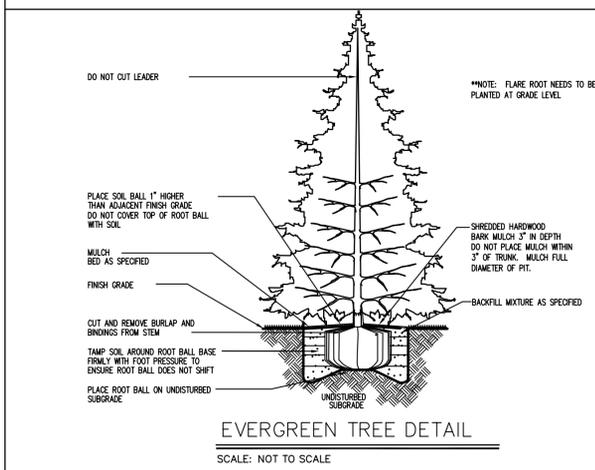
- EXISTING SANITARY SEWER & MANHOLE
- EXISTING STORM SEWER; INLET & M.H.
- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING ELECTRIC/TELEPHONE LINE (AERIAL)
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING UNDERGROUND TELEPHONE LINE
- EXISTING FIRE HYDRANT
- EXISTING VALVE; GAS & WATER
- EXISTING ELECTRIC MANHOLE & TRANSFORMER
- EXISTING TELEPHONE MANHOLE & PEDESTAL
- EXISTING WATER METER
- EXISTING BOLLARDS
- EXISTING AREA LIGHT
- PROPOSED STORM SEWER; INLET, BEE HIVE INLET & M.H.
- PROPOSED ELECTRIC SERVICE
- PROPOSED TELEPHONE SERVICE
- PROPOSED WATER SERVICE
- PROPOSED SANITARY LATERAL
- PROPOSED 6' TALL CHAIN LINK FENCE
- HATCHING DENOTES GRASSED AREAS
- HATCHING DENOTES MULCHED AREAS

ROGER WARD ENGINEERING INCORPORATED
 CIVIL ENGINEERS - LAND PLANNERS - DEVELOPMENT CONSULTANTS
 7474 NOEL ROAD
 INDIANAPOLIS, INDIANA 46278
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 www.rw-engineering.com

LANDSCAPE PLAN

INTERBODY, INC.
 PROPOSED BUILDING
 1021 KENDALL COURT
 WESTFIELD, INDIANA

REVISIONS:
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PLANT MATERIAL SCHEDULE

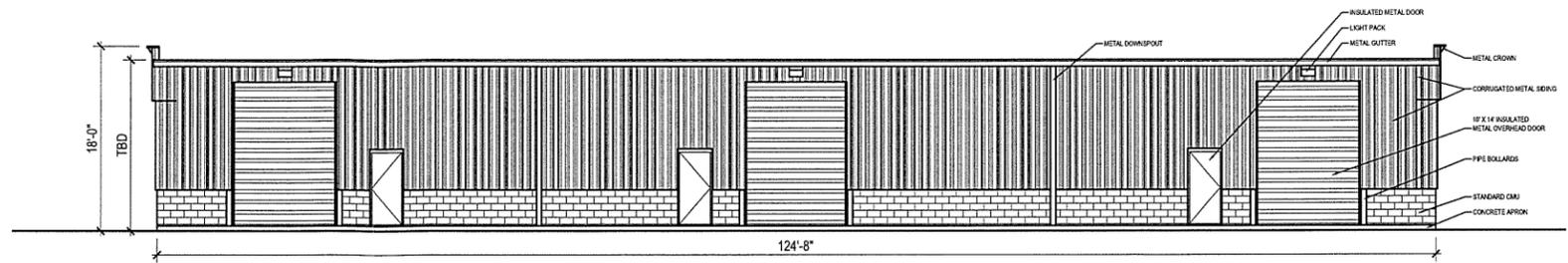
Key	Plant Type	Detail	Size	Qty.	Botanical Name
PC	CLEVELAND PEAR TREE	⊖	2' cal. B + B	5	PYRUS CALLERYANA 'CLEVELAND'
SR	JAPANESE LILAC TREE	⊙	2' cal. B + B	2	SYRINGA RETICULATA
PP	COLORADO SPRUCE	⊗	2' cal. B + B	8	PICEA PLUNGENS
EA	DWARF BURNING BUSH	⊛	18"-24" H/SP #5 CONT.	10	EUONYMUS ALATA COMPACTUS
SP	MISS KIM LILAC	⊙	18"-24" H/SP #5 CONT.	5	SYRINGA PATULA
TO	GLOBE ARBORETAE	⊙	18"-24" H/SP #5 CONT.	27	THUJA OCCIDENTALIS 'WOODWARD'

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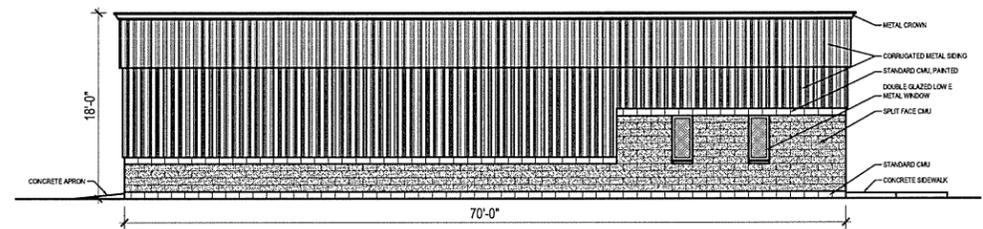
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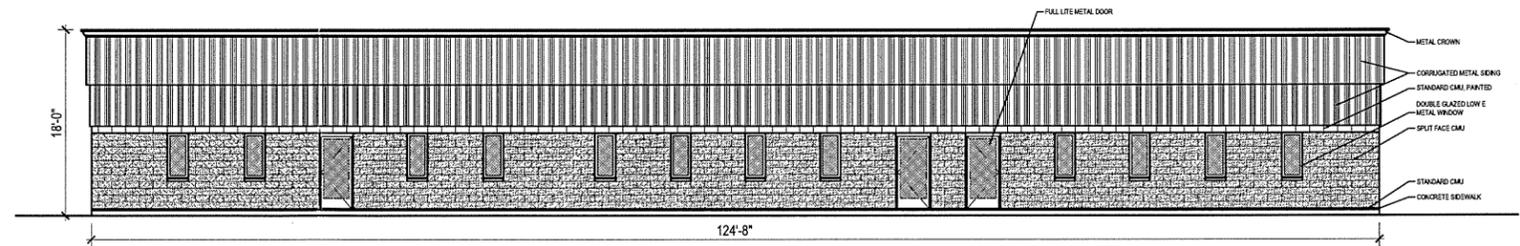
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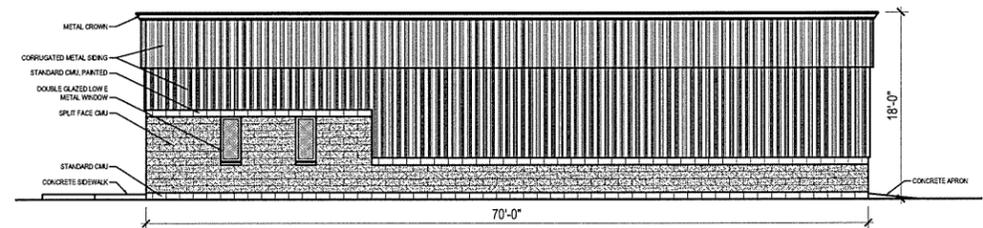
SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



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



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



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

REVISIONS:

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4820 Buttonwood Crescent
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Fax: 317 252-5573
GClark4820@aol.com

GORDON CLARK ARCHITECT AIA

INTERBODY, INC.
PROPOSED
BUILDING
1021 KENDALL COURT
WESTFIELD, INDIANA

DRAWING COMPLETION DATE:
DECEMBER 1, 2011



SHEET
A2.1
BUILDING ELEVATIONS