



The City of Grove City, Ohio

4035 Broadway • Grove City, Ohio 43123
(614) 277-3000

July 15, 2015

Darrel Rohrer
The Covenant Group
37 Lovella Drive
Hebron, OH 43025

Via email: Darrel@TheCovenantGroup.biz

RECEIVED

JUL 27 2015

GC PLANNING COMMISSION

Dear Mr. Rohrer:

Staff has reviewed your development plan application for the Canaan Land Church Building Expansion located at 2777 Gantz Road. The control number for this application is #201506290047 and should be referenced on any future correspondence concerning this matter.

Having compiled the comments/recommendations provided to the Development Department from our various departments, we request the following additional information and/or corrections:

Development Department (Kimberly Shields, 614-277-3007)

1. Multiple plan sheets are missing to consider this a complete Development Plan. Please submit the following plans on separate plan sheets with your revised materials: Grading plan, landscape plan (see comments from our Urban Forester), utility plan, photometric plan (see comment #2), and preliminary stormwater calculations.
2. A photometric plan is required showing lighting levels on the site. All vehicular and pedestrian areas must maintain a 0.5 footcandle minimum lighting level.
3. Please confirm that it is the desire of the property owner to tap into the sanitary sewer main for this project. A recent phone conversation with Joe Hammond gave staff the impression that this was not desired to be a part of the plan.
4. The proposed ponds along Gantz Road should be wet ponds with permanent normal pools and will be required to meet the city's Public and Private Pond Design Standards.
5. The proposed parking setback along the west property should be increased to 20' to meet Code requirements between incompatible land uses. Landscaping will also be required to be installed within this setback (see Urban Forestry comments for more detail).
6. Lighting fixtures should match those already utilized on the site.
7. All parking lot aisles should end in landscape islands in the new portion of the parking lot. According to the BZA's ruling on 7/26/10, landscape islands are not required in the existing parking lot.
8. BZA stated at their 7/26/10 meeting that nine trees will need to be planted on the property (with approval of the Urban Forester) to replace those that would have been planted in the landscape islands in the existing parking lot.
9. Building elevations should be submitted showing all four sides of the proposed addition, with the heights noted. Proposed materials should also be noted for all elevations.
10. An 8.5x11" exterior material detail sheet should be submitted outlining the color and manufacturer of all proposed exterior materials.
11. A material sample board should be submitted with samples of all proposed exterior materials.

Building Division (Laura Scott, 614-277-3086)

12. No landscaping or lighting plan.
13. Aisle behind church narrows to 20'. Is drop off to be one way circulation?
14. Does not meet parking setback of 20' adjacent to incompatible use or landscaping requirements.

Urban Forestry (Jodee Lowe, 614-277-1103)

A Landscape Plan should be submitted that includes the following:

15. 1136.05 (b) Tree Inventory: Need to have a list and map showing all existing trees that are on the property that are 6" in caliper or larger
16. 1136.06(a) (1): Frontage Along Public Streets: Parking spaces facing Gantz Road are required to have one of the following options:
 - **Option A:** 10' minimum parking set back with a continuous 3' height evergreen hedge;
 - **Option B:** 10' minimum parking set back with a continuous 3-5' maximum height wall constructed of like materials on the building; or
 - **Option C:** 20' minimum parking set back with a continuous 3' in height earthen mound. In addition to one of these options, a 2" minimum caliper tree needs to be planted for every 35' of frontage
17. 1136.06(a) (c): Rear and Side Yards Adjacent Incompatible Use Districts: Between the parking lot and western property boundary (Village at Gantz Meadows), one of the following options:
 - **Option A:** 20' minimum setback with either a continuous 6' height wall or solid fence or a 90" opaque 5' height evergreen screen, or a combination thereof. In addition to the wall or fence, one 2" caliper small class tree, two 6' height evergreen trees, and two 18" height deciduous shrubs are to be planted per each 40 lineal feet of property line. You are also encouraged to install additional planting beds with annual or perennial flowers to increase the aesthetic appeal of the parking side of the screen.
 - **Option B:** 30' setback with a continuous 4' height earthen mound. In addition to the mounding, a double staggered row of 6' height minimum evergreen trees at 20' maximum spacing and one 2" caliper minimum small class tree and two 18" height deciduous shrubs per each 40 lineal feet of property line.
18. 1136.06(d): Parking Lot Islands: City Code requires to have at least 9 island beds in the new parking lot addition based on the number of parking spaces being added; it appears from the plans that there needs to be a total of 22 island beds in the parking lot. Each island needs to have a 2" minimum caliper tree per island bed
19. 1136.09: Landscaping Abutting the Structure: City Code requires that there be one 2" minimum caliper tree planted per each 40 lineal feet of building perimeter. 6 trees are required in addition to 64 square feet minimum of landscape area. Trees should be arranged around all sides of the building.
20. 1136.10: Retention Pond Area: City Code requires that a 2" minimum caliper tree be planted in a landscape area for every 50 lineal feet of retention area. Retention area on west side of property would require 5 trees and the retention area on the east side would require 6 trees.
21. 1136.11: Grass seed/Sod: Need to show on the plans where grass seed and sod will be used to establish lawn areas

Service Department (Cindi Fitzpatrick, 614-277-1110)

22. Comments not received

Engineering, EMH&T (Erik Meininger, 614-775-4436)

23. State the total proposed lot coverage and landscaping percentages
24. Show the existing or proposed building locations on the adjacent property (plans for Village at Gantz Meadows are available for view and download online (<http://www.grovecityohio.gov/development/ongoing-development/>)).
25. Label the right-of-way on the east side of Gantz Road consistently with the other rights-of-way
26. Show the front setback at 30 feet per Grove City Code Table 1135.12-II.
27. Identify the garbage pick-up location
28. Provide dumpster and mechanical equipment screening details. The dumpster should be screened in brick to match the main structure and should have stained wood gates.
29. Label pipe sizes and grade of existing gravity sewers
30. Provide a full stormwater management plan that includes pre- and post-developed drainage boundary exhibits and a stormwater management narrative/calculations that reflect how the proposed development will comply with the City's stormwater detention and post-construction water quality requirements with the construction submittal. Include the applicable water quality drawdown calculations to demonstrate compliance with the BMP requirements in Ohio EPA's General Permit.
31. Provide calculations and design features that ensure the proposed wet basins meet the requirements of the Public and Private Pond Design Standards (available on the City's website).

Grove City Division of Police (Jeff Pearson, 614-277-1709)

32. Comments not received

Jackson Township Fire Department (Tammy Green, 614-945-5043)

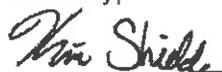
33. Comments not received

Please revise your materials accordingly and submit twenty (20) completely folded copies along with a response letter indicating how each issue noted was addressed in the revised plans to my attention by 12:00 p.m. on Monday, July 27th. This will allow us time to review the revisions prior to finalizing the agenda for the August Planning Commission meeting. If for any reason you feel a meeting with staff is warranted prior to the Planning Commission meeting, please call me as soon as possible to arrange a date and time. If revised drawings cannot be submitted by the above deadline, the Development Department will recommend that this application be postponed until the September Planning Commission meeting; however, if the above deadline is met, staff will recommend that your application be heard as described below.

Planning Commission will hear your request on Tuesday, August 4th, 2015 in the lower level of City Hall at 1:30 p.m. Your request will be postponed to a future date if you are unable to attend the meeting.

If you have any questions or need additional information, please call me at 277-3007 or email kshields@grovecityohio.gov.

Sincerely,



Kimberly Shields, AICP
Planning and GIS Supervisor

The Covenant Group

37 Louella Drive

Hebron, Ohio 43025

Canaan Land FWB Church

2777 Gantz Road

Grove City, Ohio

Response to Planning Commission Letter of July 15, 2015

1. Multiple plan sheets are missing to consider this a complete Development Plan. Please submit the following plans on separate plan sheets with your revised materials: Grading plan, landscape plan (see comments from our Urban Forester), utility plan, photometric plan (see comment #2), and preliminary stormwater calculations.

The development plan set now includes a grading plan, landscape plan, utility plan and photometric plan. Preliminary stormwater calculations have also been included.

2. A photometric plan is required showing lighting levels on the site. All vehicular and pedestrian areas must maintain a 0.5 footcandle minimum lighting level.

A separate plan sheet showing the photometric layout for the site is included as part of the plan set.

3. Please confirm that it is the desire of the property owner to tap into the sanitary sewer main for this project. A recent phone conversation with Joe Hammond gave staff the impression that this was not desired to be a part of the plan.

The building committee of the church has gone on record as desiring to tap into the Grove City sanitary sewer for this project. Mr. Dick Brush, head of the building committee, has confirmed this desire. The connection will be a 6-inch lateral extending across the adjoining property to a connection to the sanitary sewer from the Villages (to the west). As part of the lateral connection, the church will obtain a dedicated easement from the adjoining property owner.

4. The proposed ponds along Gantz Road should be wet ponds with permanent normal pools and will be required to meet the city's Public and Private Pond Design Standards.

Detailed plans for the design of the retention ponds will be submitted as part of the site improvement plans. The proposed ponds will be designed with permanent normal pools and will meet the city's Public and Private Pond Design Standards.

5. The proposed parking setback along the west property should be increased to 20' to meet Code requirements between incompatible land uses. Landscaping will also be required to be installed within this setback (see Urban Forestry comments for more detail).

The proposed new parking along the west property has been increased from 17 feet to 20 feet to meet Code requirements. Landscaping is shown in this location. The existing parking area will be maintained.

6. Lighting fixtures should match those already utilized on the site.

The proposed lighting fixtures shown on the plan have been selected to match the existing units.

7. All parking lot aisles should end in landscape islands in the new portion of the parking lot. According to the BZA's ruling on 7/26/10, landscape islands are not required in the existing parking lot.

The plans have been revised to show landscape islands in the new portions of the parking lot.

Landscaping is also shown in these islands.

8. BZA stated at their 7/26/10 meeting that nine trees will need to be planted on the property (with approval of the Urban Forester) to replace those that would have been planted in the landscape islands in the existing parking lot.

Nine additional trees will be planted on the property in locations to be approved by the Urban Forester.

These are being planted in lieu of construction of landscape islands in the existing parking lot. The landscape plan submitted as part of this development plan shows proposed locations for the nine trees.

9. Building elevations should be submitted showing all four sides of the proposed addition, with the heights noted. Proposed materials should also be noted for all elevations.

Building elevations, prepared by the architect, accompany this submittal.

10. An 8.5x11" exterior material detail sheet should be submitted outlining the color and manufacturer of all proposed exterior materials.

Material detail sheets, prepared by the architect, accompany this submittal.

11. A material sample board should be submitted with samples of all proposed exterior materials.

Physical samples of the exterior materials, prepared by the architect, accompany this submittal.

12. No landscaping or lighting plan.

Per response to comment no. 1, these plans are now part of the development plan set.

13. Aisle behind church narrows to 20'. Is drop off to be one way circulation?

The aisle behind the church is not the drop off area. The drop off area is under the porta-cochere on the east side of the new building and will be one way, as shown on the plan. The aisle behind the church will only be used to access the existing parking area and will be two way (in and out). This is an existing access drive and no changes are planned.

14. Does not meet parking setback of 20' adjacent to incompatible use or landscaping requirements.

Per response to comment no. 5, the parking setback has been modified.

15. 1136.05 (b) Tree Inventory: Need to have a list and map showing all existing trees that are on the property that are 6" in caliper or larger.

16. 1136.06(a) (1): Frontage Along Public Streets: Parking spaces facing Gantz Road are required to have one of the following options:

Option A: 10' minimum parking set back with a continuous 3' height evergreen hedge;

Option B: 10' minimum parking set back with a continuous 3-5' maximum height wall constructed of like materials on the building; or

Option C: 20' minimum parking set back with a continuous 3' in height earthen mound. In addition to one of these options, a 2" minimum caliper tree needs to be planted for every 35' of frontage

Option A that includes a 10 feet minimum parking set back with a continuous 3 feet high evergreen hedge will be planted along the parking area facing Gantz Road. This is shown on the landscape plan.

17. 1136.06(a) (c): Rear and Side Yards Adjacent Incompatible Use Districts: Between the parking lot and western property boundary (Village at Gantz Meadows), one of the following options:
Option A: 20' minimum setback with either a continuous 6' height wall or solid fence or a 90" opaque 5' height evergreen screen, or a combination thereof. In addition to the wall or fence, one 2" caliper small class tree, two 6' height evergreen trees, and two 18" height deciduous shrubs are to be planted per each 40 lineal feet of property line. You are also encouraged to install additional planting beds with annual or perennial flowers to increase the aesthetic appeal of the parking side of the screen.
Option B: 30' setback with a continuous 4' height earthen mound. In addition to the mounding, a double staggered row of 6' height minimum evergreen trees at 20' maximum spacing and one 2" caliper minimum small class tree and two 18" height deciduous shrubs per each 40 lineal feet of property line.

Option A described above has been incorporated into the landscape plan for this site.

18. 1136.06(d): Parking Lot Islands: City Code requires to have at least 9 island beds in the new parking lot addition based on the number of parking spaces being added; it appears from the plans that there needs to be a total of 22 island beds in the parking lot. Each island needs to have a 2" minimum caliper tree per island bed.
19. 1136.09: Landscaping Abutting the Structure: City Code requires that there be one 2" minimum caliper tree planted per each 40 lineal feet of building perimeter. 6 trees are required in addition to 64 square feet minimum of landscape area. Trees should be arranged around all sides of the building
20. 1136.10: Retention Pond Area: City Code requires that a 2" minimum caliper tree be planted in a landscape area for every 50 lineal feet of retention area. Retention area on west side of property would require 5 trees and the retention area on the east side would require 6 trees.
21. 1136.11: Grass seed/Sod: Need to show on the plans where grass seed and sod will be used to establish lawn areas

22. Comments not received

No response needed.

23. State the total proposed lot coverage and landscaping percentages.

24. Show the existing or proposed building locations on the adjacent property (plans for Village at Gantz Meadows are available for view and download online (<http://www.grovecityohio.gov/development/ongoing-development/>)).

The development plan has been revised to show the locations of the nearest buildings on the adjacent property to the west. The locations were taken from the development plans on file with Grove City.

25. Label the right-of-way on the east side of Gantz Road consistently with the other rights-of-way. *The right-of-way on the east side of Gantz Road has been labeled to be consistent with the other rights-of-way.*

26. Show the front setback at 30 feet per Grove City Code Table 1135.12-II. *The development plan has been revised to show a front setback of 30 feet.*

27. Identify the garbage pick-up location.

Refuse and garbage generated from the church will be collected in dumpsters located on site.

28. Provide dumpster and mechanical equipment screening details. The dumpster should be screened in brick to match the main structure and should have stained wood gates.

Attached details –location shown on site plan

29. Label pipe sizes and grade of existing gravity sewers.

There are no existing gravity sewers on the property. As noted in the response to comment no. 3, the church proposes to extend a 6-inch lateral from the building to a manhole connection on the adjacent Village at Gantz Meadows sanitary sewer. The church will negotiate an easement for the permanent connection of the building lateral.

30. Provide a full stormwater management plan that includes pre- and post-developed drainage boundary exhibits and a stormwater management narrative/calculations that reflect how the proposed development will comply with the City's stormwater detention and post-construction water quality requirements with the construction submittal. Include the applicable water quality drawdown calculations to demonstrate compliance with the BMP requirements in Ohio EPA's General Permit.

A stormwater management report will be prepared for the site and submitted with the site improvement plans. The report will include figures showing the pre- and post-developed drainage boundaries of the site. The report will include a narrative explaining how the proposed site improvements will comply with the City's stormwater detention and post-construction water quality requirements. The report will include calculations to demonstrate compliance with the BMP requirements of Ohio EPA's General Permit No. OHC00004.

31. Provide calculations and design features that ensure the proposed wet basins meet the requirements of the Public and Private Pond Design Standards (available on the City's website).

Wet basins are planned and design features will be shown on the site improvement plans. Calculations will be provided in the stormwater management report that will be prepared as described in comment response to item. 30.

32. Comments not received

No response needed.

33. Comments not received
No response needed.

THE COVENANT GROUP

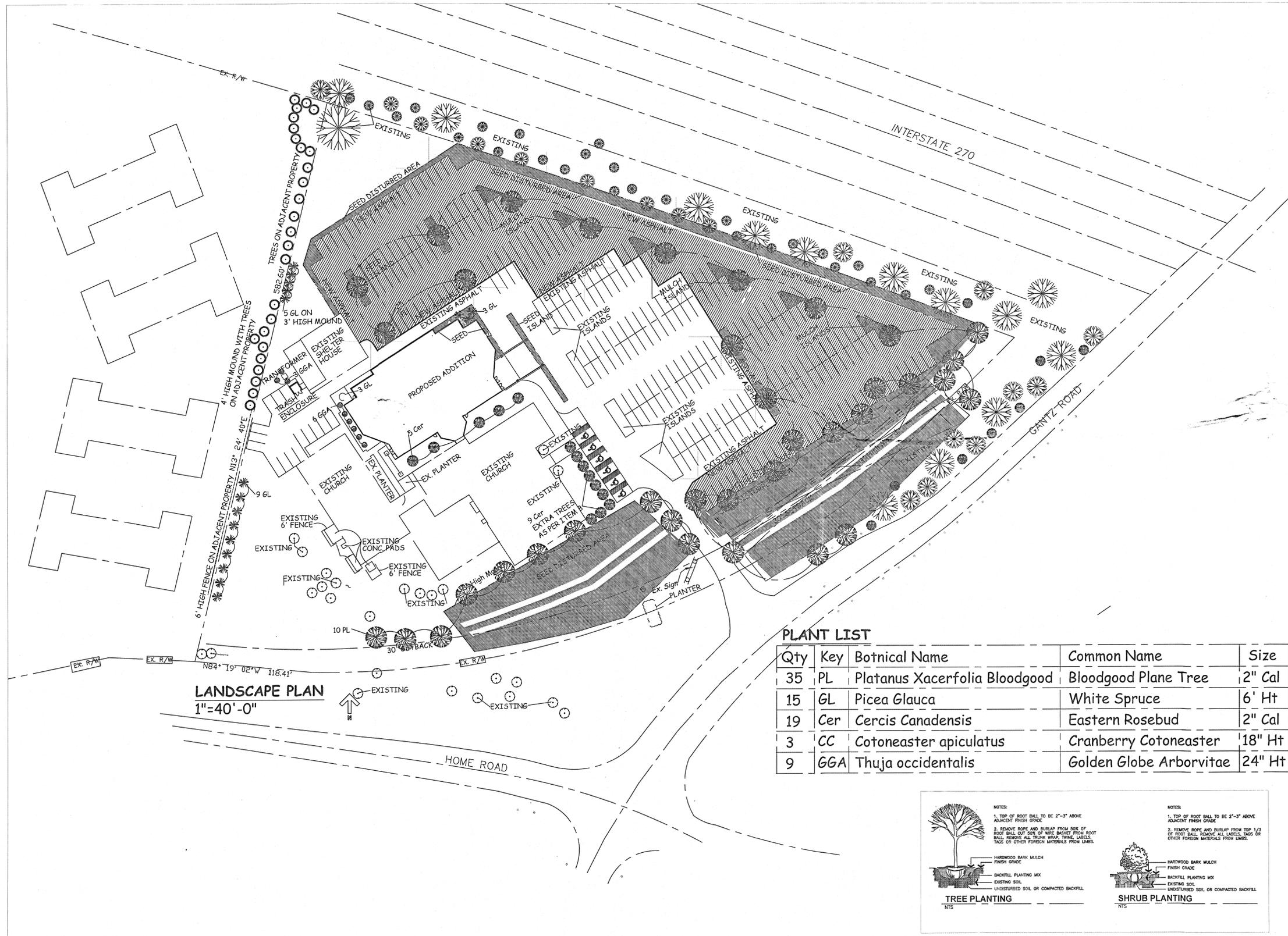
37 LOUELLA DRIVE
HEBRON, OH

CANAAN LAND FWB CHURCH
2777 GANTZ ROAD
GROVE CITY, OHIO

REVISIONS

DATE
8-10-15

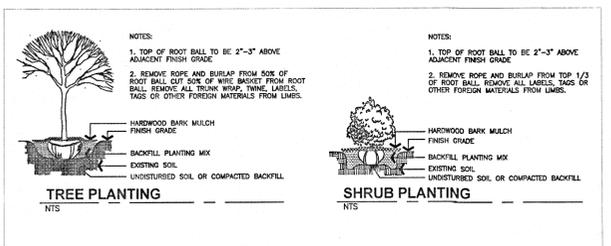
LANDSCAPE

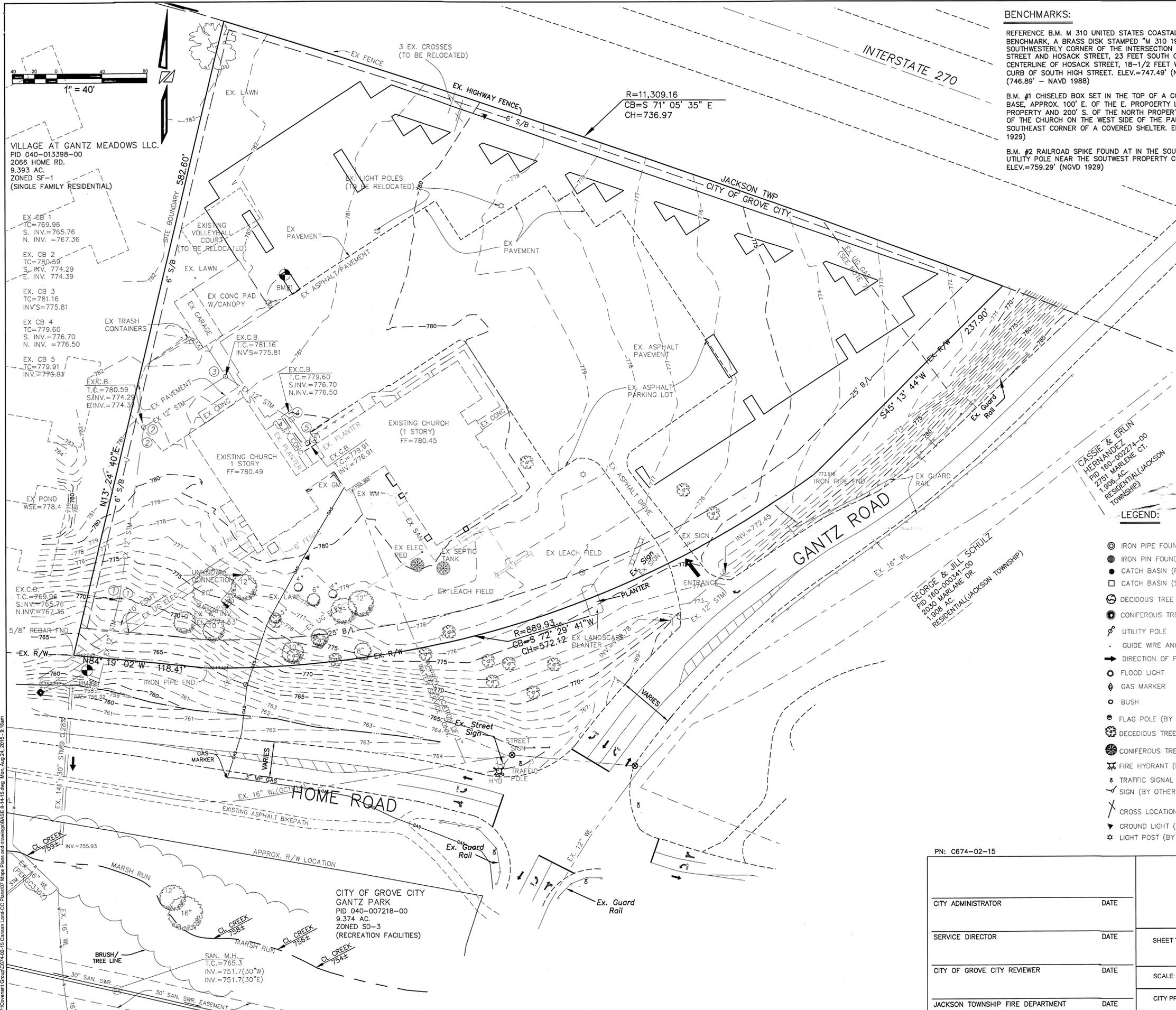


LANDSCAPE PLAN
1"=40'-0"

PLANT LIST

| Qty | Key | Botanical Name | Common Name | Size |
|-----|-----|------------------------|-------------------------|-----------------------------|
| 35 | PL | Platanus Xacerfolia | Bloodgood | Bloodgood Plane Tree 2" Cal |
| 15 | GL | Picea Glauca | White Spruce | 6' Ht |
| 19 | Cer | Cercis Canadensis | Eastern Rosebud | 2" Cal |
| 3 | CC | Cotoneaster apiculatus | Cranberry Cotoneaster | 18" Ht |
| 9 | GGA | Thuja occidentalis | Golden Globe Arborvitae | 24" Ht |



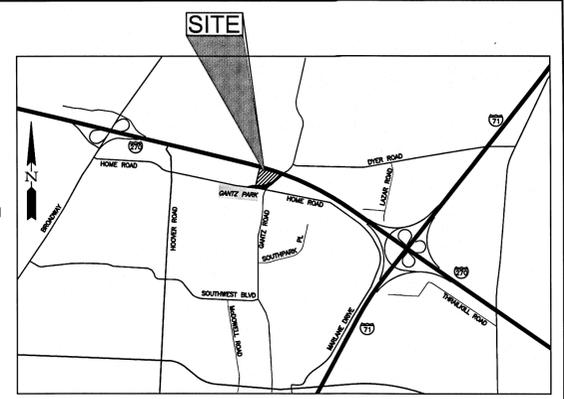


BENCHMARKS:

REFERENCE B.M. M 310 UNITED STATES COASTAL AND GEODETIC BENCHMARK, A BRASS DISK STAMPED "M 310 1967" FOUND AT THE SOUTHWESTERLY CORNER OF THE INTERSECTION OF SOUTH HIGH STREET AND HOSACK STREET, 23 FEET SOUTH OF THE EXTENDED CENTERLINE OF HOSACK STREET, 18-1/2 FEET WEST OF THE WEST CURB OF SOUTH HIGH STREET. ELEV.=747.49' (NGVD 1929) - (746.89' - NAVD 1988)

B.M. #1 CHISELED BOX SET IN THE TOP OF A CONCRETE LIGHT POLE BASE, APPROX. 100' E. OF THE E. PROPERTY LINE OF SUBJECT PROPERTY AND 200' S. OF THE NORTH PROPERTY LINE, JUST NORTH OF THE CHURCH ON THE WEST SIDE OF THE PARKING LOT AT THE SOUTHEAST CORNER OF A COVERED SHELTER. ELEV.=784.43' (NGVD 1929)

B.M. #2 RAILROAD SPIKE FOUND AT IN THE SOUTH SIDE OF A UTILITY POLE NEAR THE SOUTHWEST PROPERTY CORNER. ELEV.=759.29' (NGVD 1929)



VICINITY MAP

NOTES:

- ELEVATIONS SHOWN HEREON ARE BASED ON A SURVEY PERFORMED IN AUGUST, 2003 AND VERIFIED BY GPS OBSERVATIONS ON US&GS BM# M 310 AND ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929.
- BEARINGS HEREON ARE BASED ON THE SOURCE DEED OF RECORD IN O.R. 04195, PG. F17 AND VERIFIED BY GPS OBSERVATIONS ON FRANKLIN COUNTY GEODETIC CONTROL MONUMENTS FRANK 25 AND FRANK 35.
- TOPOGRAPHY FOR THE ENTIRE SITE SHOWN HEREON WAS PERFORMED BY AMERICAN LAND SURVEYORS.
- LOCATIONS WITHIN THE "AREA OF CONCERN" WERE PERFORMED BY AMERICAN LAND SURVEYORS. LOCATIONS OUTSIDE OF THE AREA OF CONCERN WERE NOT IN THIS CONTRACT AND WERE BROUGHT FORTH FROM A PREVIOUS SURVEY PERFORMED IN AUGUST 2003.
- THE SEPTIC SYSTEM WAS LOCATED BY AMERICAN LAND SURVEYORS
- THE STORM SEWER SYSTEM WHICH RUNS THROUGH THE "AREA OF CONCERN" WAS LOCATED ENTIRELY BY AMERICAN LAND SURVEYORS.
- THE GAS LINE WHICH CROSSES THE NORTHEAST CORNER OF THIS PROPERTY IS COVERED BY A "BLANKET" EASEMENT GRANTED TO "ASHLAND OIL AND REFINING COMPANY", OF RECORD IN VOL. 1918, PG. 103, AND TO "OHIO RIVER PIPE LINE COMPANY", SUCCESSOR TO ASHLAND OIL AND REFINING COMPANY BY O.R. 2403, PG. D02.
- AN EASEMENT FOR UNDERGROUND ELECTRIC TO COLUMBUS AND SOUTHERN ELECTRIC COMPANY, OF RECORD IN O.R. 4612, PG. I18 AND DATED JULY 1984 APPLIES TO THE SITE SHOWN HEREON. THIS EASEMENT IS NOT DEFINED IN THE DEED, HOWEVER, ITS APPROXIMATE LOCATION IS SHOWN IN A LATER EASEMENT DOCUMENT OF RECORD IN INST# 20040317008353. DRAWINGS ARE AVAILABLE AT THE DIVISION OF ENGINEERING OF SAID COLUMBUS AND SOUTHERN ELECTRIC COMPANY.
- AN EASEMENT FOR UNDERGROUND ELECTRIC TO COLUMBUS SOUTHERN POWER COMPANY, OF RECORD IN INST.# 200403170058353 AND DATED MARCH, 2004 APPLIES TO THE SITE SHOWN HEREON. THIS EASEMENT IS 10 FEET WIDE AND IS CENTERED ON THE INSTALLED LOCATION OF SAID ELECTRIC. IT IS LOCATED IN THE SOUTHWEST CORNER OF THE PROPERTY AND SERVICES THE 2003 ADDITION.

LEGEND:

- ⊙ IRON PIPE FOUND
- IRON PIN FOUND (REBAR)
- CATCH BASIN (ROUND)
- CATCH BASIN (SQUARE)
- ⊕ DECIDUOUS TREE AND DIAMETER
- ⊕ CONIFEROUS TREE AND DIAMETER
- ⊕ UTILITY POLE
- ⊕ GUIDE WIRE ANCHOR
- ➔ DIRECTION OF FLOW
- ⊕ FLOOD LIGHT
- ⊕ GAS MARKER
- BUSH
- ⊕ FLAG POLE (BY OTHERS)
- ⊕ DECIDUOUS TREE (BY OTHERS)
- ⊕ CONIFEROUS TREE (BY OTHERS)
- ⊕ FIRE HYDRANT (BY OTHERS)
- ⊕ TRAFFIC SIGNAL POLE (BY OTHERS)
- ⊕ SIGN (BY OTHERS)
- ⊕ CROSS LOCATIONS (BY OTHERS)
- ⊕ GROUND LIGHT (BY OTHERS)
- ⊕ LIGHT POST (BY OTHERS)

CASSIE & ERLIN
HERNANDEZ
PID 80-002274-00
2771 MARLINE CT.
1.908 AC.
RESIDENTIAL (JACKSON
TOWNSHIP)

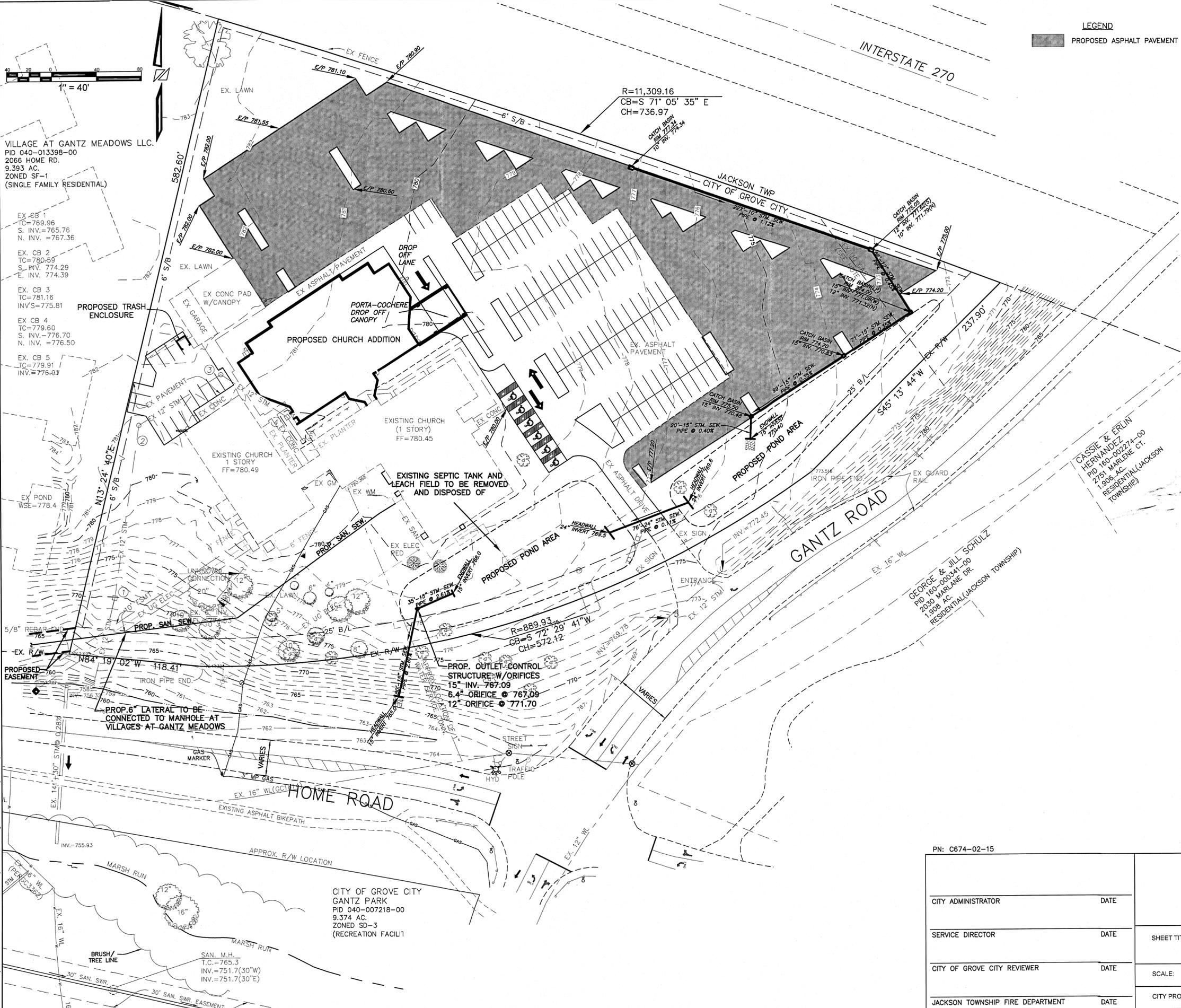
GEORGE & JILL SCHULZ
PID 160-006341-00
2030 MARLANE DR.
1.908 AC.
RESIDENTIAL (JACKSON TOWNSHIP)

PN: C674-02-15

| | |
|----------------------------------|------|
| CITY ADMINISTRATOR | DATE |
| SERVICE DIRECTOR | DATE |
| CITY OF GROVE CITY REVIEWER | DATE |
| JACKSON TOWNSHIP FIRE DEPARTMENT | DATE |

| | |
|---|----------------------------|
| CHURCH EXPANSION CANAAN LAND CHURCH 2777 GANTZ ROAD GROVE CITY, OHIO 43123 | |
| SHEET TITLE: | EXISTING CONDITIONS |
| SCALE: | 1" = 40' |
| SHEET: | 1/3 |
| CITY PROJECT NO. | DATE: AUGUST, 2015 |

P:\Government Group\0294-02-15 Canaan Land-CC Plans\07 Maps Plans and drawings\BASE E-14-15 Aug Mon, Aug 24, 2015 5:18pm



LEGEND
 PROPOSED ASPHALT PAVEMENT

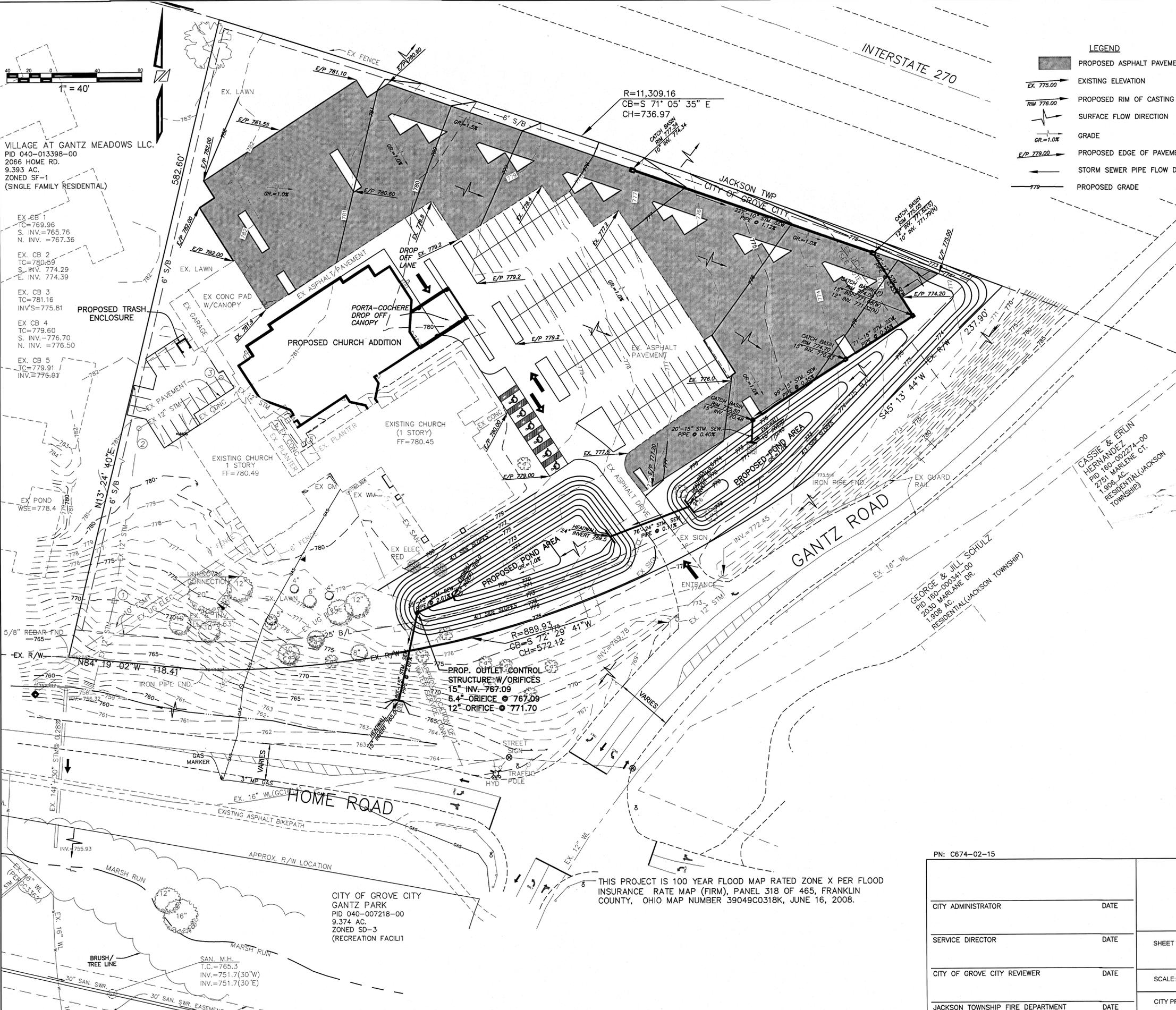
LEGEND:

- IRON PIPE FOUND
- IRON PIN FOUND (REBAR)
- CATCH BASIN (ROUND)
- CATCH BASIN (SQUARE)
- ⊙ DECIDUOUS TREE AND DIAMETER
- ⊙ CONIFEROUS TREE AND DIAMETER
- ⊙ UTILITY POLE
- ⊙ GUIDE WIRE ANCHOR
- ➔ DIRECTION OF FLOW
- ⊙ FLOOD LIGHT
- ⊙ GAS MARKER
- BUSH
- ⊙ FLAG POLE (BY OTHERS)
- ⊙ DECIDUOUS TREE (BY OTHERS)
- ⊙ CONIFEROUS TREE (BY OTHERS)
- ⊙ FIRE HYDRANT (BY OTHERS)
- ⊙ TRAFFIC SIGNAL POLE (BY OTHERS)
- ⊙ SIGN (BY OTHERS)
- ⊙ CROSS LOCATIONS (BY OTHERS)
- ⊙ GROUND LIGHT (BY OTHERS)
- ⊙ LIGHT POST (BY OTHERS)

P:\Government Group\C674-02-15 Canaan Land-CC Plans\07 Maps Plans and Drawings\BASE & 14-15.dwg Mon, Aug 24, 2015 - 9:18am

PN: C674-02-15

| | | | | | |
|----------------------------------|--|------|---|---------------------------|------------------------------|
| CITY ADMINISTRATOR | | DATE | CHURCH EXPANSION CANAAN LAND CHURCH 2777 GANTZ ROAD GROVE CITY, OHIO 43123 | | |
| SERVICE DIRECTOR | | DATE | | | SHEET TITLE: |
| CITY OF GROVE CITY REVIEWER | | DATE | | | PROPOSED UTILITY PLAN |
| JACKSON TOWNSHIP FIRE DEPARTMENT | | DATE | SCALE: | 1" = 40' | |
| | | | CITY PROJECT NO. | SHEET: 3/3 | |
| | | | | DATE: AUGUST, 2015 | |



- LEGEND**
- PROPOSED ASPHALT PAVEMENT
 - EXISTING ELEVATION
 - PROPOSED RIM OF CASTING ELEVATION
 - SURFACE FLOW DIRECTION
 - GRADE
 - PROPOSED EDGE OF PAVEMENT
 - STORM SEWER PIPE FLOW DIRECTION
 - PROPOSED GRADE

- LEGEND:**
- IRON PIPE FOUND
 - IRON PIN FOUND (REBAR)
 - CATCH BASIN (ROUND)
 - CATCH BASIN (SQUARE)
 - DECIDUOUS TREE AND DIAMETER
 - CONIFEROUS TREE AND DIAMETER
 - UTILITY POLE
 - GUIDE WIRE ANCHOR
 - DIRECTION OF FLOW
 - FLOOD LIGHT
 - GAS MARKER
 - BUSH
 - FLAG POLE (BY OTHERS)
 - DECIDUOUS TREE (BY OTHERS)
 - CONIFEROUS TREE (BY OTHERS)
 - FIRE HYDRANT (BY OTHERS)
 - TRAFFIC SIGNAL POLE (BY OTHERS)
 - SIGN (BY OTHERS)
 - CROSS LOCATIONS (BY OTHERS)
 - GROUND LIGHT (BY OTHERS)
 - LIGHT POST (BY OTHERS)

VILLAGE AT GANTZ MEADOWS LLC.
 PID 040-013398-00
 2066 HOME RD.
 9.393 AC.
 ZONED SF-1
 (SINGLE FAMILY RESIDENTIAL)

EX. CB 1
 TC=789.96
 S. INV.=765.76
 N. INV.=767.36

EX. CB 2
 TC=780.59
 S. INV.=774.29
 E. INV.=774.39

EX. CB 3
 TC=781.16
 INV'S=775.81

EX. CB 4
 TC=779.60
 S. INV.=776.70
 N. INV.=776.50

EX. CB 5
 TC=779.91
 INV.=776.91

EX. POND
 WISE=778.4

5/8" REBAR TND
 =765

EX. R/W
 N84°19'02"W 118.41'

EX. 16" WL
 (PER CC3362)

BRUSH/TREE LINE

SAN. M.H.
 T.C.=765.3
 INV.=751.7(30"W)
 INV.=751.7(30"E)

PROPOSED TRASH ENCLOSURE

EXISTING CHURCH
 1 STORY
 FF=780.49

EXISTING CHURCH
 1 STORY
 FF=780.45

PROPOSED POND AREA

HOME ROAD

CITY OF GROVE CITY
 GANTZ PARK
 PID 040-007218-00
 9.374 AC.
 ZONED SD-3
 (RECREATION FACILI)

R=11,309.16
 CB=S 71° 05' 35" E
 CH=736.97

R=889.93
 CB=S 72° 29' 41" W
 CH=572.12

PROP. OUTLET CONTROL
 STRUCTURE W/ORIFICES
 15" INV.=767.09
 8.4" ORIFICE @ 767.09
 12" ORIFICE @ 771.70

THIS PROJECT IS 100 YEAR FLOOD MAP RATED ZONE X PER FLOOD INSURANCE RATE MAP (FIRM), PANEL 318 OF 465, FRANKLIN COUNTY, OHIO MAP NUMBER 39049C0318K, JUNE 16, 2008.

PN: C674-02-15

| | |
|----------------------------------|------|
| CITY ADMINISTRATOR | DATE |
| SERVICE DIRECTOR | DATE |
| CITY OF GROVE CITY REVIEWER | DATE |
| JACKSON TOWNSHIP FIRE DEPARTMENT | DATE |

| | |
|---|--------------|
| CHURCH EXPANSION CANAAN LAND CHURCH 2777 GANTZ ROAD GROVE CITY, OHIO 43123 | |
| SHEET TITLE: PROPOSED GRADING PLAN | |
| SCALE: | 1" = 40' |
| CITY PROJECT NO. | SHEET: 2/3 |
| DATE: | AUGUST, 2015 |

Canaan Land FWB Church

2777 Gantz Road

Grove City, Ohio



Exterior Finishes

| <u>Item</u> | <u>Color</u> | <u>Manufacturer</u> |
|--------------------|----------------------|----------------------------|
| Brick | Harvest Blend | Bowerston |
| Stone | Sagewood | |
| | Field Stone | Dutch Quality |
| Cement Panels | Heritage Clay | Allura |
| Vinyl Siding | Sandstone Beige | Certainteed |
| Standing Seam Roof | Fieldstone | Chief Buildings |
| Fascia | White | Hager |
| Storefront | Solar Bronze | Kawneer |
| Clear Glass | Low E, Double glazed | |

H.I.D. AREA LIGHTING

RSBPT SERIES-HID

S P E C I F I C A T I O N S

HOUSING

Heavy wall spun aluminum construction. Entire housing surface shall be free of welds or seams. 3"x5"x6" long heavy wall extruded aluminum arm is secured to housing and to pole with stainless steel rods.

ARM

Four (4) extruded aluminum (.84" O.D.) arms welded to a cast aluminum pole top fitter. Arms are internally welded to housing.

LENS ASSEMBLY

One piece hinged heavy gauge die formed aluminum door frame surrounds 3/16" clear tempered flat glass lens. Glass is sealed to door with high temperature silicone seal. Captive thumb screw disengages lens assembly and activates Accuhinge™ hinge to allow lens assembly to hinge away from housing for luminaire access without the use of tools

REFLECTOR MODULE

Specular Alzak® optical segments rigidly mounted in an aluminum frame, which attaches to the housing as a one piece module. Reflector module is field rotatable in 90° increments and may be rotated or removed without the use of tools. Reflector modules are factory prewired with a quick-disconnect plug. Sockets are porcelain 4KV pulse rated, medium base (E26) for 50W - 150W or bi-pin (G12) for 70W and 150W; mogul base (E39) for 200W; pin oriented mogul base (E39) for 200W - 400W. Special for 210W and 315W CDM Elite lamp base is PGZ18. Lamp is horizontally mounted.

ELECTRICAL COMPONENTS

All electrical components are UL and cUL recognized mounted on a single plate and factory wired with quick-disconnect. Electrical module attaches to housing with toolless hinge and latch. Electronic MH ballasts have power factor of >.95, -20°F starting, 120-277V 50Hz/60Hz and have lamp End-of-life protection. Special for Philips MasterColor CDM Elite: Electronic MH ballast has a power factor of >.90 (210W & 315W), -4°F starting, 200 - 277V, 50Hz/60Hz and has lamp End-of-life protection. 315W electronic MH ballast has 0 - 10V dimming capability. Magnetic MH ballasts are high power factor (70W - 150W) or CWA (250W), -20°F starting, multi-tap 120-277V, 60Hz. All HPS ballasts are core and coil, high-reactance, high power factor (70W - 150W) or CWA (200W - 400W), -40°F starting.

FINISH

Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140° F. Four step iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability. Texture finish is standard.

PROJECT NAME:

FIXTURE TYPE:

RECEIVED

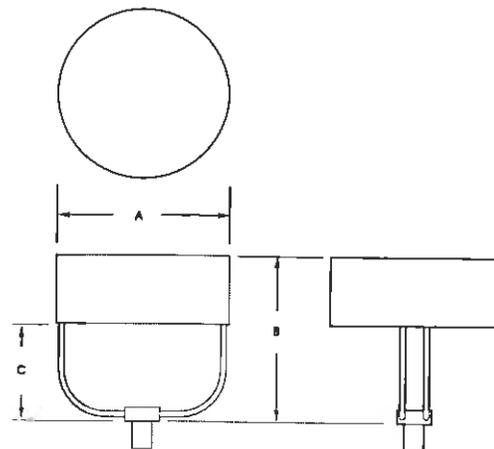
JUL 27 2015

GC PLANNING COMMISSION



RSBPT

PATENT PENDING



| FIXTURE | A | B | C |
|----------|--------------|--------------|--------------|
| RSBPT325 | 26" 635mm | 24" 610mm | 14" 356mm |
| RSBPT318 | 18" 457mm | 18" 457mm | 10" 254mm |

Light Pollution Control Classification System
LPC Full cutoff 0% Uplight Luminaire

UL U.L. Listed for wet location

MADE IN THE USA

2014251

U.S. Architectural Lighting

540 West Avenue O Palmidale, CA 93551
Phone (661) 233-2000 Fax (661) 233-2937
www.usalighting.com

U.S. ARCHITECTURAL LIGHTING

AL3 Series

Spectra III Area Luminaire, 150-450W HID

Type:

Job:

Page 2 of 6



| Series/Source-Wattage ¹ | Optics (Distribution) | Voltage | Mounting ² |
|---|--|--|---|
| Pulse Start Metal Halide <input type="checkbox"/> AL3P-150 <input type="checkbox"/> AL3P-175 <input type="checkbox"/> AL3P-250 <input type="checkbox"/> AL3P-320 <input type="checkbox"/> AL3P-350 <input type="checkbox"/> AL3P-400 <input type="checkbox"/> AL3P-450 ^{2,3} | AL3 Type IV optics include an internal house side shield. Contact factory to specify Type IV optics without internal house side shield. Vertical lamp Full Cutoff, Flat Glass ⁴ <input type="checkbox"/> 2F Type II <input type="checkbox"/> 3F Type III <input type="checkbox"/> 4F Type IV <input type="checkbox"/> 5F Type V Vertical lamp Cutoff / Semi-Cutoff, Sag Glass ⁵ <input type="checkbox"/> 2V Type II <input type="checkbox"/> 3V Type III <input type="checkbox"/> 4V Type IV <input type="checkbox"/> 5V Type V Horizontal lamp Full Cutoff, Flat Glass <input type="checkbox"/> 2H Type II <input type="checkbox"/> 3H Type III <input type="checkbox"/> 4H Type IV <input type="checkbox"/> 5H Type V Distribution Patterns | <input type="checkbox"/> 120 <input type="checkbox"/> 208 <input type="checkbox"/> 240 <input type="checkbox"/> 277 <input type="checkbox"/> 480 <input type="checkbox"/> QV ⁶ | <input type="checkbox"/> SS Surface arm mount to square pole (standard) <input type="checkbox"/> SR(X) ⁸ Surface arm mount to round pole. Mounting edge of arm is contoured to match pole radius. <input type="checkbox"/> H HIBRED Arm System (HID/LED Night Ambient Series (HIB). See current HIBRED spec sheet WLSPO278 to specify AL3 HIBRED system. Not available in 480V. <input type="checkbox"/> DM Direct mount to square pole. Luminaire housing mounts flush to pole without the use of mounting arms. 1/390 or 2/180 mount only. <input type="checkbox"/> SA2 ⁹ Adjustable arm mount to square pole. Includes transition plate. <input type="checkbox"/> MA2 Adjustable mast/fitter mount to 2-3/8" O.D. tenon. Includes transition plate. <input type="checkbox"/> RTA-(X)-(Y) ^{10,11} Round pole tenon adapter. Slipfit for Round Pole with 2.375" O.D. x 4" vertical tenon. 9" arm included. <input type="checkbox"/> SPTA-(X)-2.375 ¹⁰ Square pole tenon adapter. Slipfit for Square Pole with 2.375" O.D. x 4" vertical tenon. 9" arm included. <input type="checkbox"/> WB Wall mount bracket <input type="checkbox"/> WBA Wall mount bracket with 6" arm <input type="checkbox"/> PT(XY) ¹² Post top yoke mount <input type="checkbox"/> Y Trunnion yoke mount |
| High Pressure Sodium <input type="checkbox"/> AL3S-150 <input type="checkbox"/> AL3S-250 <input type="checkbox"/> AL3S-400 | | | |

| Options (Factory installed) | Finish | Accessories (Ordered Separately) |
|---|--|---|
| <input type="checkbox"/> BL Bi-Level dimming <input type="checkbox"/> CSR Hot Quartz Restrike <input type="checkbox"/> LQ Hot/Cold Quartz Restrike <input type="checkbox"/> LQ1 Separately Wired (120V) Quartz Restrike <input type="checkbox"/> F1 Single Fuse (120/277V) <input type="checkbox"/> F2 Double Fuse (208/240/480V) <input type="checkbox"/> TLR Twist-Lock Photocell Receptacle <input type="checkbox"/> TLR-PC(***)V Twist-Lock Receptacle with Photocell. Specify voltage. 480V not available. <input type="checkbox"/> PCB(***)V Photocell Button. Specify voltage. 480V not available. <input type="checkbox"/> HSS-H-AL3 Internal House Side Shield (for flat glass optics) (internal house side shield is standard with Type IV optics) <input type="checkbox"/> HSS-V-AL3 Internal House Side Shield (for sag glass optics) (internal house side shield is standard with Type IV optics) <input type="checkbox"/> ASL Acrylic Sag Lens <input type="checkbox"/> SLS Stabilux Socket (for H optics only) <input type="checkbox"/> DS(XX) Decorative Striping XX = color: 01 = White 02 = Black 03 = Gold metallic 04 = Red 05 = Silver metallic 08 = Blue 69 = Dark Green | <input type="checkbox"/> SA Satin Aluminum <input type="checkbox"/> BK Black <input type="checkbox"/> DB Dark Bronze <input type="checkbox"/> WH White <input type="checkbox"/> GR Gray <input type="checkbox"/> GN Green | <input type="checkbox"/> F1-KIT Single Fuse Kit (120/277V) <input type="checkbox"/> F2-KIT Double Fuse Kit (208/240/480V) <input type="checkbox"/> HSS-H-AL3 Internal House Side Shield (for flat glass optics) (internal house side shield is standard with Type IV optics) <input type="checkbox"/> HSS-V-AL3 Internal House Side Shield (for sag glass optics) (internal house side shield is standard with Type IV optics) <input type="checkbox"/> SK-AL3-(F) External Glare Shield F = Specify finish |

Notes
 1) Depth of housing dependent on wattage.
 2) 2H reflector not available.
 3) Vertical burn lamp only, at time of publication.
 4) 400 watt and below, Pulse Start Metal Halide only.
 5) Cutoff distribution at 150-400 watts. Semi-Cutoff at 450 watts.
 6) Allows field selection of 120/208/240/277V. (No 480V). Certain options require voltage selection as well.
 7) Refer to page 6 for Drill Templates.
 8) X = Specify pole size: (3.5 / 4)" OD; (4 / 5)" OD.
 9) May be used in the following configurations only: 1 @ 90°; 2 @ 180°.
 10) X = Specify configuration: 1 @ 90°; 2 @ 90°; 3 @ 90°; 4 @ 90°; 2 @ 180°; 2 @ 120°; 3 @ 120°.
 11) Y = Specify tenon size: 2.375" OD x 4" tall; 3 / 3.5" OD x 6" tall; 3.5 / 4" OD x 6" tall.
 12) XY = Specify pole size and type: 4S, 5S, 2.375R, 3R, or 4R.



AL3 Series

Spectra III Area Luminaire, 150-450W HID

| | | |
|-----------------------|--------------------------------|----------------------------------|
| Type: | Job: | Approvals: |
| Catalog Number: | | Date: |
| Series/Source-Wattage | Optics (Distribution) | Voltage |
| Mounting | Options (Factory installed) | Finish |
| | | Accessories (Field Installed) |

Page 1 of 6

Overall Dimensions

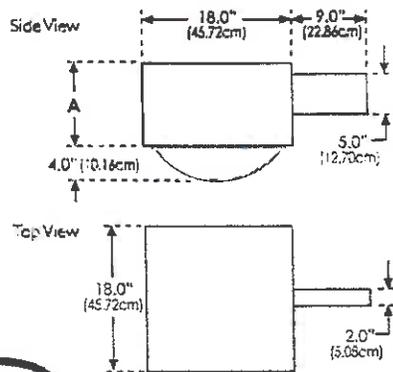
For Reference Only

| | |
|---|--|
| 150-400 Watt, non dimming unit | A = 10.00" (25.40cm) B = 27.25" (69.22cm) |
| 450 Watt non dimming or 150-400 Watt Bi-Level unit | A = 12.00" (30.48cm) B = 29.25" (74.30cm) |

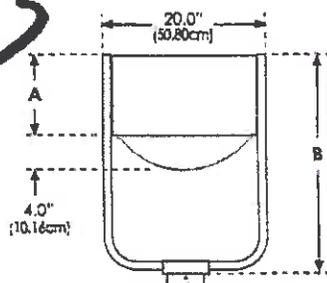
AL3 arm mount

SS

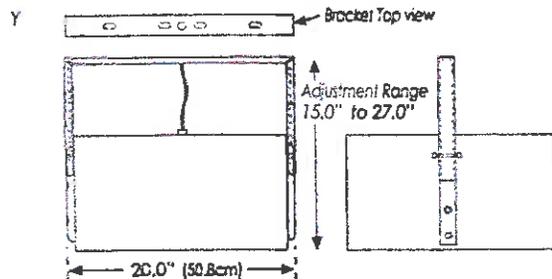
Surface Arm Mount
to Square Pole
(standard)



AL3 post top mount PT(XY)



AL3 trunnion yoke mount



| | | |
|--------|-----------------------------------|----------------------------|
| Weight | 150 - 400W 50 lbs. (22.68 kgs) | 450 82 lbs. (37.19 kgs) |
|--------|-----------------------------------|----------------------------|

EPA data shown on page 3.

Specifications

Housing

Formed aluminum sheet metal housing and top. The sides and top shall be mechanically and chemically sealed to ensure a rain-tight seal. Standard unit constructed to IP54.

Optical Module

Rotatable multi-faceted segmented reflectors shall be made of high purity, anodized "Super Sheet" aluminum with an inorganic dielectric coating, producing a minimum reflectivity of 94% for optimum efficiency. Optical assemblies shall be field rotatable at 90° increments and exchangeable. Lamp orientation and lens flexibility allow the AL3 Series (Spectra III Area Luminaire) to provide optics meeting the IES definitions of Full Cutoff, Cutoff, and Semi-Cutoff. "F" optics (available for 400W max Pulse Start Metal Halide only) combine standard flat glass lens with vertical lamp orientation to achieve Full Cutoff and is Dark Sky Ordinance compliant.

Lamp Access

Door frame shall be mitered anodized aluminum extrusion, gasketed to ensure a positive seal to the housing.

Lens

Lens shall be tempered glass to withstand thermal and physical shock. (Flat glass or sag glass is determined by wattage and type of optics specified.)

Socket

A porcelain, 4KV pulse-rated, grip-type, mogul based socket shall be used to prevent lamp loosening and to maintain proper lamp positioning. Optional Stabilux lamp socket is available for horizontal lamps to provide added protection to reduce lamp breakage due to mechanical shock and vibrator.

Ballast

Ballast shall be high power factor with reliable starting at temperatures as low as -29°C (-20°F) for Metal Halide, -34°C (-30°F) for Pulse Start Metal Halide, and -40°C (-40°F) for High Pressure Sodium. Crest factor does not exceed 1.8. Class H, 180°C (356°F) rated insulation system.

Mounting

Surface arm mount (field installed) shall be of heavy gauge extruded aluminum. Threaded tension rods shall be used to bolt to square (standard) or round poles. Optional post top mount shall allow fixture to be mounted to square or round poles or tenons. Additional mounting options include direct mount to square pole, an adjustable arm mount, an adjustable mastfitter, a wall mount bracket (with or without arm), a trunnion yoke mount, and pole top tenon adapters with arm mount for square and round poles.

Finish

Finish color options include Satin Aluminum, Black, Dark Bronze, White, Grey and Green. Finishes are a polyester powder coating, 2.5 mil nominal thickness, electrostatically applied and oven cured to ensure extreme durability. Other colors may be specified. Decorative striping option also available.

Listings

ETL/cETL listed to the UL 1598 standard, suitable for Wet Locations. The quality systems of this facility have been Registered by UL to the ISO 9000 Series Standards.

Warranty / Terms and Conditions

Mechanical, finish and electrical shall be covered by a limited 3-year warranty. Warranty is 1-year when purchased with the ASL (acrylic sag lens) option.

The current Philips Wide-Lite Warranty may be found at www.wide-lite.com (keyword: warranty) as well as the current Standard Terms and Conditions of Sale (keyword: terms).

All sales of items in this catalogue shall be subject to the Philips Wide-Lite Standard Terms and Conditions of Sale current at the time of shipment. If you do not have a copy of the Philips Wide-Lite Warranty and Standard Terms, please contact the factory for same prior to ordering.



Some luminaires use fluorescent or high intensity discharge (HID) lamps that contain small amounts of mercury. Such lamps are labeled "Contain Mercury" and/or with the symbol (Hg). Lamps that contain mercury must be disposed of in accordance with local requirements. Information regarding

lamp recycle and disposal can be found at www.lamprecycle.org.

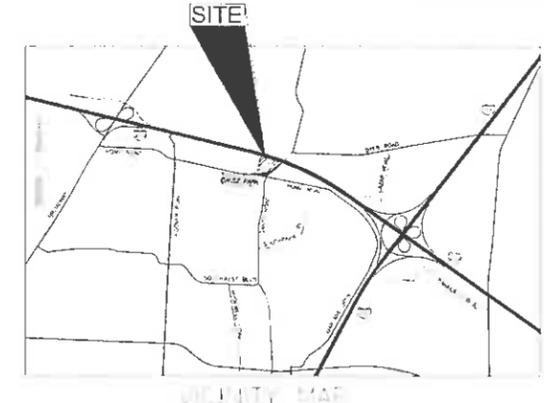
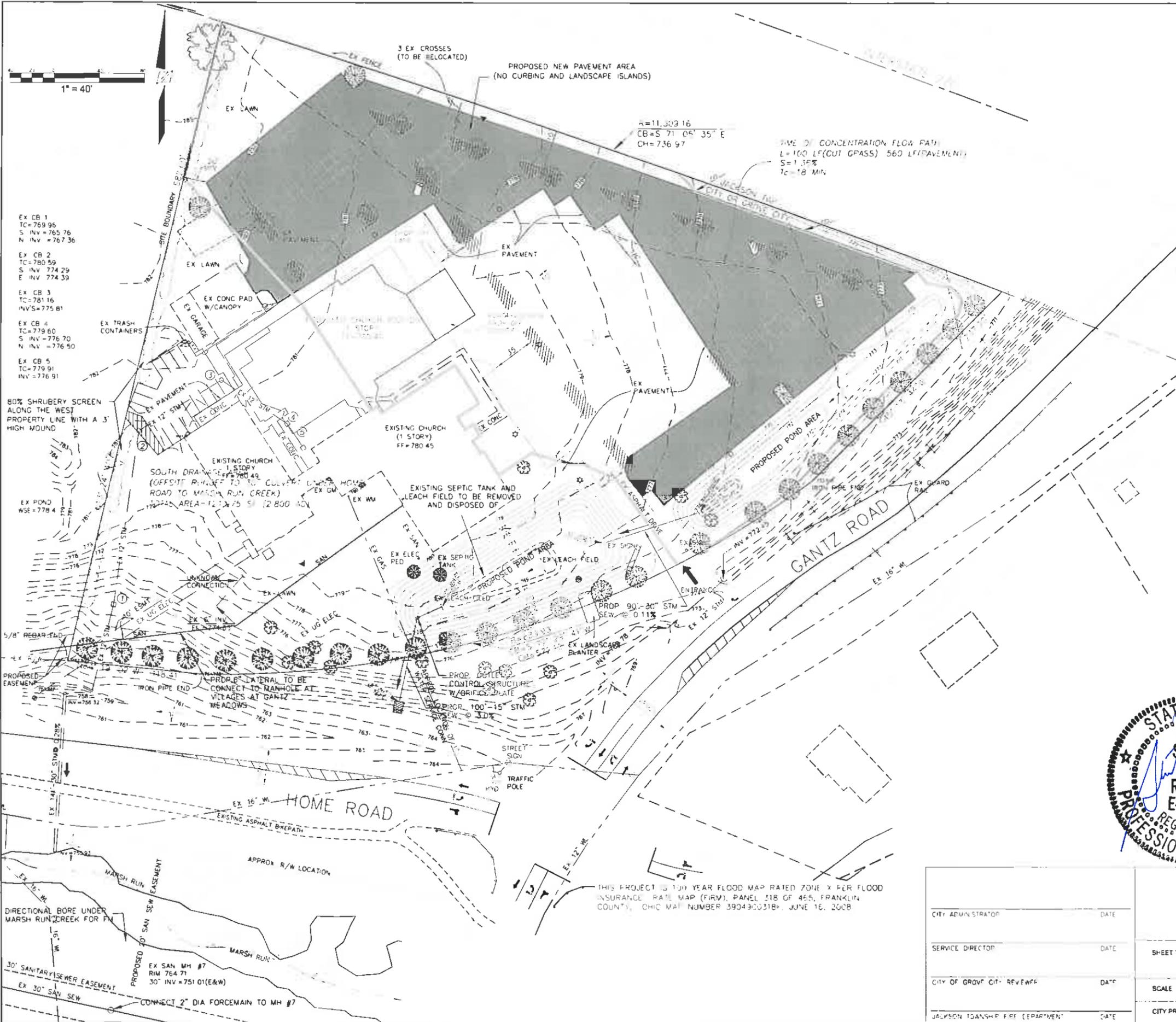
Philips Wide-Lite reserves the right to change specifications and dimensions without notice. Lamp and electrical specifications / availability subject to change by manufacturer without notice. Please refer to detailed specification sheets for additional information and spec. details.

1611 Clavis Barker Road • San Marcos, TX 78666 • Phone: 512.392.5821 • Fax: 512.753.1122 • www.wide-lite.com

© 2010 Philips Group. All rights reserved.

Bulletin No. WLSP0126J0512

PHILIPS
WideLite



1" = 40'

- EX CB 1
TC=769.96
S INV = 765.76
N INV = 767.36
- EX CB 2
TC=780.59
S INV 774.29
E INV 774.39
- EX CB 3
TC=781.16
INV'S=775.81
- EX CB 4
TC=779.60
S INV = 776.70
N INV = 776.50
- EX CB 5
TC=779.91
INV = 776.91

80% SHRUBBERY SCREEN ALONG THE WEST PROPERTY LINE WITH A 3' HIGH MOUND

EXISTING CHURCH (1 STORY)
FF=780.45

EXISTING SEPTIC TANK AND LEACH FIELD TO BE REMOVED AND DISPOSED OF

PROPOSED POND AREA

PROPOSED 90'-30" STM
SEW = 0.11%

PROPOSED 100'-15" STM
SEW = 0.30%

PROPOSED 2" DIA FORCEMAIN TO MH #7

PROPOSED 30" SAN SEW EASEMENT

PROPOSED 30" SAN SEW

PROPOSED 30" SAN SEW EASEMENT

PROPOSED 30" SAN SEW

PROPOSED 30" SAN SEW

PROPOSED 30" SAN SEW

R=11,309.16
CB=S 71° 04' 35" E
CH=7,369.97

TIME OF CONCENTRATION FLOW PATH
L=100 LF (CUT GRASS) 560 LF (PAVEMENT)
S=1.35%
Tc = 18 MIN

NORTH DRAINAGE AREA (TO PROPOSED DETENTION POND)
TOTAL AREA=167,283 SF=3.72 AC
IMPERVIOUS AREA=115,191 SF=2.44 AC (CONC ASPHALT)
PERVIOUS AREA=41,222 SF=0.94 AC (CUT GRASS LANDSCAPING)

INCREASE IN NEW IMPERVIOUS SURFACE (115,191 SF=56,113 SF=59.67% INCREASE)

OFFSITE DRAINAGE AREA (TO INTERSTATE 770 DRAINAGE SYSTEM)
TOTAL AREA=5,870 (CUT GRASS)

SUMMARY OF FLOW TABLE
TOTAL SITE AREA=291,125 SF (6.66 AC)
TOTAL DISTURBED AREA=118,429 SF (2.71 AC)
AREA THAT FLOWS OFFSITE=121,971 SF + 5,870 SF=127,845 SF (2.91 AC)
AREA THAT FLOWS TO DETENTION=156,413 SF (3.59 AC)

Q₁₀ = 5.87 CFS

CRITICAL FLOW CALCULATION
PERCENT INCREASE IN FLOW FROM DEVELOPMENT TO 10-YEAR POST DEVELOPMENT=2.1% OF 5.87 CFS = 1.27% INCREASE THROUGHOUT CRITICAL STORM IS 25 YEAR STORM

FIRST FLUSH WATER QUALITY VOLUME=2,992 LIT RELEASED @ 0.055 CFS OVER 24 HOURS



- PROPOSED CURB
- ⊙ EXISTING LIGHT POLE
- ⊙ PROPOSED 32 FT HIGH W/DUGHT LIGHT POLE
- 100-YEAR FLOOD PLAIN

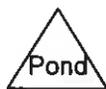
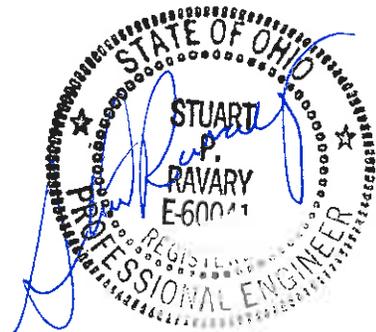
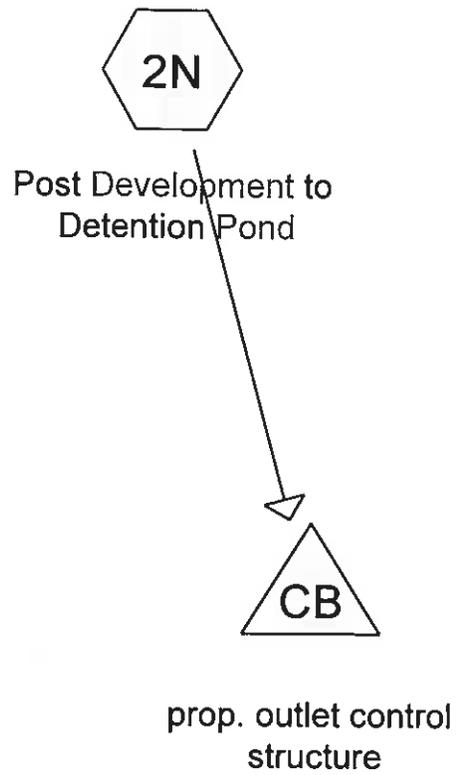
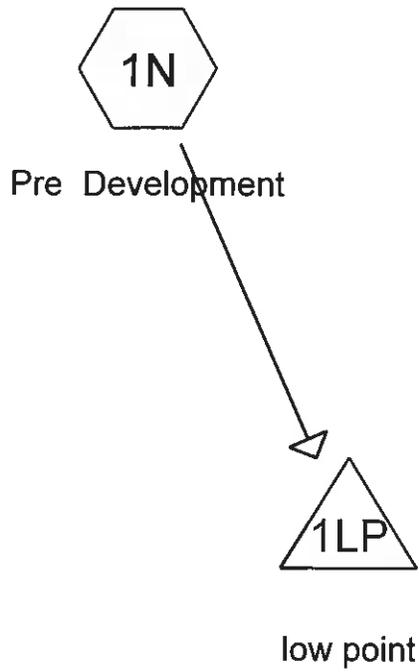
THIS PROJECT IS 100 YEAR FLOOD MAP RATED ZONE X PER FLOOD INSURANCE RATE MAP (FIRM), PANEL 318 OF 465, FRANKLIN COUNTY, OHIO MAP NUMBER 3904300318, JUNE 16, 2008

| | | | | | |
|----------------------------------|--|-----------------|--|---|--|
| CITY ADMINISTRATOR | | DATE | | CHURCH EXPANSION CANAAN LAND CHURCH 2777 GANTZ ROAD GROVE CITY, OHIO 43123 | |
| SERVICE DIRECTOR | | DATE | | | |
| CITY OF GROVE CITY REVIEWER | | DATE | | SHEET TITLE | |
| JACKSON TOWNSHIP FIRE DEPARTMENT | | DATE | | POST DEVELOPMENT DRAINAGE PLAN | |
| | | SCALE | | SHEET 2/2 | |
| | | CITY PROJECT NO | | DATE | |
| | | | | JUNE, 2015 | |

RECEIVED

JUL 27 2015

GC PLANNING COMMISSION



drainage calcs 6-24-15

Prepared by Hewlett-Packard Company

HydroCAD® 10.00 s/n 07636 © 2012 HydroCAD Software Solutions LLC

Printed 7/23/2015

Page 2

Area Listing (all nodes)

| Area (sq-ft) | CN | Description (subcatchment-numbers) |
|-----------------|-----------|--|
| 153,262 | 74 | >75% Grass cover, Good, HSG C (1N, 2N) |
| 171,304 | 98 | Paved parking, HSG C (1N, 2N) |
| 324,566 | 87 | TOTAL AREA |

drainage calcs 6-24-15

Prepared by Hewlett-Packard Company

HydroCAD® 10.00 s/n 07636 © 2012 HydroCAD Software Solutions LLC

Printed 7/23/2015

Page 3

Soil Listing (all nodes)

| Area (sq-ft) | Soil Group | Subcatchment Numbers |
|-----------------|---------------|-------------------------|
| 0 | HSG A | |
| 0 | HSG B | |
| 324,566 | HSG C | 1N, 2N |
| 0 | HSG D | |
| 0 | Other | |
| 324,566 | | TOTAL AREA |

drainage calcs 6-24-15

Prepared by Hewlett-Packard Company

Printed 7/23/2015

HydroCAD® 10.00 s/n 07636 © 2012 HydroCAD Software Solutions LLC

Page 4

Ground Covers (all nodes)

| HSG-A (sq-ft) | HSG-B (sq-ft) | HSG-C (sq-ft) | HSG-D (sq-ft) | Other (sq-ft) | Total (sq-ft) | Ground Cover |
|------------------|------------------|------------------|------------------|------------------|------------------|---------------------------|
| 0 | 0 | 153,262 | 0 | 0 | 153,262 | >75% Grass cover, Good |
| 0 | 0 | 171,304 | 0 | 0 | 171,304 | Paved parking |
| 0 | 0 | 324,566 | 0 | 0 | 324,566 | TOTAL AREA |

drainage calcs 6-24-15

Prepared by Hewlett-Packard Company

Printed 7/23/2015

HydroCAD® 10.00 s/n 07636 © 2012 HydroCAD Software Solutions LLC

Page 5

Pipe Listing (all nodes)

| Line# | Node Number | In-Invert (feet) | Out-Invert (feet) | Length (feet) | Slope (ft/ft) | n | Diam/Width (inches) | Height (inches) | Inside-Fill (inches) |
|-------|-------------|------------------|-------------------|---------------|---------------|-------|---------------------|-----------------|----------------------|
| 1 | CB | 770.00 | 767.00 | 100.0 | 0.0300 | 0.011 | 15.0 | 0.0 | 0.0 |

drainage calcs 6-24-15

Type II 24-hr 25 Rainfall=4.50"

Prepared by Hewlett-Packard Company

Printed 7/23/2015

HydroCAD® 10.00 s/n 07636 © 2012 HydroCAD Software Solutions LLC

Page 6

Time span=0.00-30.00 hrs, dt=0.02 hrs, 1501 points x 9

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1N: Pre Development Runoff Area=168,153 sf 33.37% Impervious Runoff Depth=2.64"
Flow Length=762' Slope=0.0157 '/' Tc=36.4 min CN=82 Runoff=7.76 cfs 36,939 cf

Subcatchment 2N: Post Development to Runoff Area=156,413 sf 73.65% Impervious Runoff Depth=3.60"
Flow Length=660' Slope=0.0136 '/' Tc=17.9 min CN=92 Runoff=14.63 cfs 46,951 cf

Pond 1LP: low point Inflow=7.76 cfs 36,939 cf
Primary=7.76 cfs 36,939 cf

Pond CB: prop. outlet control structure Peak Elev=773.21' Storage=26,887 cf Inflow=14.63 cfs 46,951 cf
Outflow=1.73 cfs 36,298 cf

Total Runoff Area = 324,566 sf Runoff Volume = 83,889 cf Average Runoff Depth = 3.10"
47.22% Pervious = 153,262 sf 52.78% Impervious = 171,304 sf

Summary for Subcatchment 1N: Pre Development

pre-development runoff

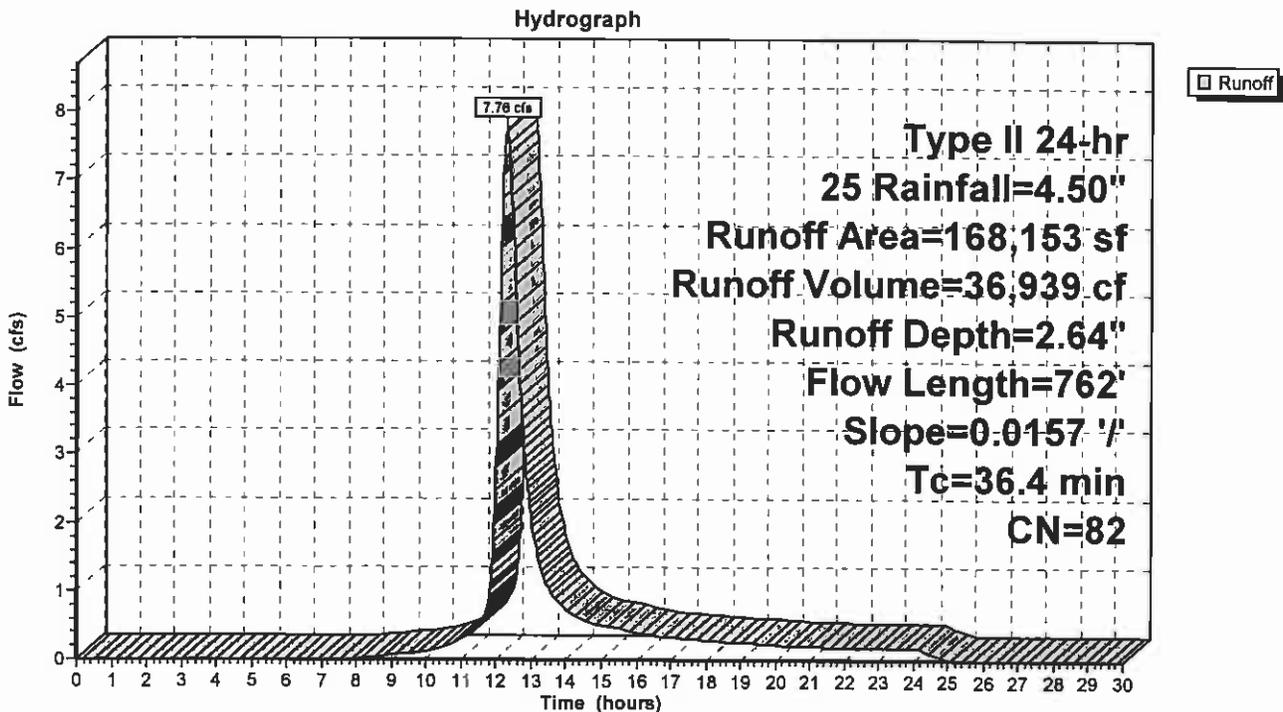
Runoff = 7.76 cfs @ 12.32 hrs, Volume= 36,939 cf, Depth= 2.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type II 24-hr 25 Rainfall=4.50"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 56,113 | 98 | Paved parking, HSG C |
| 112,040 | 74 | >75% Grass cover, Good, HSG C |
| 168,153 | 82 | Weighted Average |
| 112,040 | | 66.63% Pervious Area |
| 56,113 | | 33.37% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 28.3 | 300 | 0.0157 | 0.18 | | Sheet Flow, SHEET FLOW Grass: Short n= 0.150 P2= 2.70" |
| 1.8 | 130 | 0.0157 | 1.21 | | Sheet Flow, PAVEMENT Smooth surfaces n= 0.011 P2= 2.70" |
| 6.3 | 332 | 0.0157 | 0.88 | | Shallow Concentrated Flow, OVERLAND FLOW Short Grass Pasture Kv= 7.0 fps |
| 36.4 | 762 | Total | | | |

Subcatchment 1N: Pre Development



Summary for Subcatchment 2N: Post Development to Detention Pond

Sheet flow to detention pond

Runoff = 14.63 cfs @ 12.10 hrs, Volume= 46,951 cf, Depth= 3.60"

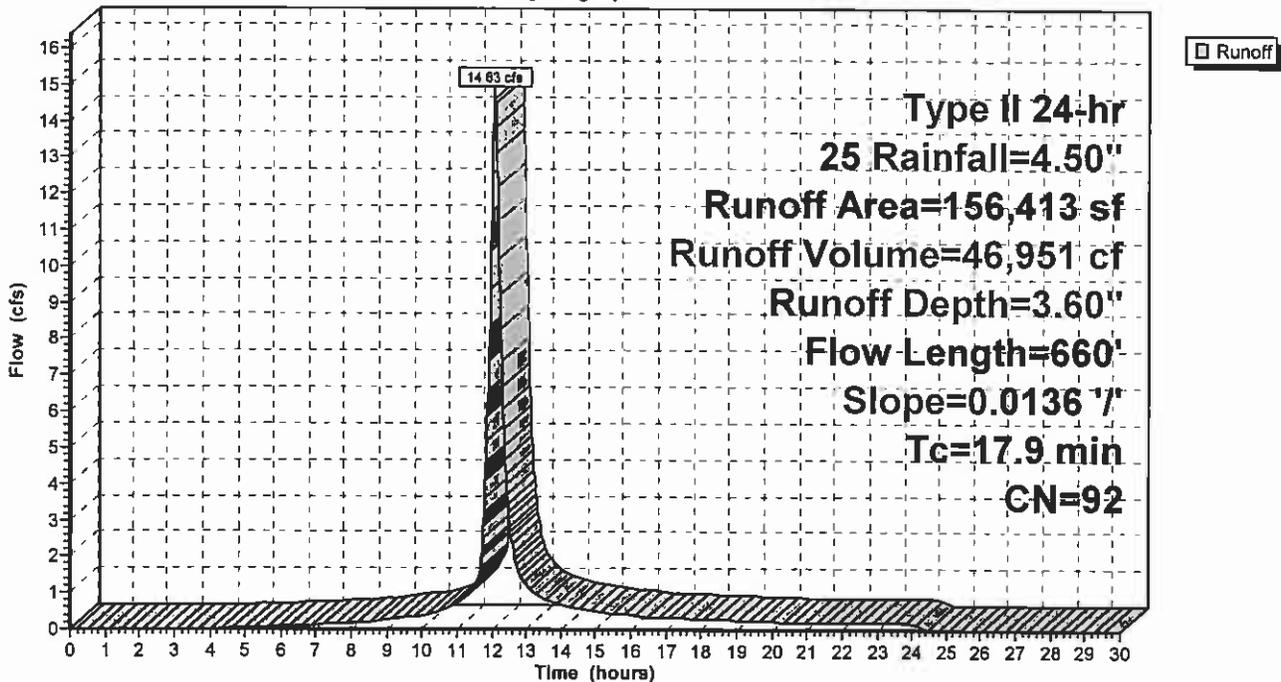
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type II 24-hr 25 Rainfall=4.50"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 115,191 | 98 | Paved parking, HSG C |
| 41,222 | 74 | >75% Grass cover, Good, HSG C |
| 156,413 | 92 | Weighted Average |
| 41,222 | | 26.35% Pervious Area |
| 115,191 | | 73.65% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 12.4 | 100 | 0.0136 | 0.13 | | Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 2.70" |
| 3.7 | 300 | 0.0136 | 1.35 | | Sheet Flow, sheet flow Smooth surfaces n= 0.011 P2= 2.70" |
| 1.8 | 260 | 0.0136 | 2.37 | | Shallow Concentrated Flow, over pavement flow Paved Kv= 20.3 fps |
| 17.9 | 660 | Total | | | |

Subcatchment 2N: Post Development to Detention Pond

Hydrograph



Summary for Pond 1LP: low point

surface runoff to lowpoint

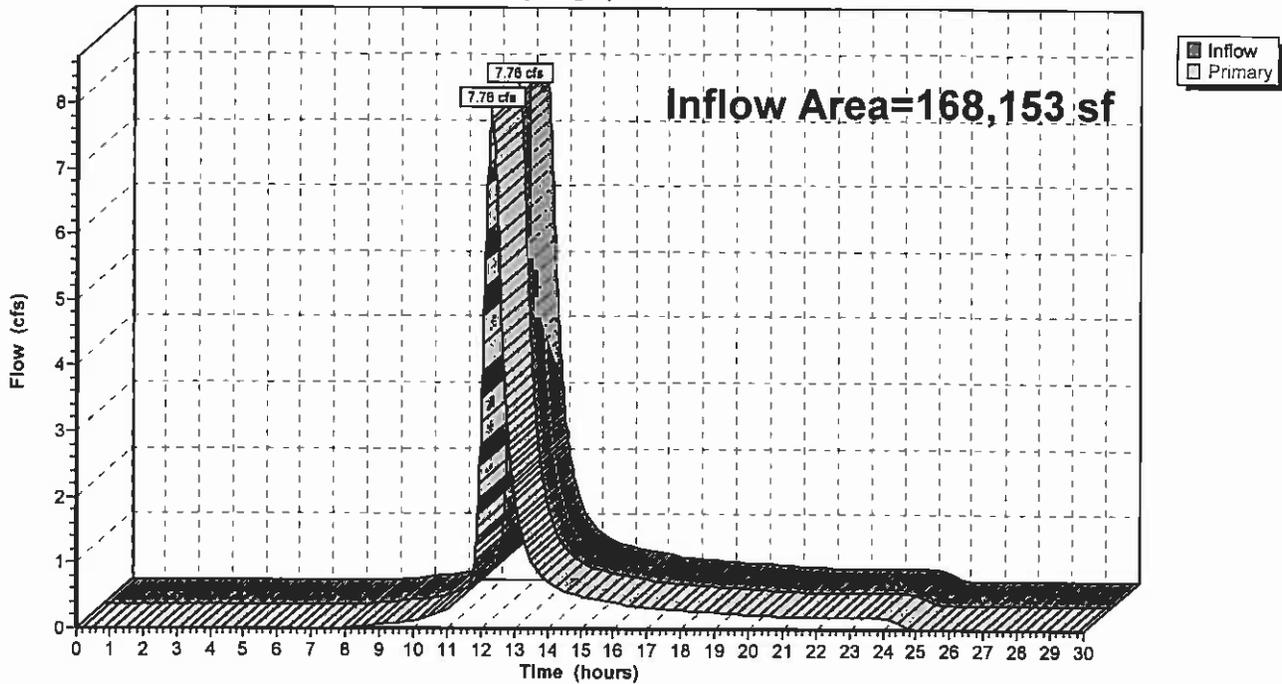
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 168,153 sf, 33.37% Impervious, Inflow Depth = 2.64" for 25 event
 Inflow = 7.76 cfs @ 12.32 hrs, Volume= 36,939 cf
 Primary = 7.76 cfs @ 12.32 hrs, Volume= 36,939 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs / 9

Pond 1LP: low point

Hydrograph



drainage calcs 6-24-15

Type II 24-hr 25 Rainfall=4.50"

Prepared by Hewlett-Packard Company

Printed 7/23/2015

HydroCAD® 10.00 s/n 07636 © 2012 HydroCAD Software Solutions LLC

Page 10

Summary for Pond CB: prop. outlet control structure

Inflow Area = 156,413 sf, 73.65% Impervious, Inflow Depth = 3.60" for 25 event
 Inflow = 14.63 cfs @ 12.10 hrs, Volume= 46,951 cf
 Outflow = 1.73 cfs @ 12.72 hrs, Volume= 36,298 cf, Atten= 88%, Lag= 37.5 min
 Primary = 1.73 cfs @ 12.72 hrs, Volume= 36,298 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs / 9
 Peak Elev= 773.21' @ 12.72 hrs Surf.Area= 15,306 sf Storage= 26,887 cf

Plug-Flow detention time= 280.9 min calculated for 36,298 cf (77% of inflow)
 Center-of-Mass det. time= 195.7 min (989.5 - 793.8)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|---|
| #1 | 770.50' | 23,952 cf | Custom Stage Data (Irregular) Listed below (Recalc) |
| #2 | 771.60' | 442 cf | 30.0" D x 90.0'L RCP_Round 30" S= 0.0011 'f |
| #3 | 769.00' | 38,699 cf | Custom Stage Data (Irregular) Listed below (Recalc) |
| | | 63,093 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 770.50 | 0 | 0.0 | 0 | 0 | 0 |
| 771.00 | 448 | 106.0 | 75 | 75 | 895 |
| 772.00 | 2,752 | 324.0 | 1,437 | 1,511 | 8,357 |
| 773.00 | 5,570 | 533.0 | 4,079 | 5,591 | 22,617 |
| 774.00 | 8,559 | 628.0 | 7,011 | 12,602 | 31,413 |
| 775.00 | 14,393 | 699.0 | 11,350 | 23,952 | 38,940 |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 769.00 | 0 | 0.0 | 0 | 0 | 0 |
| 770.00 | 2,222 | 242.0 | 741 | 741 | 4,662 |
| 771.00 | 5,100 | 377.0 | 3,563 | 4,303 | 11,319 |
| 772.00 | 6,786 | 415.0 | 5,923 | 10,226 | 13,747 |
| 773.00 | 8,549 | 447.0 | 7,651 | 17,877 | 15,983 |
| 774.00 | 10,405 | 472.0 | 9,462 | 27,339 | 17,869 |
| 775.00 | 12,343 | 497.0 | 11,360 | 38,699 | 19,856 |

| Device | Routing | Invert | Outlet Devices |
|--------|----------|---------|--|
| #1 | Primary | 770.00' | 15.0" Round culvert L= 100.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 770.00' / 767.00' S= 0.0300 'f Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf |
| #2 | Device 1 | 770.00' | 1.8" Vert. Orifice/Grate C= 0.600 |
| #3 | Device 1 | 772.00' | 8.0" Vert. Orifice/Grate C= 0.600 |

Primary OutFlow Max=1.73 cfs @ 12.72 hrs HW=773.21' (Free Discharge)

- 1=culvert (Passes 1.73 cfs of 11.89 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.15 cfs @ 8.53 fps)
- 3=Orifice/Grate (Orifice Controls 1.58 cfs @ 4.52 fps)

Pond CB: prop. outlet control structure

