

ADDENDUM NO. 2
TO THE
DRAWINGS AND SPECIFICATIONS
FOR THE
SOUTH WALNUT STREETScape ANS STORMWATER IMPROVEMENTS PROJECT
PW2012-10

ISSUED FROM: CITY HALL AT THE SHOWERS BUILDING
Post Office Box 100
401 North Morton Street
Bloomington, Indiana 47404

ISSUE DATE: January 9, 2012

Bid DATE: January 12, 2012

This Addendum No.2, to the drawings and specifications shall supplement, amend and become a part of the bidding documents, plans, and specifications. All bids and construction contracts shall be based on these modifications to the original contract documents.

TO ALL BIDDERS BIDDING ON THE ABOVE PROJECT:

All Bidders submitting a Bid on the above Contract shall carefully read this Addendum and give it consideration in the preparation of their Bid.

- I. The following are additional information to be inserted in the Project Manual
 - A. Insert the attached 11 pages which contain inspection reports prepared in 1997 for the Jordan River and Lower Spankers Branch. These are provided for information only and conditions may have changed during the 15 years since the inspections were performed.
 - B. The Contractor is NOT responsible for any fees associated with installing/connecting the water service for the irrigation system as was previously stated in the special conditions for the project.
 - C. The Unit Price Sheet has been modified. The new sheet has separate line items for water meter services on the east side of the box culvert and on the west side of the box culvert.

II. The following are revisions to the Drawings:

A. Contract A Drawings

1. Sheet 2, Drawing G-1: Delete paragraph 10 referencing trees to be provided by the Contractor in its entirety. Trees will now be provided by the City.
2. Sheet 25, Drawing SR1: All references to Thermoplastic lines (P1 to P6 pavement markings) are deleted and replaced with Epoxy lines. All proposed trees (M3) indicated on the drawings are deleted.
3. Sheet 26, Drawing SR2: All references to Thermoplastic lines (P1 to P6 pavement markings) are deleted and replaced with Epoxy lines. All proposed trees (M3) indicated on the drawings are deleted.
4. Sheet 27, Drawing SR3: All references to Thermoplastic lines (P1 to P6 pavement markings) are deleted and replaced with Epoxy lines. All proposed trees (M3) indicated on the drawings are deleted. Tree Grates shown are still to be installed
5. Sheet 28, Drawing SR4: All references to Thermoplastic lines (P1 to P6 pavement markings) are deleted and replaced with Epoxy lines. All proposed trees (M3) indicated on the drawings are deleted.
6. Sheet 29, Drawing SR5: All references to Thermoplastic lines (P1 to P6 pavement markings) are deleted and replaced with Epoxy lines. All proposed trees (M3) indicated on the drawings are deleted.
7. Sheet 30, Drawing SR6: All references to Thermoplastic lines (P1 to P6 pavement markings) are deleted and replaced with Epoxy lines. All proposed trees (M3) indicated on the drawings are deleted.
8. Sheet 32, Drawing PJ2 is deleted and a revised Sheet 32 is attached
9. Sheet 33, Drawing PJ3 is deleted and a revised Sheet 33 is attached
10. Sheet 37, Drawing M4. The Contractor will install the irrigation system as shown on the plans, except for the Quick Coupler Valve and Valve Box. The Contractor will install the irrigation lines into the raised planters as shown and cap line in place inside planter box. Suitable soil shall be placed in the planter boxes up to a level 2 feet below the top of the box.
11. Sheet 40, Drawing M7 is deleted and a revised Sheet 40 is attached
12. Sheet 41, Drawing S1 is deleted and a revised Sheet 41 is attached

B. Contract B Drawings

1. Sheet 2, Drawing G-1: Delete paragraph 10 referencing trees to be provided by the Contractor in its entirety. Trees will now be provided by the City.
2. Sheet 9, Drawing SR1: All references to Thermoplastic lines (P1 to P6 pavement markings) are deleted and replaced with Epoxy lines. All proposed trees (M3) indicated on the drawings are deleted. Tree Grates shown are still to be installed.

3. Sheet 10, Drawing SR2: All references to Thermoplastic lines (P1 to P6 pavement markings) are deleted and replaced with Epoxy lines. All proposed trees (M3) indicated on the drawings are deleted.

4. Sheet 15, Drawing M3: is deleted and a revised Sheet 15 is attached

5. Sheet 16, Drawing M4 is deleted and a revised Sheet 16 is attached

III. Any revisions to any of the Contract Documents made by this Addendum shall be considered as the same revision to any and all related areas of the Contract Documents not specifically called out in this Addendum.

	 CERTIFIED BY: JUSTIN D. WYKOFF CITY OF BLOOMINGTON STATE OF INDIANA
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Acknowledge receipt of the addendum by submitting a signed copy with your bid proposal.

RECEIVED BY: CONTRACTOR (FIRM AND ADDRESS)

SIGNATURE: _____ **DATE:** _____

PRINTED NAME: _____

TITLE: _____

II. INSPECTION RESULTS

A. Jordan River

1. General Description

The Jordan River is the main drainage channel for the City of Bloomington and most major drainage subbasins flow into it. A major segment of the river, about 3900 feet long, is enclosed as a storm sewer in the downtown area and this is the structure referred to in this report. Two major storm sewer branches directly flow into this structure - the Lower Spanker's Branch and the Dunn Branch. The Upper Spanker's indirectly flows into the Jordan through the Lower Spanker's. Since it collects the flow from these other branches, the Jordan has the largest cross-sectional opening size of all the City storm sewers. The cross-sectional opening is about 8 feet tall by 21 feet wide at the mouth to about 6 feet high by 13 feet wide at the inlet. Pages 12 through 14 present photos taken in the Jordan River tunnel.

The original date of construction is unknown, but this is undoubtedly one of the oldest storm sewers in the City. Originally, the storm sewer probably consisted solely of stone masonry arch segments that over time have been partially replaced or spliced together by newer construction. We estimate that the stone masonry arch portions date back as far as 1900. Today, the enclosed storm sewer is a composite structure of various vintages, consisting of stone masonry arches, concrete rigid frames, concrete flat slabs or box beams founded on walls, and concrete T-beams. All of these structure types are founded with spread footings on rock. The floor of the storm sewer is non-structural and is either rock or concrete flat work formed near the rock surface.

2. Condition Summary

The structural condition of the Jordan varies greatly from segment to segment. The majority of the structure (about 60%) is in good to fair condition. It appears that a significant portion of the structure was replaced or repaired within the last 30 years. Segments in good condition include stations 0+30 to 1+50, 2+20 to 2+40, 2+65 to 2+80, 3+00 to 3+22, 3+28 to 3+66, 3+88 to 4+00, 5+60 to 7+20, 11+70 to 21+80, 24+00 to 26+20, 28+10 to 32+00, and 34+90 to 38+00.

There are several segments in poor condition which require repair. Two of these segments composed of concrete T-beams between stations 7+20 and 10+70, are in especially poor condition and should be replaced within the next year. In these sections, the T-beams are heavily spalled and about 75% of the main reinforcing steel is corroded and exposed in areas of maximum stress. The structural capacity of the T-beams has been severely reduced. All portions of the T-beams under live load should be posted for 3 ton weight restrictions. This

is the only segment within the Jordan to receive a Priority 1 repair recommendation. Page 14 has photos of the T-beam sections.

Two areas of repair have been added to the Priority 1 T-beam repair because they are in poor condition and contiguous with the T-beams. These areas include stations 9+30 to 9+90 and 10+70 to 11+70. These segments are not in as serious condition as the T-beams, but should be replaced at the same time. Contiguous construction is cost-effective in terms of life-cycle costs and is more likely to produce a more efficient hydraulic section.

There is another large segment in poor condition near the Municipal Building between stations 21+80 and 24+00 which also requires full structure replacement. The top slab is in worse condition than the walls and exhibits major areas of spalling, corrosion, and exposed reinforcing steel. In several locations, the long lengths of reinforcing steel have been broken and bent down into the interior opening from the top slab. These rebar catch debris which reduces the hydraulic efficiency. The segment is not in as poor condition as the T-beam section and has been assigned a repair Priority 2.

Several areas of the top slab in the downstream portion of the structure near the mouth that are in poor condition and require replacement of the top slab only. These segments include stations 2+40 to 2+65, 3+22 to 3+28, and 4+00 to 5+30. The top slabs exhibit heavy spalling with corroded and exposed reinforcing steel, but the walls are in satisfactory condition and can be salvaged. These areas require repair Priority 2.

Two areas of scour require repair. The first is at station 3+66 which is the junction of the Lower Spanker's and the second is at station 5+30 where there is a major cross-sectional change in height. Due to a bend in the Jordan at the junction of the Spanker's, there is a three foot scour hole under the footing at the bend. This could potentially undermine the wall and cause a localized failure. The other scour location is caused by a waterfall at a cross-sectional change in height. The waterfall has already severely undermined the concrete floor at the location (which is non-structural but protects the footings) and is beginning to undermine the footings. These areas should be grouted in a Priority 2 repair.

The Jordan still contains five stone masonry arch segments which include stations 0+00 to 0+30, 1+50 to 2+20, 27+40 to 28+10, 32+20 to 34+90, and 38+00 to 38+94. These arches are all in fair condition and do not indicate widespread problems. The first arch from station 0+00 to 0+30 is posted for 15 tons at 1st Street. All the other arches are in the approximate same condition as the first arch and in order to be consistent, we recommend that these other arches be posted for 15 tons as well. We also recommend that all of these arch segments eventually be replaced. This is primarily based not only on their age and structural condition, but also their propensity for localized failure. The arch structures in the Jordan have no reinforcement and localized "cave-ins" are possible. There are no known localized "cave-ins" in the Jordan, but there was one in the Upper Spanker's which caused an emergency business evacuation and expensive repair. While the Jordan arch segments do not

appear to be in as poor condition as the Upper Spanker's segment which failed, long term funding should be allocated now for the inevitable need for future replacement.

There are two other segments contiguous to the arch segments which are in fair-to-poor or poor condition and require replacement. These are at stations 26+20 to 27+40 and station 32+00 to 32+20. These replacements can wait until the arches are replaced; but their condition should be monitored.

The structural condition of the Jordan is summarized in **Figures II.A.1** through **II.A.4**.

3. Key Issues

The following key issues have been identified:

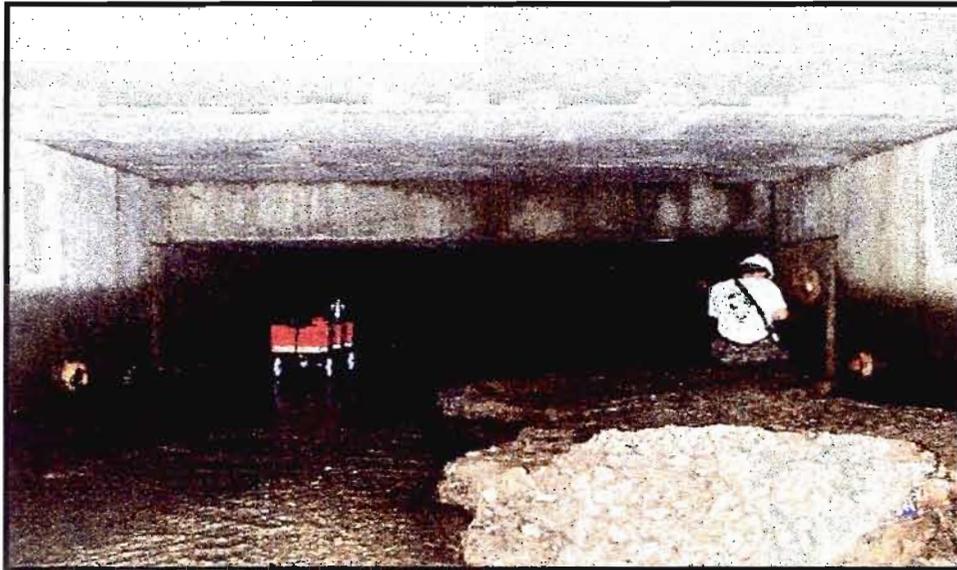
- a) Replace the two T-beam sections and adjoining slab segments in poor condition as soon as possible (Stations 7+20 to 11+70). The T-beam segments are in serious condition and have a very limited structural capacity. This is a high Priority 1 repair. Post all streets, alleys, and driveways over this segment for 3 tons until replacement is complete.
- b) Replace structure between 21+80 and 24+00. This is a lower Priority 2 repair. Post all streets, alleys, and driveways over this segment for 10 tons until replacement is complete.
- c) Replace top slabs between stations 2+40 to 2+65, 3+22 to 3+28, and 4+00 to 5+30. This is also a lower Priority 2 repair. Post all streets, alleys, and driveways over this segment for 10 tons until replacement is complete.
- d) Grout scour holes at stations 3+66 and 5+30. Priority 2 repair.
- e) Replace all stone masonry arch segments and adjoining slab segments in poor condition (Stations 0+00 to 0+30, 1+50 to 2+20, 26+20 to 28+10, 32+00 to 34+90, and 38+00 to 38+94). Priority 3 repair. Post all arch structures for 15 tons. Monitor adjoining slab segments for significant negative change in structural condition.
- f) All repairs should be evaluated *hydraulically*. While the Jordan does not have as severe changes in hydraulic cross-section as some of the other branches, all repairs should be evaluated to ensure the maximum practicable hydraulic efficiency is provided.

Jordan River 09+60



Pipe crossings are a common feature in the Jordan River tunnel.

Jordan River 06+70



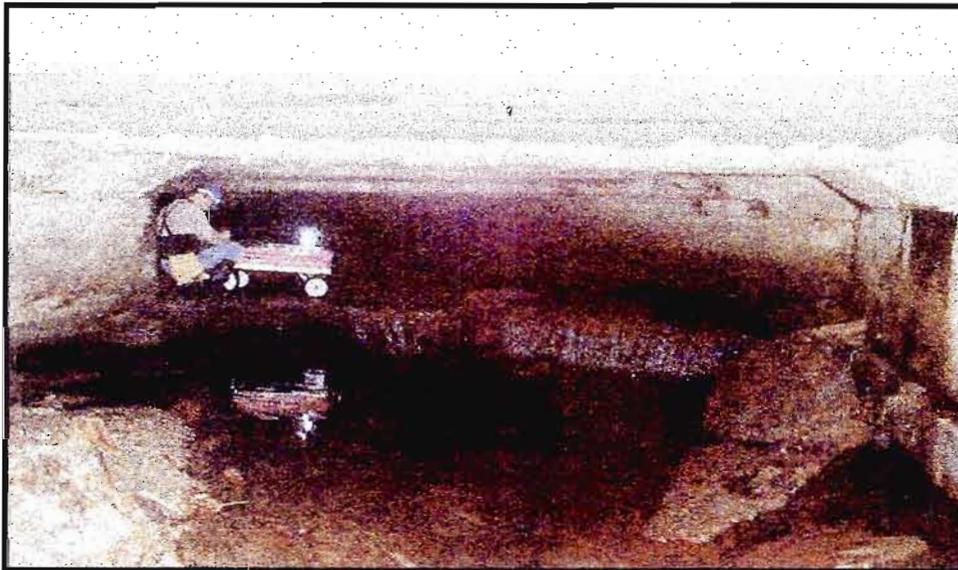
**Rapid changes in cross-section, this one to a smaller tunnel,
are also common in the Jordan River tunnel.**

Jordan River 03+70

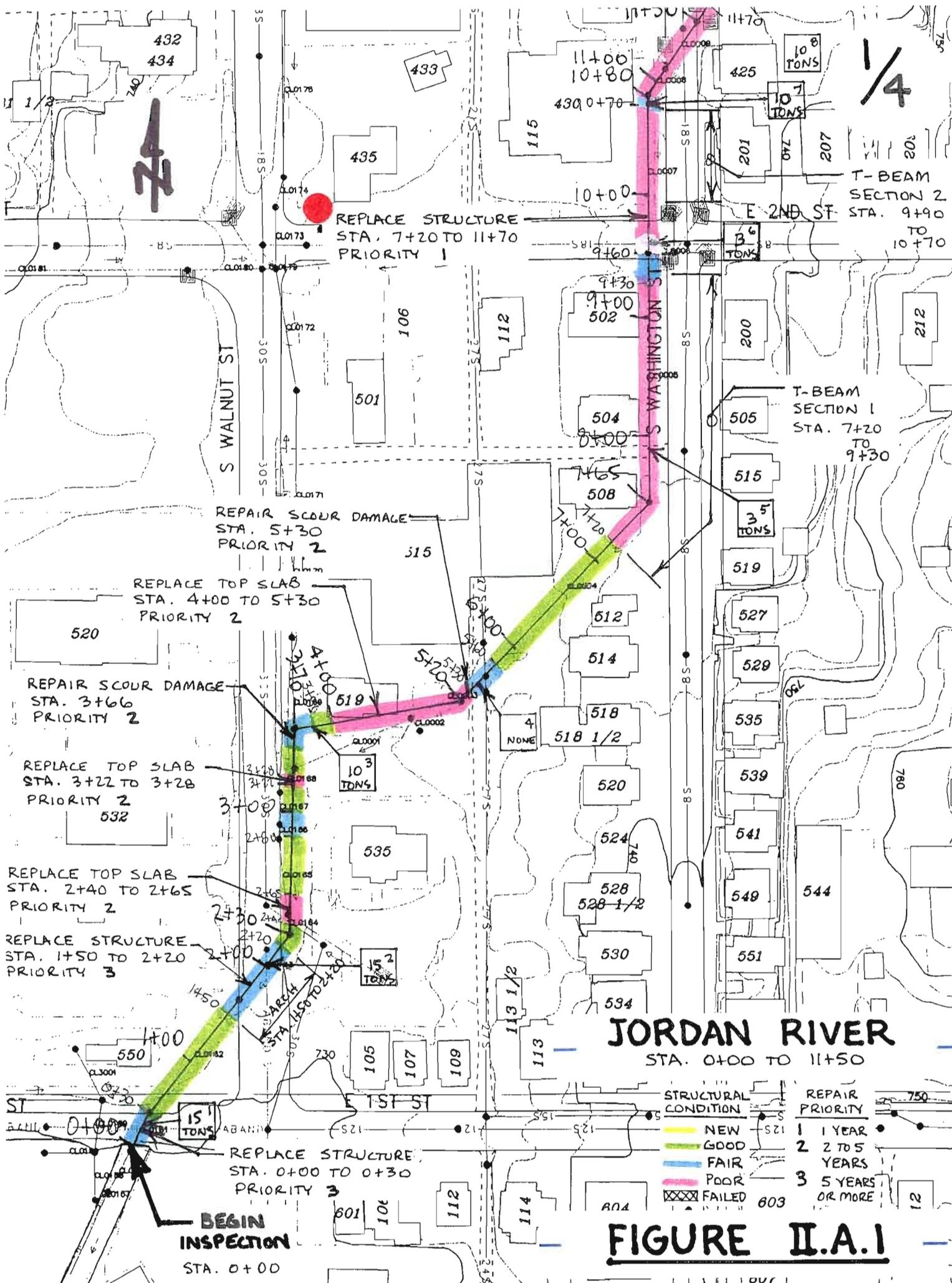


The Jordan River is joined by Spanker's Branch from the North. This junction is under the east edge of the street in front of 519 S. Walnut.

Jordan River 05+20



The Jordan River drops 18" under the alley behind 519 S. Walnut. On the left, the wall footer has collapsed. Scour is as much as 3' deep here behind the waterfall.



1/4

REPLACE STRUCTURE
STA. 7+20 TO 11+70
PRIORITY 1

T-BEAM
SECTION 2
STA. 9+90
TO
10+70

T-BEAM
SECTION 1
STA. 7+20
TO
9+30

REPAIR SCOUR DAMAGE
STA. 5+30
PRIORITY 2

REPLACE TOP SLAB
STA. 4+00 TO 5+30
PRIORITY 2

REPAIR SCOUR DAMAGE
STA. 3+66
PRIORITY 2

REPLACE TOP SLAB
STA. 3+22 TO 3+28
PRIORITY 2

REPLACE TOP SLAB
STA. 2+40 TO 2+65
PRIORITY 2

REPLACE STRUCTURE
STA. 1+50 TO 2+20
PRIORITY 3

REPLACE STRUCTURE
STA. 0+00 TO 0+30
PRIORITY 3

BEGIN
INSPECTION
STA. 0+00

JORDAN RIVER
STA. 0+00 TO 11+50

STRUCTURAL CONDITION	REPAIR PRIORITY
NEW	1 1 YEAR
GOOD	2 2 TO 5 YEARS
FAIR	3 5 YEARS OR MORE
POOR	
FAILED	

FIGURE II.A.1

B. Lower Spanker's Branch

1. General Description

The Lower Spanker's is a short (800 foot long) enclosed storm sewer tunnel which meets the Jordan River storm sewer about 370 feet from its mouth. Similar to the Jordan, the Lower Spanker's is a composite structure consisting of concrete flat slabs, rigid frames, and box beams which have been pieced together over time. There are no stone masonry arches in the branch, however many of the walls are vertical stone masonry which suggest that this branch was originally an open channel with the top slabs added at a later date. Many of the walls have a concrete fascia or have been completely replaced by concrete.

All of the structure types are founded with spread footings on rock. The floor of the storm sewer is primarily non-structural rock. The rock floor portions of the Spanker's are especially rough, consisting of uneven rock cuts, large cobble, and boulders. The cross-section is fairly constant and averages about 7 feet high by 10 feet wide. The original date of construction is unknown, but it appears that portions of Lower Spanker's are as old as the Jordan storm sewer. Pages 21 and 22 include photos taken in Lower Spanker's Branch.

2. Condition Summary

The structural condition of the Lower Spanker's Branch is characterized as fair to poor with no segment in new or good condition. The entire branch should eventually be replaced. Some segments require Priority 2 repairs and others Priority 3. The structural condition is not severe enough to recommend Priority 1 repairs, but conversely, none of the segments are in good enough condition to salvage for the long-term.

There is one segment between station 4+20 to 6+00 that is in poor enough condition to recommend Priority 2 repairs. This section exhibits extensive spalling in the top slab with corroded and exposed reinforcing steel. The walls are either masonry or concrete. Many of the masonry walls have "washouts" which are missing or damaged stone blocks. This segment is borderline 2 to 3 repair Priority and should be considered for replacement along with the rest of the entire branch.

The other segments of the structure tend to be in fair-to-poor condition (Condition 3 minus). There are many small areas of the top slab that are spalling with exposed reinforcement steel. The walls tend to be in slightly better condition than the segment described above. These segments require Priority 3 repairs that could be delayed. However, consideration should be given to replacing the entire branch as a single unit.

The structural condition of the Lower Spanker's Branch is summarized in **Figure II.B.1**.

3. *Key Issues*

The following key issues have been identified:

- a) Replace the entire Lower Spanker's Branch as a single unit. This should be done approximately 5 years from now. If the entire branch can not be replaced together, stations 4+20 to 6+00 should be replaced within the next 5 years and the rest should be replaced within the next ten years.
- b) The Lower Spanker's branch contains many segments which are hydraulically inefficient and the entire branch should be evaluated for *hydraulic* efficiency. The hydraulic efficiency should be evaluated in conjunction with the Upper Spanker's. The Upper Spanker's which is upstream of the Lower Spanker's has a greater hydraulic capacity. Since it is downstream, the Lower Spanker's hydraulic capacity should be, at a minimum, increased to the capacity of the Upper Spanker's.

Lower Spanker's Branch 04+20



Typical section of the tunnel, with old masonry walls, and a very irregular bottom of heavy cobbles over bedrock. The ceiling is better here than in other areas.

Lower Spanker's Branch 05+30



This tunnel is one of the oldest in the system, as evidenced by the masonry walls and the badly deteriorated ceiling. This section is under the east edge of Walnut Street, north of 2nd Street.

Lower Spanker's Branch 07+10



The upper end of Lower Spanker's is in better condition, but the floor is highly irregular. This section is under the building at 424 S. Walnut.

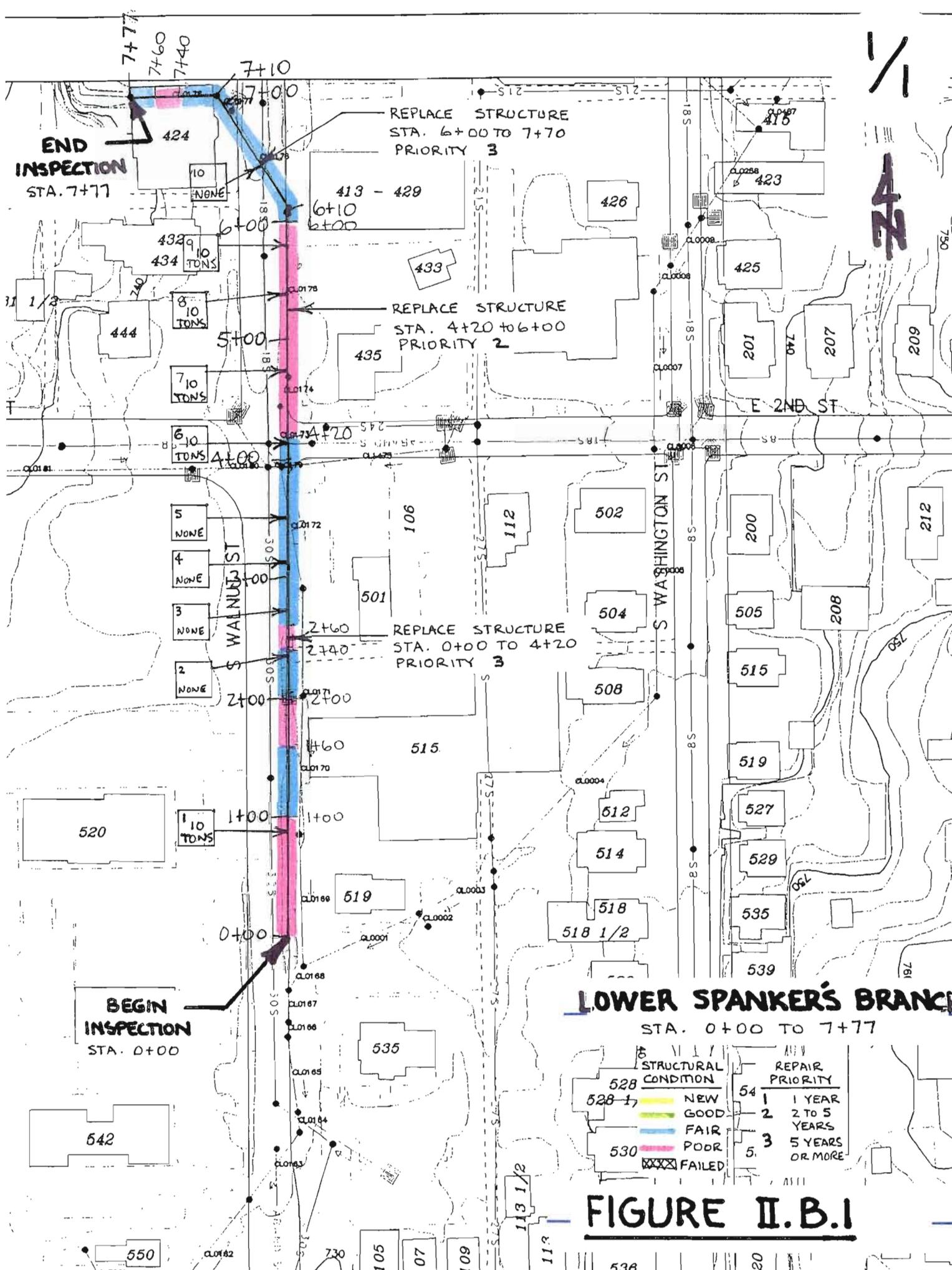


FIGURE II.B.1

UNIT PRICE SHEET

FOR

PW 2012-00, South Walnut Street Streetscape and Stormwater Improvements

Additions/Deductions

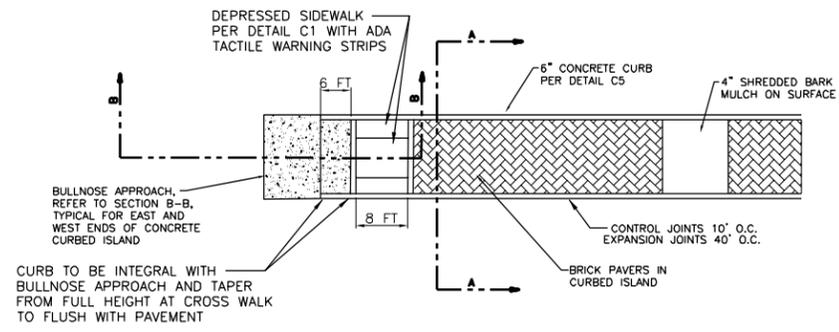
PROVIDE PRICES FOR ALL CHECKED ITEMS

<u>Item #</u>	<u>Description</u>	<u>Price Each</u>	<u>Unit</u>
<input checked="" type="checkbox"/>	Topsoil	_____	TON
<input checked="" type="checkbox"/>	Casting, valve, Adjust to grade	_____	EA
<input checked="" type="checkbox"/>	Casting, manhole, Adjust to grade	_____	EA
<input checked="" type="checkbox"/>	Casting, manhole with CBU vacuum test, Adjust to grade	_____	EA
<input checked="" type="checkbox"/>	Tree Removal, 6" - 10"	_____	EA
<input checked="" type="checkbox"/>	Tree Removal, 12" - 24"	_____	EA
<input checked="" type="checkbox"/>	Saw-Cut Asphalt/Concrete	_____	LF
<input checked="" type="checkbox"/>	Common Excavation	_____	CY
<input checked="" type="checkbox"/>	Class X excavation	_____	CY
<input checked="" type="checkbox"/>	Rock Excavation (per INDOT specification/quantity)	_____	CY
<input checked="" type="checkbox"/>	Curb, Concrete – 20" Bat. Curb w/8" exposed	_____	LF
<input checked="" type="checkbox"/>	Sidewalk, Concrete - 4" Thick 4000psi Concrete	_____	SY
<input type="checkbox"/>	Sidewalk, Asphalt - (2" Base, 2" Surface)	_____	SY
<input checked="" type="checkbox"/>	Driveway, Class I (See INDOT Standard Detail)	_____	EA
<input checked="" type="checkbox"/>	Driveway, Class III (See INDOT Standard Detail)	_____	EA
<input type="checkbox"/>	Type B Ramp w/ Cast Iron Tactile Plate	_____	EA
<input type="checkbox"/>	Type G Ramp w/ Cast Iron Tactile Plate	_____	EA
<input type="checkbox"/>	Type H Ramp w/ Cast Iron Tactile Plate	_____	EA
<input type="checkbox"/>	Retaining Wall (See Detail)	_____	LF
<input checked="" type="checkbox"/>	Pavement Repair (city specification)	_____	SY
<input checked="" type="checkbox"/>	Mulched Seeding	_____	SY
<input checked="" type="checkbox"/>	Sodding	_____	SY
<input checked="" type="checkbox"/>	Trees, Northern Red Oak, 2"-3" DBH	_____	EA
<input type="checkbox"/>	12" N-12 Pipe	_____	LF
<input type="checkbox"/>	12" C900 Pipe	_____	LF
<input type="checkbox"/>	16" C900 Pipe	_____	LF
<input type="checkbox"/>	24" Reinforced Concrete Pipe	_____	LF
<input type="checkbox"/>	15" N-12 Pipe	_____	LF
<input type="checkbox"/>	18" N-12 Pipe	_____	LF
<input checked="" type="checkbox"/>	Sidewalk Removal	_____	SY
<input checked="" type="checkbox"/>	Curb Removal	_____	LF
<input type="checkbox"/>	Storm Inlet Type B with Casting	_____	EA
<input type="checkbox"/>	Storm Inlet Type E with Casting	_____	EA
<input type="checkbox"/>	Storm Inlet Type J with Casting	_____	EA

- All prices shall reflect complete installation as shown on the plans or stated in the specifications, and be authorized by an approved change order prior to installation/deletion (All field orders must be issued in writing to be honored).
- Example: Sidewalk includes stone bedding, excavation; Asphalt Pathway includes stone, base, surface and backfill, excavation, etc.

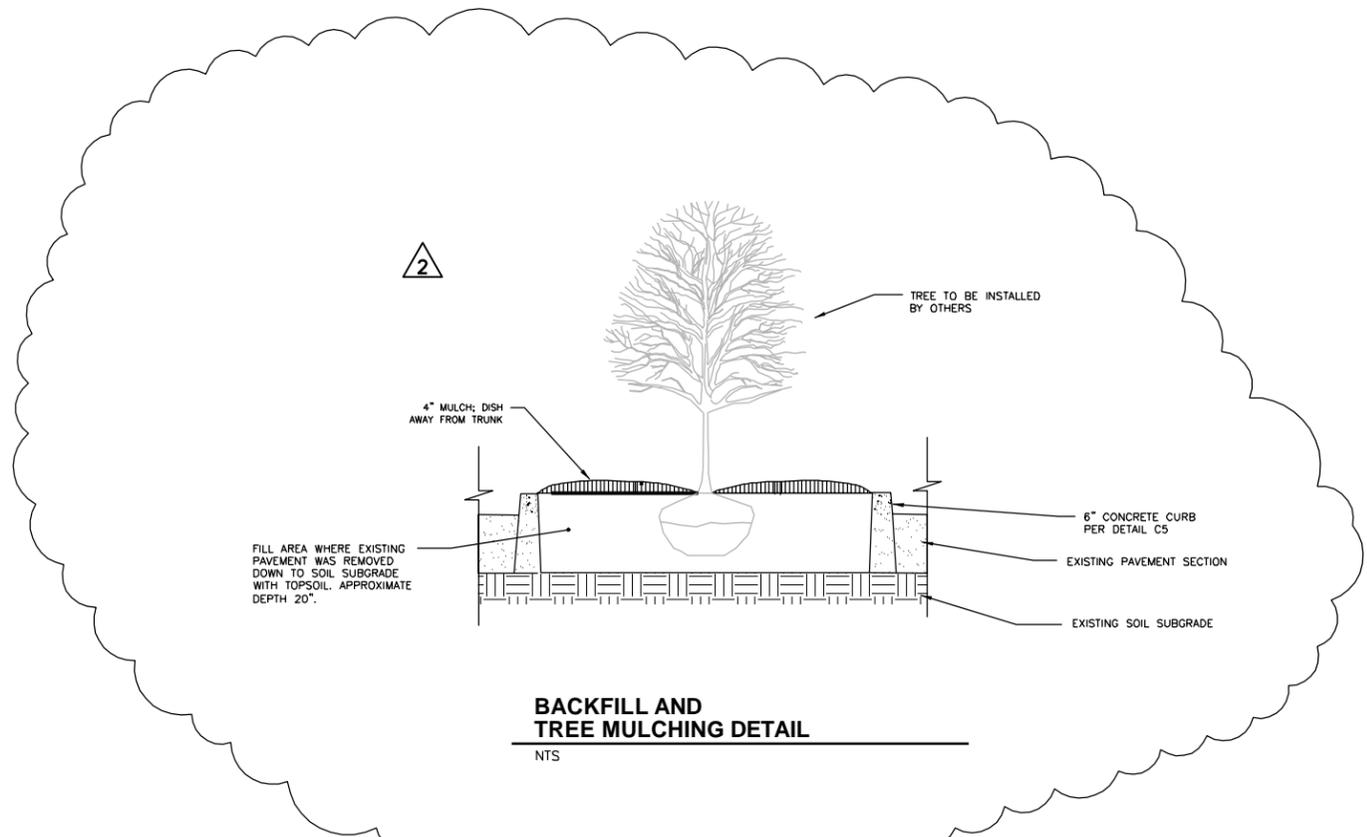
<u>Item #</u>	<u>Description</u>	<u>Price Each</u>	<u>Unit</u>
<input checked="" type="checkbox"/>	Backfill- Open Trench	_____	CY
<input checked="" type="checkbox"/>	2" PVC Pipe for Irrigation System	_____	LF
<input checked="" type="checkbox"/>	Concrete Curb and Gutter	_____	LF
<input checked="" type="checkbox"/>	2" PVC for Electrical Service	_____	LF
<input type="checkbox"/>	Electrical Service Handhole	_____	EA
<input checked="" type="checkbox"/>	Concrete/Bituminous Street Pavement Removal	_____	SY
<input checked="" type="checkbox"/>	Concrete/Bituminous Driveway Pavement Removal	_____	SY
<input checked="" type="checkbox"/>	12" Class V RCP	_____	LF
<input checked="" type="checkbox"/>	15" Class V RCP	_____	LF
<input checked="" type="checkbox"/>	18" Class I RCP	_____	LF
<input checked="" type="checkbox"/>	24" Class I RCP	_____	LF
<input checked="" type="checkbox"/>	12" HDPE Pipe	_____	LF
<input checked="" type="checkbox"/>	24" HDPE Pipe	_____	LF
<input checked="" type="checkbox"/>	30" HDPE Pipe	_____	LF
<input checked="" type="checkbox"/>	36" HDPE Pipe	_____	LF
<input checked="" type="checkbox"/>	48" Standard Manhole	_____	EA
<input checked="" type="checkbox"/>	72" Standard Manhole	_____	EA
<input checked="" type="checkbox"/>	J-10 Catchbasin	_____	EA
<input checked="" type="checkbox"/>	A-2 Inlet	_____	EA
<input checked="" type="checkbox"/>	60" Standard Manhole	_____	EA
<input checked="" type="checkbox"/>	8" Watermain Pipe	_____	LF
<input checked="" type="checkbox"/>	12" Watermain Pipe	_____	LF
<input checked="" type="checkbox"/>	8" PVC Sanitary Sewer Pipe	_____	LF
<input checked="" type="checkbox"/>	16" PVC Sanitary Sewer Pipe	_____	LF
<input checked="" type="checkbox"/>	24" PVC Sanitary Sewer Pipe	_____	LF
<input checked="" type="checkbox"/>	27" PVC Sanitary Sewer Pipe	_____	LF
<input checked="" type="checkbox"/>	36" PVC Sanitary Sewer Pipe	_____	LF
<input checked="" type="checkbox"/>	Sanitary Sewer Service Lateral	_____	EA
<input checked="" type="checkbox"/>	Water Meter Service (East Side of Box Culvert)	_____	EA
<input checked="" type="checkbox"/>	Water Meter Service (West Side of Box Culvert)	_____	EA
<input type="checkbox"/>		_____	

- All prices shall reflect complete installation as shown on the plans or stated in the specifications, and be authorized by an approved change order prior to installation/deletion (All field orders must be issued in writing to be honored).
- Example: Sidewalk includes stone bedding, excavation; Asphalt Pathway includes stone, base, surface and backfill, excavation, etc.

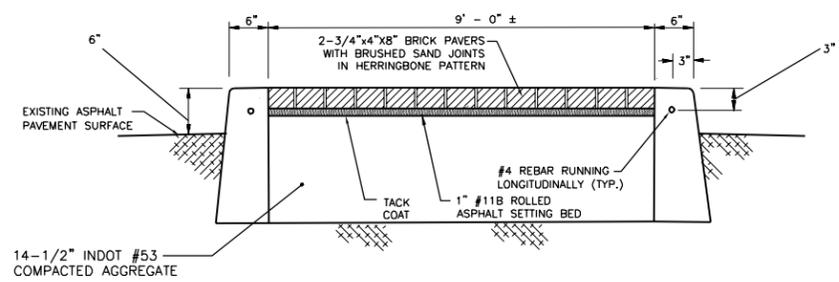


**3RD STREET
CONCRETE CURBED ISLAND C7**
NTS

NOTE: REFER TO SHEET SR2 FOR DETAIL LOCATION

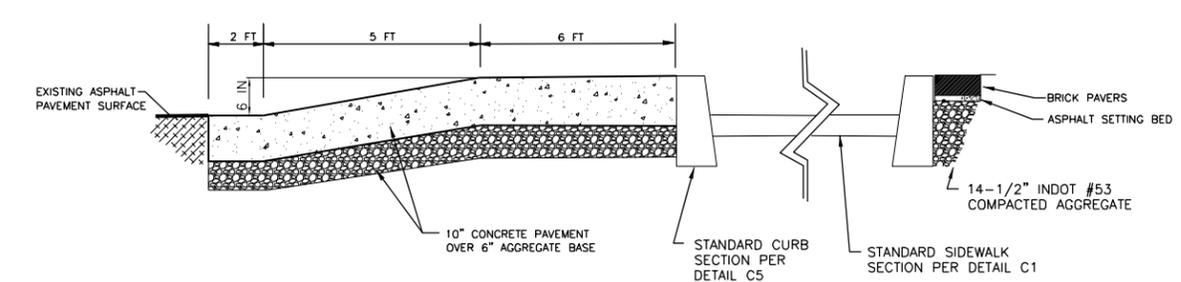


**BACKFILL AND
TREE MULCHING DETAIL**
NTS

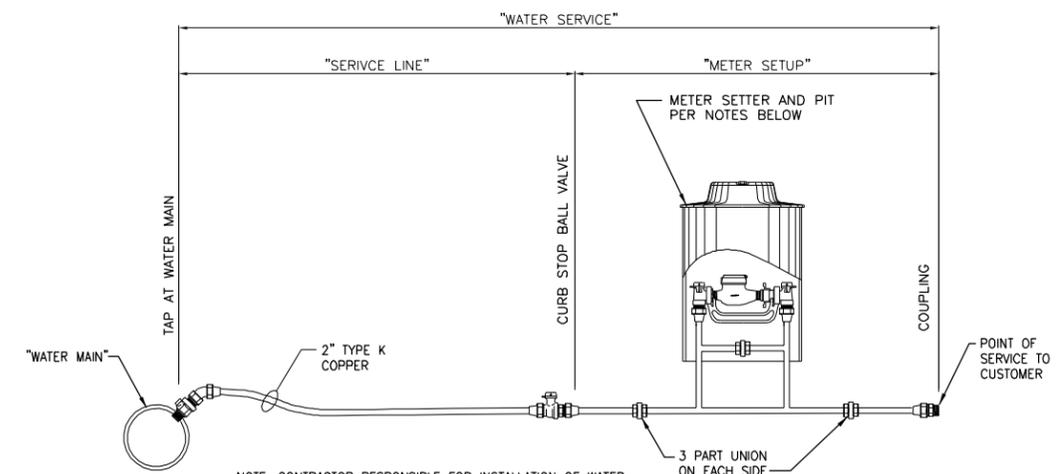


SECTION A-A
NTS

NOTE: BRICK PAVERS TO BE PATHWAY PAVER FULL RANGE COLOR BY PINEHALL



**SECTION B-B
CURBED BULLNOSE APPROACH**
NTS



NOTE: CONTRACTOR RESPONSIBLE FOR INSTALLATION OF WATER SERVICE AS SHOWN ABOVE

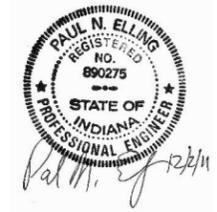
METER SETTER / PIT NOTES

1. METER SETTER SHALL BE: FORD 2" COPPER SETTER (CATALOG #VBHH77-21HBHC-11-77) AND INCLUDE HIGH BYPASS LINE PER MANUFACTURER.
2. TOP OF YOKE TO BE SET MIN. 18" AND MAX 24" BELOW SURFACE GRADE.
3. METER PITS BY WATERWORKS 30"x30" PLASTIC WITH (CBU IJ-7) EXTENSION RING 20"x30" (FORD FL-30) AND (CBU IJ-109) ROUND PIT RING AND #10 LID (FORD #10 LID AND RING) ALL METER LIDS TO BE 20" IN DIAMETER.
4. CBU TO INSTALL METER ONCE SETTER AND PIT ARE INSTALLED BY CONTRACTOR.

SEE PLANS FOR
METER PIT LOCATIONS
"M" - METER SYMBOL

TYPICAL 2" WATER SERVICE DETAIL
NTS

Date	1-6-12
Checked By	PNE
Drawn By	PNE
Revision Description	ADDENDUM 2
Revision Number	2
Designed By	PNE
Drawn By	PNE
Checked By	TJM
Approved By	PNE
Filename	246SD1.DWG
Project No.	11721
Project Date	12/2/11



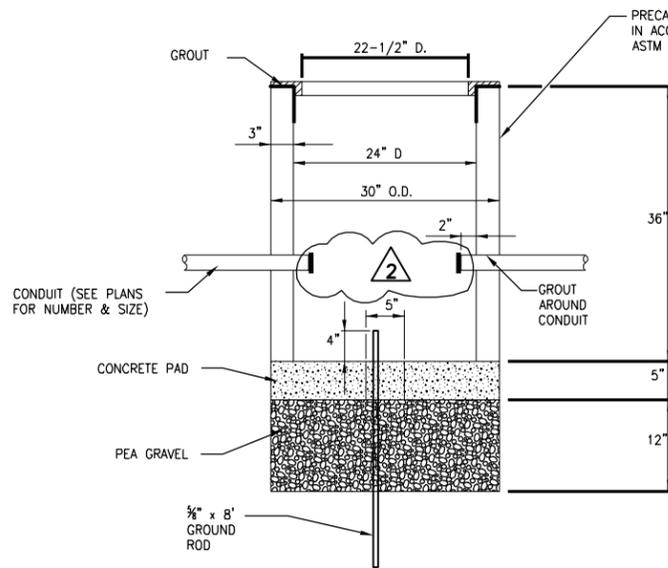
CITY OF BLOOMINGTON
WALNUT STREETSCAPE
CONTRACT B
BLOOMINGTON, INDIANA

MISCELLANEOUS DETAILS
IRRIGATION SYSTEM AND HANDICAPPED SYMBOL



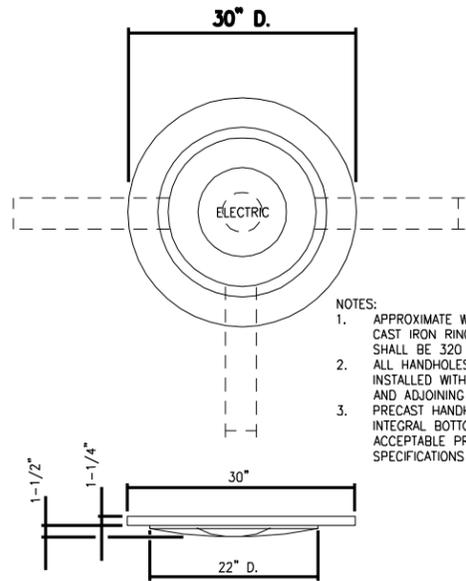
Sheet No. 15
Drawing No.

M3

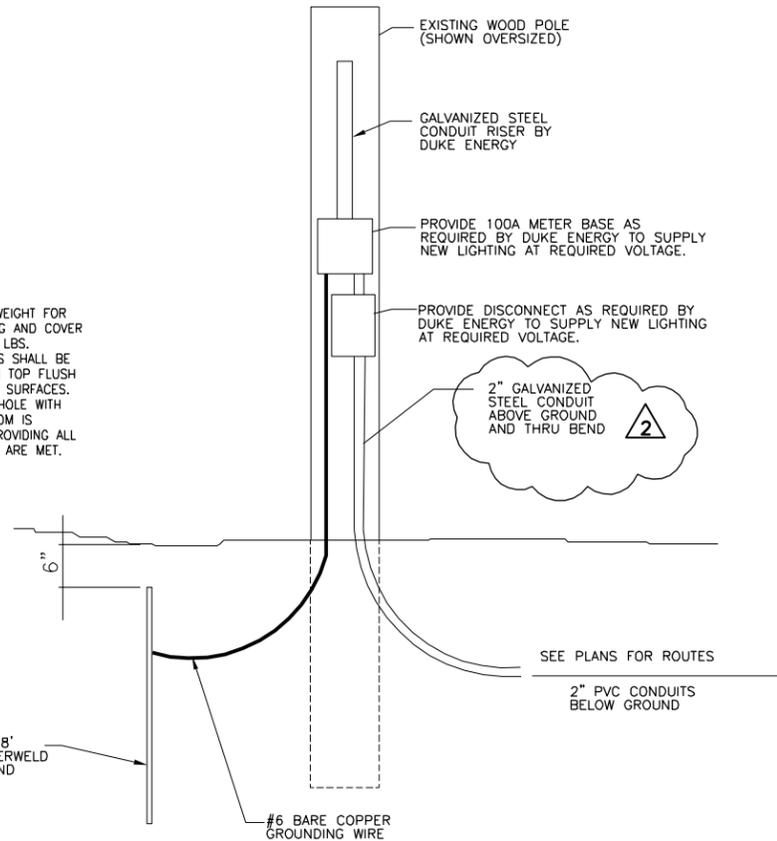


STREET LIGHTING HANDHOLE

NTS



- NOTES:
1. APPROXIMATE WEIGHT FOR CAST IRON RING AND COVER SHALL BE 320 LBS.
 2. ALL HANDHOLES SHALL BE INSTALLED WITH TOP FLUSH AND ADJOINING SURFACES. PRECAST HANDHOLE WITH INTEGRAL BOTTOM IS ACCEPTABLE PROVIDING ALL SPECIFICATIONS ARE MET.



SERVICE POINT NOTES:

1. CONTRACTOR SHALL PROVIDE NECESSARY MATERIALS FOR MOUNTING ELECTRICAL EQUIPMENT TO EXISTING WOOD POLE.
2. THE SERVICE POINT FOR THE NEW LIGHTS ALREADY HAS AN AREA LIGHT ON IT. CONTRACTOR TO COORDINATE WITH DUKE TO MAINTAIN SERVICE TO EXISTING LIGHTING.
2. THIS DETAIL FOR CONCEPTUAL USE ONLY. CONTRACTOR SHALL COORDINATE THE REQUIREMENTS IN THESE PLANS AND SPECIFICATIONS WITH THE EQUIPMENT THEY INTEND TO USE AND ARE TO SUBMIT A SERVICE POINT LAYOUT DRAWING FOR REVIEW BY DUKE ENERGY.

LIGHTING REMOVAL CONTINUITY:

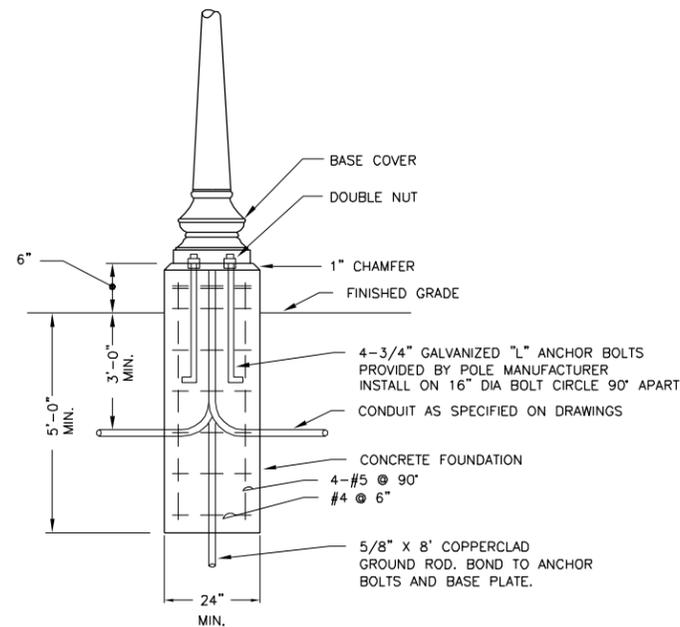
CONTRACTOR TO COORDINATE WITH DUKE ENERGY TO HAVE EXISTING LIGHTS REMOVED AT APPROPRIATE TIME FOR EACH BLOCK. COORDINATE LIGHTING REMOVAL WITH CITY TO MINIMIZE DURATION OF TIME WHEN NO LIGHTING IS PROVIDED.

LIGHTING SERVICE PEDESTAL:

SERVICE PEDESTAL SHALL BE TESCO CONTROLS MODEL 26-000, OR EQUAL, SUITABLE FOR 100 AMP 240 VOLT SERVICE. METER SOCKET NOT REQUIRED IF METER INSTALLED AT SERVICE POINT. CIRCUITS TO BE AS SHOWN IN TABLE BELOW. SERVICE PEDESTAL TO CONTAIN LIGHTING CONTACTOR AND PHOTOCELL CONTROLS FOR ALL LIGHTING CIRCUITS. CABINET SHALL BE HOT DIPPED GALVANIZED STEEL FINISHED OR PAINTED IN COLOR SELECTED BY CITY. ENCLOSURE DOOR SHALL BE HINGED WITH PADLOCKABLE LATCH AND NO EXPOSED NUTS, BOLTS, SCREWS, OR OTHER FASTENERS.

CONDUIT INSTALLATION NOTES:

1. ALL CONDUITS ARE TO BE 2" PVC SCH. 80 AND ARE TO BE BURIED 36" DEEP. ADVISE ENGINEER IF DIFFERENT DEPTS REQUIRED DUE TO CONFLICTS.
2. LIGHTING CIRCUITS TO BE LABELED ACCORDING TO PHASE AND CIRCUIT NUMBER AT EACH LIGHT POLE.
3. SEE PLANS FOR LOCATIONS OF CONDUIT.



STANDARD LIGHT POLE BASE DETAIL

NTS

SECOND AND WALNUT LIGHTING SERVICE PEDESTAL CIRCUITS				
CIRCUIT	VOLTS	AMP RATING	CONDUCTOR	LOAD
1. STREET LIGHTS #8 & #9	120	20	2-#8, 1-#10 GND	2 LIGHTS, 2 DUPLEX OUTLETS
2. STREET LIGHTS #10 & #11	120	20	2-#6, 1-#8 GND	2 LIGHTS, 2 DUPLEX OUTLETS
3. SPARE	120	20		
4. SPARE	120	20		
5. SPARE	120	20		
6. SPARE	120	20		
7. SPARE	120	20		

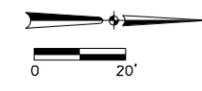
- NOTES:
1. ALL WIRE TO BE CONDUCTOR TYPE XHHW-2
 2. ALL LIGHTS ARE TO BE 66 WATT.
 3. EACH RECEPTACLE ON POLES SHALL BE GFCI 120V AND BE WEATHERPROOF WHILE IN USE.

Date	Checked By	Drawn By	Revision Description	Revision Number	Designed By	Drawn By	Checked By	Approved By	Filename	Project No.	Project Date
1-9-12	PNE	PNE	ADDENDUM 2	2	PNE	PNE	TJM	PNE	246SD1.DWG	11721	12/2/11



CITY OF BLOOMINGTON
 WALNUT STREETSCAPE
 CONTRACT B
 BLOOMINGTON, INDIANA
 MISCELLANEOUS DETAILS
 ELECTRICAL CONNECTIONS



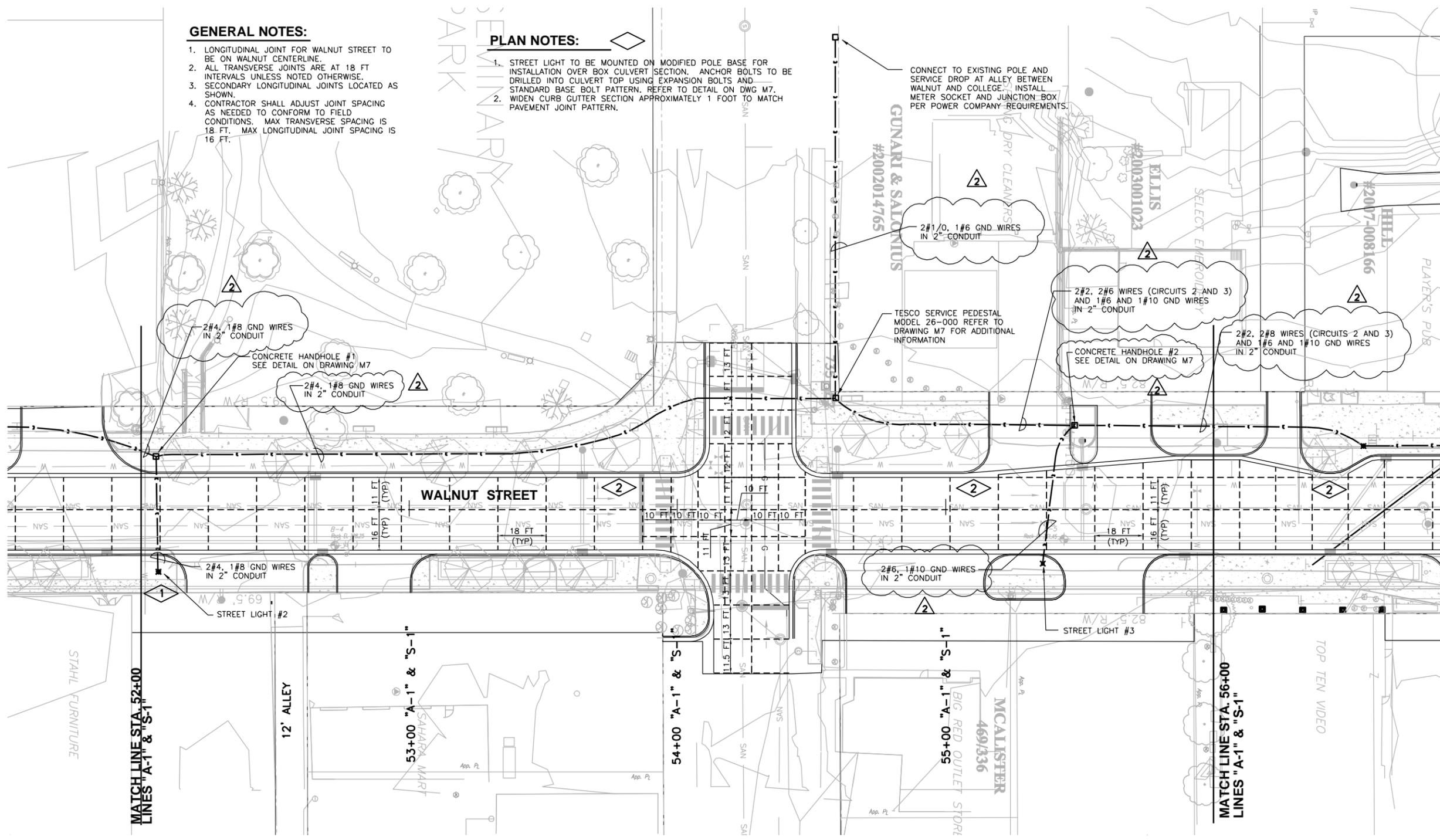


GENERAL NOTES:

1. LONGITUDINAL JOINT FOR WALNUT STREET TO BE ON WALNUT CENTERLINE.
2. ALL TRANSVERSE JOINTS ARE AT 18 FT INTERVALS UNLESS NOTED OTHERWISE.
3. SECONDARY LONGITUDINAL JOINTS LOCATED AS SHOWN.
4. CONTRACTOR SHALL ADJUST JOINT SPACING AS NEEDED TO CONFORM TO FIELD CONDITIONS. MAX TRANSVERSE SPACING IS 18 FT. MAX LONGITUDINAL JOINT SPACING IS 16 FT.

PLAN NOTES:

1. STREET LIGHT TO BE MOUNTED ON MODIFIED POLE BASE FOR INSTALLATION OVER BOX CULVERT SECTION. ANCHOR BOLTS TO BE DRILLED INTO CULVERT TOP USING EXPANSION BOLTS AND STANDARD BASE BOLT PATTERN. REFER TO DETAIL ON DWG M7.
2. WIDEN CURB GUTTER SECTION APPROXIMATELY 1 FOOT TO MATCH PAVEMENT JOINT PATTERN.



Revision Number	Revision Description	Drawn By	Checked By	Date
2	ADDENDUM 2	MRS	PNE	01-09-12

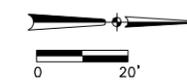
Designed By: BDB
 Drawn By: BDB
 Checked By: TJM
 Approved By: PNE
 Filename: 246PJ1.DWG
 Project No: 11340&11721
 Project Date: 12/2/11



CITY OF BLOOMINGTON
 JORDAN RIVER AND LOWER SPANKERS STORM CULVERT
 RECONSTRUCTION AND STREETSCAPE - CONTRACT A
 BLOOMINGTON, INDIANA

STREET LIGHTING AND
 CONCRETE PAVEMENT JOINT PLAN



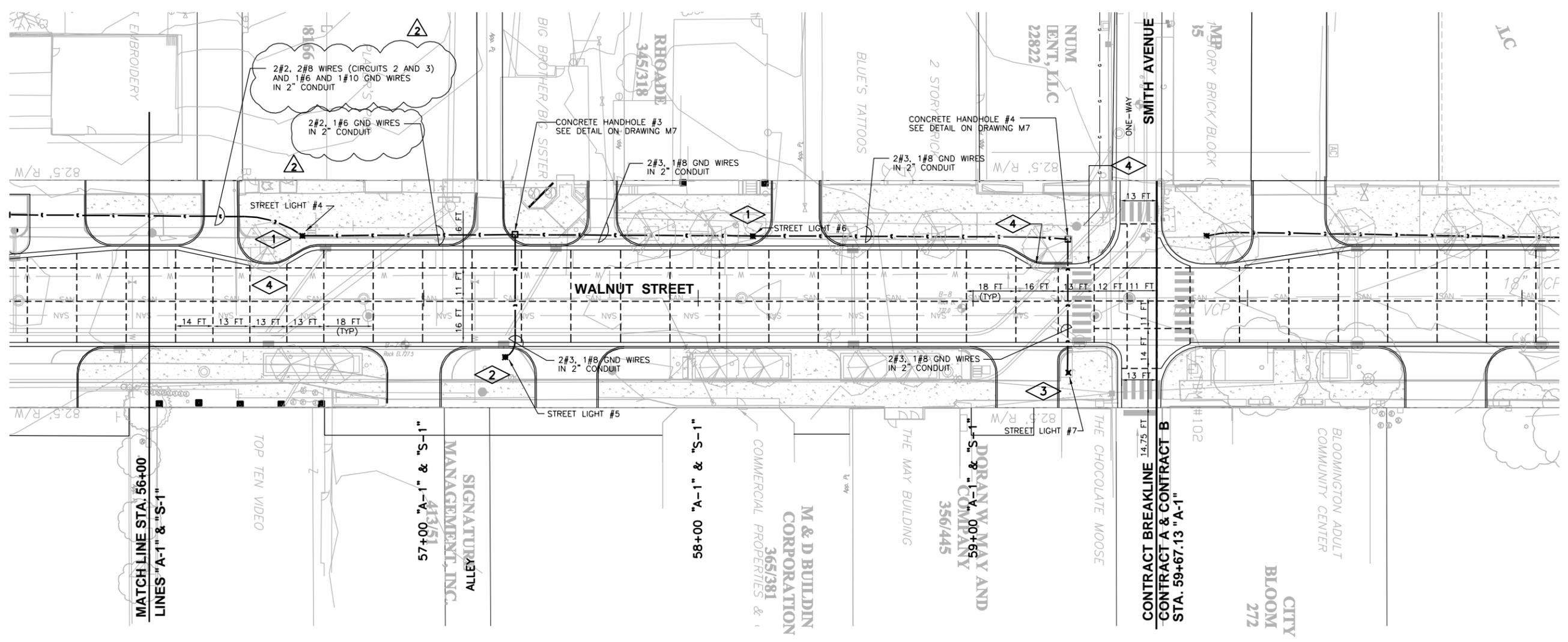


PLAN NOTES:

1. STREET LIGHT TO BE MOUNTED ON STANDARD POLE BASE USING STANDARD BASE BOLT PATTERN. REFER TO DETAIL ON DWG M7.
2. STREET LIGHT TO BE MOUNTED ON MODIFIED POLE BASE FOR INSTALLATION OVER BOX CULVERT SECTION. ANCHOR BOLTS TO BE DRILLED INTO CULVERT TOP USING EXPANSION BOLTS AND STANDARD BASE BOLT PATTERN. REFER TO DETAIL ON DWG M7.
3. STREET LIGHT TO BE MOUNTED ON STANDARD POLE BASE USING STANDARD BASE BOLT PATTERN. REFER TO DETAIL ON DWG M7. CONSULT WITH ENGINEER FOR FINAL LOCATION OF THIS LIGHT DUE TO LIMITED AVAILABLE SPACE FOR INSTALLATION AND OVERHEAD LINES.
4. WIDEN CURB GUTTER SECTION APPROXIMATELY 1 FOOT TO MATCH PAVEMENT JOINT PATTERN

GENERAL NOTES:

1. LONGITUDINAL JOINT FOR WALNUT STREET TO BE ON WALNUT CENTERLINE.
2. ALL TRANSVERSE JOINTS ARE AT 18 FT INTERVALS UNLESS NOTED OTHERWISE.
3. SECONDARY LONGITUDINAL JOINTS LOCATED AS SHOWN.
4. CONTRACTOR SHALL ADJUST JOINT SPACING AS NEEDED TO CONFORM TO FIELD CONDITIONS. MAX TRANSVERSE SPACING IS 18 FT. MAX LONGITUDINAL JOINT SPACING IS 16 FT.



Revision Number	Revision Description	Drawn By	Checked By	Date
2	ADDENDUM 2	MRS	PNE	01-09-12

Designed By: BDB
 Drawn By: BDB
 Checked By: TJM
 Approved By: PNE
 Filename: 246PJ1.DWG
 Project No: 11340&11721
 Project Date: 12/2/11

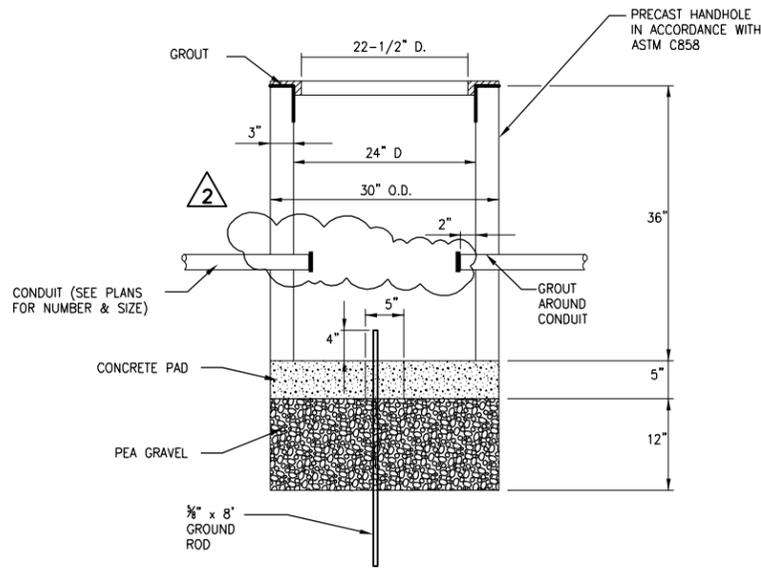


CITY OF BLOOMINGTON
 JORDAN RIVER AND LOWER SPANKERS STORM CULVERT
 RECONSTRUCTION AND STREETSCAPE - CONTRACT A
 BLOOMINGTON, INDIANA

STREET LIGHTING AND
 CONCRETE PAVEMENT JOINTING PLAN

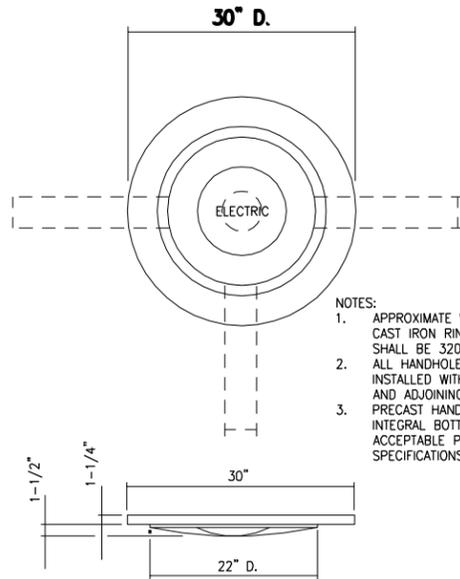


Sheet No. 33
 Drawing No. PJ3

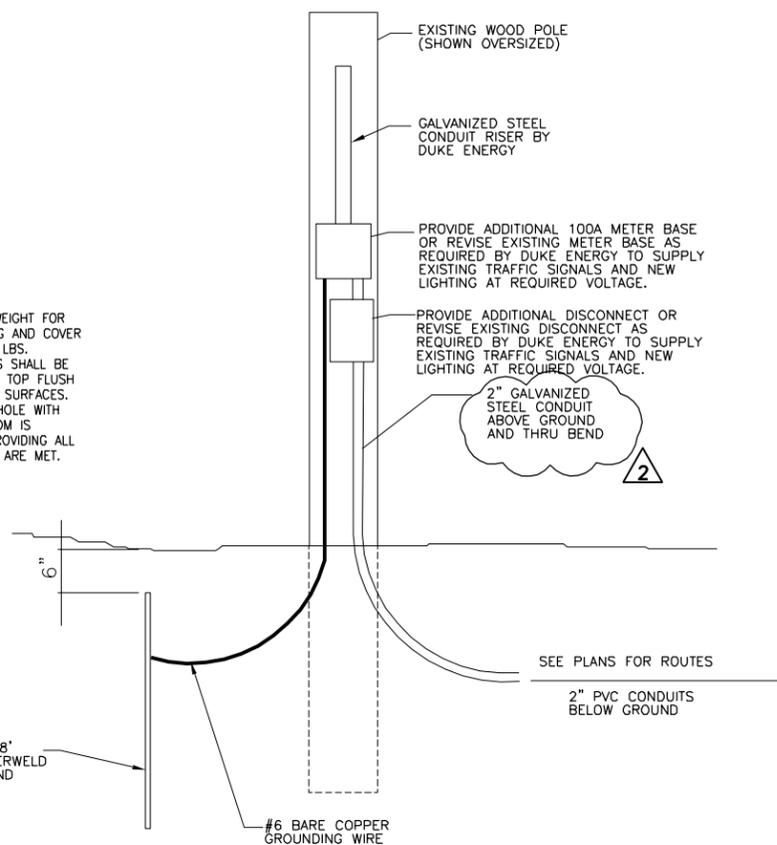


STREET LIGHTING HANDHOLE

NTS



- NOTES:
1. APPROXIMATE WEIGHT FOR CAST IRON RING AND COVER SHALL BE 320 LBS.
 2. ALL HANDHOLES SHALL BE INSTALLED WITH TOP FLUSH AND ADJOINING SURFACES. PRECAST HANDHOLE WITH INTEGRAL BOTTOM IS ACCEPTABLE PROVIDING ALL SPECIFICATIONS ARE MET.
 - 3.



SERVICE POINT NOTES:

1. CONTRACTOR SHALL PROVIDE NECESSARY MATERIALS FOR MOUNTING ELECTRICAL EQUIPMENT TO EXISTING WOOD POLE.
2. THE SERVICE POINT FOR THE NEW LIGHTS ALREADY HAS A METER AND DISCONNECT FOR 120V SERVICE FOR THE TRAFFIC SIGNALS ON SECOND STREET AT COLLEGE AND WALNUT. CONTRACTOR TO COORDINATE WITH DUKE TO MAINTAIN SERVICE TO EXISTING SIGNALS.
3. THIS DETAIL FOR CONCEPTUAL USE ONLY. CONTRACTOR SHALL COORDINATE THE REQUIREMENTS IN THESE PLANS AND SPECIFICATIONS WITH THE EQUIPMENT THEY INTEND TO USE AND ARE TO SUBMIT A SERVICE POINT LAYOUT DRAWING FOR REVIEW BY DUKE ENERGY.

LIGHTING REMOVAL CONTINUITY:

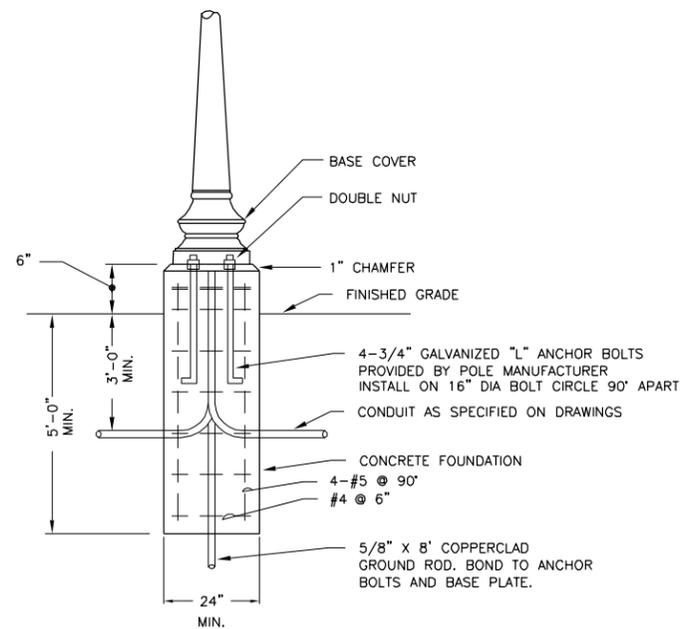
CONTRACTOR TO COORDINATE WITH DUKE ENERGY TO HAVE EXISTING LIGHTS REMOVED AT APPROPRIATE TIME FOR EACH BLOCK. COORDINATE LIGHTING REMOVAL WITH CITY TO MINIMIZE DURATION OF TIME WHEN NO LIGHTING IS PROVIDED.

LIGHTING SERVICE PEDESTAL:

SERVICE PEDESTAL SHALL BE TESCO CONTROLS MODEL 26-000, OR EQUAL, SUITABLE FOR 100 AMP 120 VOLT SERVICE. METER SOCKET NOT REQUIRED IF METER INSTALLED AT SERVICE POINT. CIRCUITS TO BE AS SHOWN IN TABLE BELOW. SERVICE PEDESTAL TO CONTAIN LIGHTING CONTACTOR AND PHOTOCELL CONTROLS FOR ALL LIGHTING CIRCUITS. CABINET SHALL BE HOT DIPPED GALVANIZED STEEL FINISHED OR PAINTED IN COLOR SELECTED BY CITY. ENCLOSURE DOOR SHALL BE HINGED WITH PADLOCKABLE LATCH AND NO EXPOSED NUTS, BOLTS, SCREWS, OR OTHER FASTENERS. SERVICE PEDESTAL SHALL CONTAIN 100A MAIN BREAKER, SEPARATE FROM DUKE ENERGY DISCONNECT.

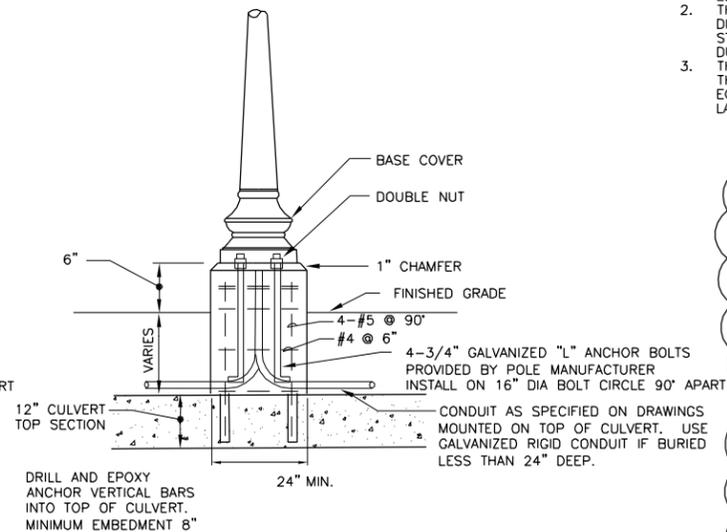
CONDUIT INSTALLATION NOTES:

1. ALL CONDUITS ARE TO BE 2" PVC SCH. 80 AND ARE TO BE BURIED 36" DEEP. ADVISE ENGINEER IF DIFFERENT DEPTS REQUIRED DUE TO CONFLICTS. ALL CONDUIT BENDS SHALL BE PVC-COATED GRS. COUPLINGS SHALL MATCH EXISTING.
2. INSTALL WARNING TAPE DIRECTLY ABOVE CONDUITS 6" TO 8" BELOW FINISHED GRADE.
3. LIGHTING CIRCUITS TO BE LABELED ACCORDING TO PHASE AND CIRCUIT NUMBER AT EACH LIGHT POLE.
4. SEE PLANS FOR LOCATIONS OF CONDUIT.



STANDARD LIGHT POLE BASE DETAIL

NTS



MODIFIED LIGHT POLE BASE DETAIL

NTS

NOTES:

1. EXTEND "L" ANCHORS TO TOP OF CULVERT IF CULVERT TO TOP OF BASE IS LESS THAN ANCHOR LENGTH. IF ANCHORS LENGTH IS LONG ENOUGH TO EXTEND THROUGH TOP OF CULVERT SLAB INSERT ANCHORS THROUGH SLAB SO "L" HOOKS ENGAGE BOTTOM OF TOP SLAB AND COVER HOOKS WITH EPOXY TO PROTECT FROM CORROSION. TWO OF THE DRILLED AND EPOXYED #5 BARS MAY BE ELIMINATED IF ANCHORS EXTEND THROUGH SLAB.
2. INSTALL 3/8 X 8 FT COPPERCLAD GROUND ROD AT EDGE OF CULVERT AND CONNECT TO ANCHOR BOLTS AND BASE PLATE WITH #8 INSULATED COPPER WIRE.

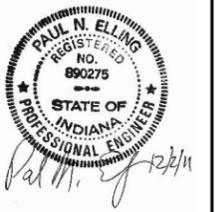
SECOND AND WALNUT LIGHTING SERVICE PEDESTAL CIRCUITS				
CIRCUIT	VOLTS	AMP RATING	CONDUCTOR	LOAD
1. STREET LIGHTS #1 & #2	120	20	2-#4, 1-#8 GND	2 LIGHTS, 2 DUPLEX OUTLETS
2. STREET LIGHTS #3, & #4	120	20	2-#6, 1-#10 GND	2 LIGHTS, 2 DUPLEX OUTLETS
3. STREET LIGHTS #5, 6 & #7	120	25	2-#2, 1-#6 GND	3 LIGHTS, 3 DUPLEX OUTLETS
4. SPARE	120	20		
5. SPARE	120	20		
6. SPARE	120	20		
7. SPARE	120	25		

NOTES:

1. ALL WIRE TO BE CONDUCTOR TYPE XHHW-2
2. ALL LIGHTS ARE TO BE 66 WATT.
3. EACH RECEPTACLE ON POLES SHALL BE GFCI 120V.

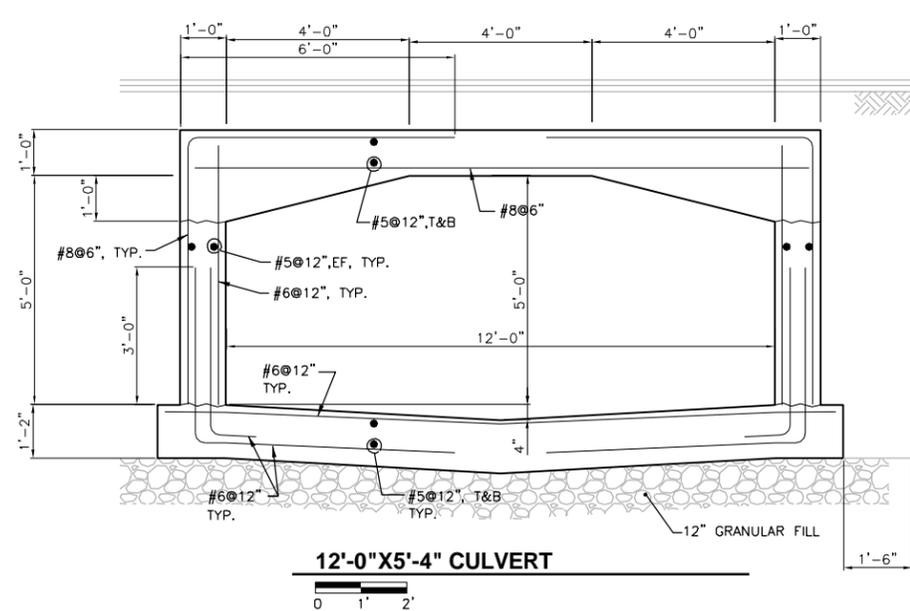
Date	01-09-12
Checked By	PNE
Drawn By	MRS
Revision Description	ADDENDUM 2
Revision Number	2

Designed By	PNE
Drawn By	PNE
Checked By	TJM
Approved By	PNE
Filename	246SD1.DWG
Project No.	11340&11721
Project Date	12/2/11

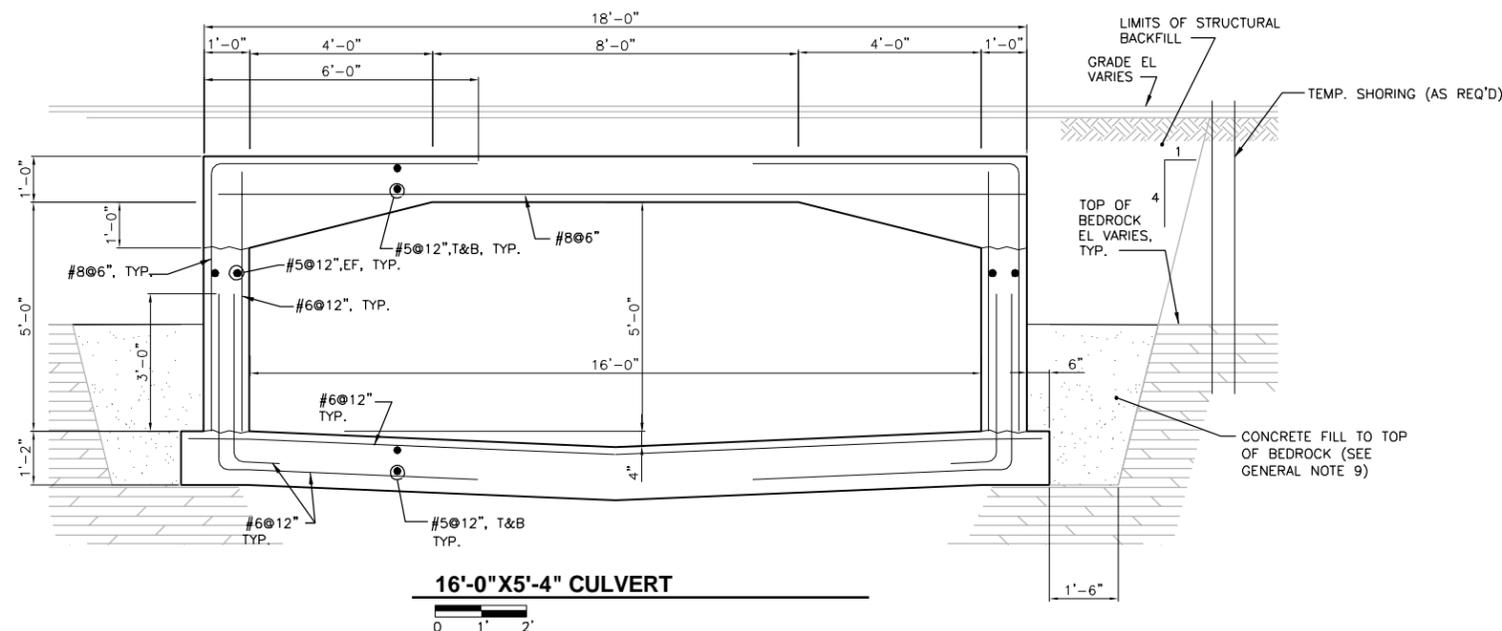


CITY OF BLOOMINGTON
 JORDAN RIVER AND LOWER SPANKERS STORM CULVERT
 RECONSTRUCTION AND STREETSCAPE - CONTRACT A
 BLOOMINGTON, INDIANA
 MISCELLANEOUS DETAILS
 ELECTRICAL CONNECTIONS

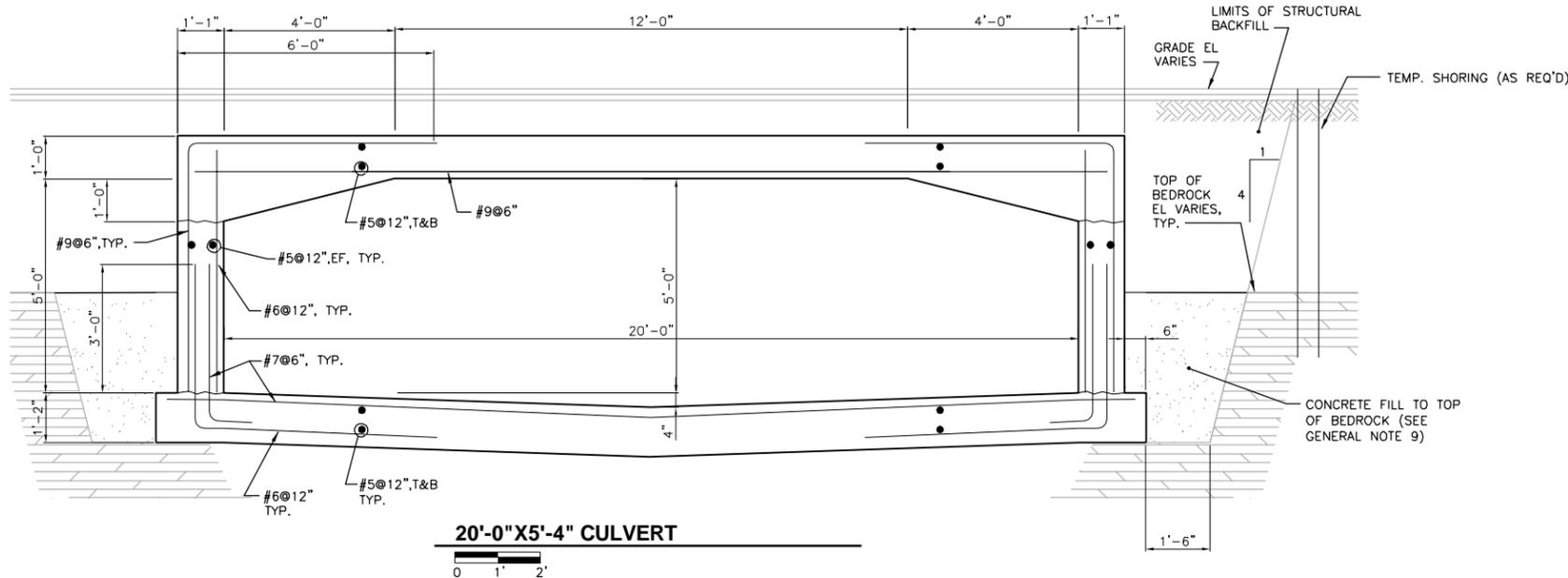




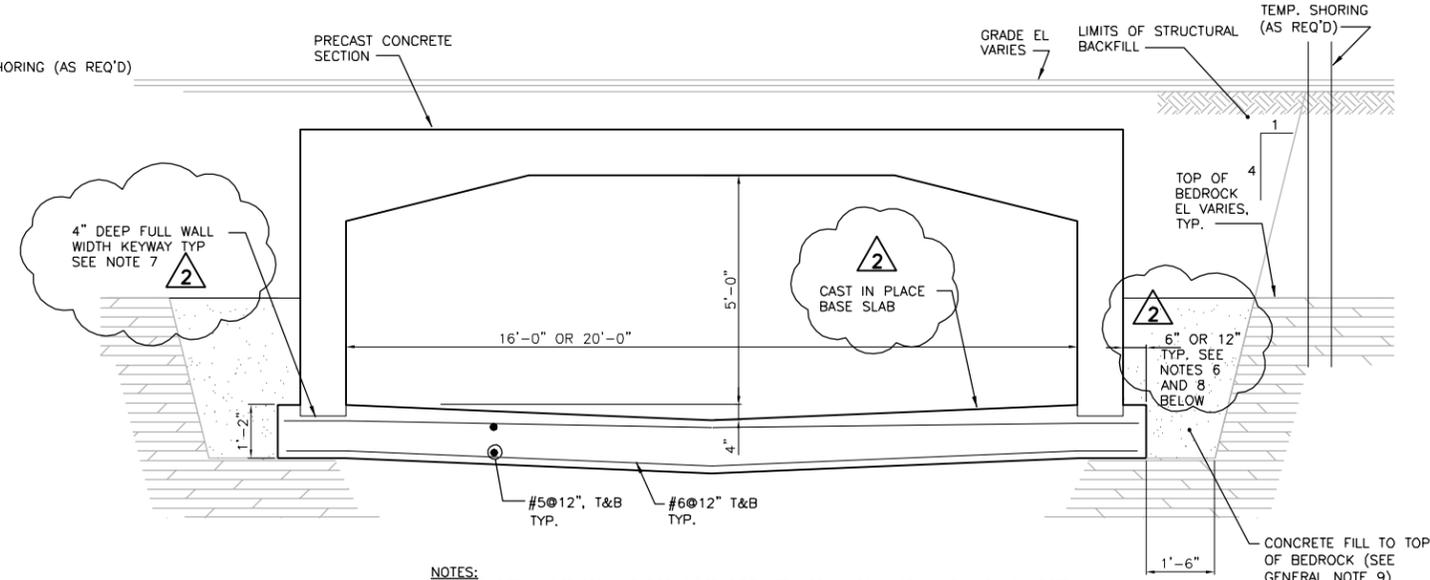
12'-0" X 5'-4" CULVERT



16'-0" X 5'-4" CULVERT



20'-0" X 5'-4" CULVERT



NOTES:

1. THIS DETAIL DEPICTS A THREE SIDED PRECAST OPTION TO CAST-IN-PLACE CONCRETE.
2. THIS DETAIL IS TO BE APPLIED TO STRAIGHT LENGTHS OF CULVERT ONLY.
3. THREE SIDED PRECAST SECTIONS MAY BE USED FOR THE 16'-0"x5'-4" AND 20'-0"x5'-4" CULVERT SECTIONS.
4. PROVIDE 8" MIN. JOINT WRAP AT PRECAST JOINTS THAT MEETS OR EXCEEDS THE REQUIREMENTS OF ASTM E-1745 AND ASTM C-990. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. ACCEPTABLE PRODUCT: CS-2121 POLYOLEFIN BACKED EXTERIOR JOINT WRAP BY CONSEAL.
5. PRECAST SECTIONS SHALL HAVE THE SAME INTERNAL SHAPE AS THE ADJOINING CAST-IN-PLACE SECTIONS TO PROVIDE UNIFORM HYDRAULIC CAPACITY.
6. 6" LIP ON CONCRETE BASE REQUIRED WHEN CONCRETE FILL IS INSTALLED TO AT LEAST 6" ABOVE THE BASE SLAB AT THE WALL. 12" LIP REQUIRED WHEN ROCK IS NON-EXISTANT OR IS BELOW 6" ABOVE BASE SLAB AT WALL.
7. FILL VOIDS BETWEEN PRECAST SECTIONS AND KEYWAY PER INDOT SECTION 723.
8. WHERE CULVERT SECTIONS ARE ADJACENT TO EXISTING STRUCTURES OR BUILDINGS AND ADEQUATE ROOM DOES NOT EXIST FOR COMPLIANCE WITH BASE LIP DIMENSIONS CONSULT WITH ENGINEER FOR DESIGN REVISIONS TO STABILIZE BASE TO WALL CONNECTION.

PRECAST ALTERNATE DETAIL



GENERAL NOTES:

1. THE 12'-0"x5'-4" CULVERT STRUCTURES SHALL BE ALL CAST-IN-PLACE CONCRETE TO PROPERLY RESTRAIN THE STRUCTURE FROM MOVEMENT.
2. ALL CULVERT BENDS SHALL BE CAST-IN-PLACE CONCRETE.
3. THREE SIDED PRECAST SECTIONS MAY BE USED FOR STRAIGHT 16'-0"x5'-4" AND 20'-0"x5'-4" CULVERT SECTIONS AS AN ALTERNATE TO CAST-IN-PLACE CONCRETE. IF PRECAST SECTIONS ARE USED THE REINFORCING AND CONCRETE DIMENSIONS SHALL CONFORM TO THAT SHOWN FOR CAST-IN-PLACE CONCRETE, OR THE CONTRACTOR MAY PREPARE AND SUBMIT FOR REVIEW DESIGN IN ACCORDANCE WITH INDOT SECTION 723. OPTION FOR FULL BOX CULVERT STRUCTURE WILL NOT BE PERMITTED.
4. TRANSITION STRUCTURE AND JUNCTION STRUCTURE SHALL BE CAST-IN-PLACE CONCRETE.
5. STRUCTURAL BACKFILL SHALL MEET THE GRADATION REQUIREMENTS FOR AN INDOT No. 8 STONE.
6. INLET STRUCTURES TO BE CONSTRUCTED OVER THE CULVERT SHALL BE LOCATED AS SHOWN ON DRAWINGS P-1 TO P-3.
7. CASTING 10 USED FOR INLETS OVER THE CULVERT SHALL BE ADJUSTED TO GRADE WITH CONCRETE BRICKS AND MORTAR IF ADJUSTMENT IS LESS THAN 6" IN HEIGHT. FOR ADJUSTMENTS OVER 6" IN HEIGHT PRECAST CONCRETE ADJUSTING RINGS WITH 24" INSIDE DIAMETER SHALL BE USED.
8. THE STORM INLET OPENING THROUGH THE ROOF OF THE CULVERT SHALL BE 24" X 18" IN SIZE WITH THE 24" DIMENSION PARALLEL WITH THE CURBLINE. THE MANHOLE ACCESS CASTINGS IN THE ROOF OF THE CULVERT AND STORM SEWER CONNECTIONS IN THE WALLS OF THE CULVERT SHALL BE SIZED AS REQUIRED. ADDITIONAL REINFORCING AROUND ALL THE OPENINGS SHALL BE PROVIDED AND CONFORM TO DETAIL S020 ON DRAWING S-8. FIELD ADJUST FINAL LOCATION OF CASTINGS AND STORM SEWERS SO NO OPENING IS LESS THAN 12" FROM EDGE OF PRECAST SECTIONS IF CONTRACTOR ELECTS TO USE PRECAST ALTERNATE. FIELD CUTTING OPENINGS WILL NOT BE PERMITTED TO AVOID CUTTING REINFORCEMENT.
9. CONCRETE FILL (F'c=2000 PSI) BETWEEN THE CULVERT STRUCTURE AND UNDISTURBED ROCK SHALL BE USED FOR THRUST RESTRAINT AND STRUCTURAL INTEGRITY FOR
 - 30 FT UPSTREAM OF A BEND (MEASURED FROM THE END OF CURVATURE)
 - 30 FT DOWNSTREAM OF A BEND (MEASURED FROM THE END OF CURVATURE)
 - THRU THE BEND SECTION
 - WHENEVER THREE SIDED PRECAST SECTIONS ARE USED
 - ON THE WEST FACE OF THE JUNCTION STRUCTURE (SEE DRWG S-3)
 STRUCTURAL BACKFILL MAY BE SUBSTITUTED FOR CONCRETE FILL IN OTHER AREAS WHERE STRAIGHT CAST IN PLACE CULVERT SECTIONS ARE USED.
10. STRUCTURAL BACKFILL SHALL BE COMPACTED TO 95% MODIFIED PROCTOR.

Revision Number	Revision Description	Drawn By	Checked By	Date
1	ADDENDUM 1	PNE	PNE	12-20-11
2	ADDENDUM 2	PNE	PNE	1-6-12

Designed By	SCP
Drawn By	HFF
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Approved By	PNE
Filename	246SS1.DWG
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CITY OF BLOOMINGTON
 JORDAN RIVER AND LOWER SPANKERS STORM CULVERT
 RECONSTRUCTION AND STREETScape - CONTRACT A
 BLOOMINGTON, INDIANA
**CULVERT STRUCTURE
 TYPICAL SECTIONS**