TOWN OF NEW WINDSOR

555 Union Avenue
New Windsor, New York 12553
Telephone/Fax: (845) 563-4611

OFFICE OF THE TOWN CLERK
DEBORAH GREEN

1763

I, **DEBORAH GREEN**, Town Clerk of the Town of New Windsor in the County of Orange, State of New York, **HEREBY CERTIFY** that the attached extract of the Minutes has been compared by me with the Minutes of the Special Town Board Meeting of the Town of New Windsor in the County of Orange, State of New York, held on the 16th day of June 2014, and the same is a true and correct transcript therefrom and of the whole thereof so far as the same relates to the subject matter referred to.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of said Town this 16th day of June 2014.

Town Seal

Deborah Green, Town Clerk
Town of New Windsor

#3 On Agenda: **Motion – Call Public Hearing – Amend Chapter 300, Zoning Local Law for Planned Casino Overlay District**

Motion by Councilwoman Biasotti, seconded by Councilwoman Mullarkey, that the Town Board of the Town of New Windsor adopt the following:

WHEREAS, the Town Board of the Town of New Windsor has a local law before it entitled: "A Local Law amending Chapter 300 of the Code of the Town of New Windsor; amending the Zoning Map of the Town of New Windsor; and creating a new Planned Casino Overlay District ("PCOD")"; and

WHEREAS, the purpose of the PCOD is to authorize casinos and associated uses consistent with the goals and objectives of the Town's Comprehensive Plan, pursuant to the Upstate New York Gaming Economic Development Act of 2013, and consistent with an approved Master Plan for the PCOD;

NOW, THEREFORE, BE IT RESOLVED as follows:

1. That the movant of this resolution does hereby introduce the above local law; and
2. That the proposed local law be forwarded to the Orange County Department of Planning for review and report; and
3. That the proposed local law be forwarded to the Town of New Windsor Planning Board for review and report; and
4. That the Town Board does hereby authorize the Town Supervisor to sign the EAF Part I; and
5. That the Town Board does hereby determine that this is a Type I action under SEQR; and
6. That the Town Board does hereby declare itself to be lead agency under SEQR for the review of this action, as the Town Board is the only agency with approval authority over this action, and
7. That a public hearing on the proposed local law be set for July 2, 2014 at 7:00 o'clock p.m. and that due notice of the same is directed to be given by publication and posting.

Roll Call: All Ayes *Motion Carried: 5-0*

Orange County Department of Planning

Steven M. Neuhaus
County Executive

124 Main Street
Goshen, NY 10924-2124
Tel: (845) 615-3840
Fax: (845) 291-2533

David E. Church, AICP
Commissioner
www.orangecountygov.com/planning
planning@orangecountygov.com

County Reply – Mandatory Review of Local Planning Action as per NYS General Municipal Law §239-l, m, & n

Local Referring Board: Town of New Windsor Town Board **Referral ID #:** NWT10-14M

Applicant: Town of New Windsor **Tax Map #:** N/A

Proposed Action: Local Law to include a Planned Casino Overlay District. **Local File #:** N/A

Reason for County Review: Adoption of a Local Law which affects planning and/or zoning within 500 feet of State and County highways and municipal boundaries.

Date of Full Statement: June 17, 2014

Comments:

County Planning is in receipt of the GML §239 referral for the above referenced Local Law. Based upon our review of the submitted materials, our office has found no evidence that significant inter-municipal or county-wide impacts would result from its approval. The location of the Planned Casino Overlay Zone is within one of Orange Counties' identified Priority Growth Areas; therefore development that is sensitive to the surrounding resources is encouraged. The Local Law is generally consistent with the portions of the Town's latest *Comprehensive Plan Update* which discuss development at the airport and major economic development areas. The Local Law is further in general conformance with the *Orange County Comprehensive Plan* and the Draft *Orange County Economic Development Strategy*, both having sections dedicated to promoting the Arts, Recreation and Tourism throughout the County.

Mitigation of actual potential impacts associated with the development of a casino/resort and regional tourist destination such as traffic, stormwater, fiscal impact and impact to community and county facilities and services can be addressed through the planning and SEQRA process when more detailed plans and environmental information are submitted for review by the Applicant to the Town of New Windsor.

Finally, our office would like to include the following as advisory comments with regard to the Local Law:

1. Our understanding of the Local Law is that the The Grand Hudson Hotel & Casino Master Plan will be incorporated into the Town's *Master Plan/Comprehensive Plan* in order to support the Local Law. County Planning recommends that the *Master Plan* amendments speak to a future project generically rather than one that specifically is tied to the current proposal by Greentrack Inc. for The Grand Hudson Hotel & Casino.

County Recommendation: Local Determination

Date: June 23, 2014
Prepared by: Chad M. Wade, R.L.A.
Planner

David Church, AICP
Commissioner of Planning

As per NYS General Municipal Law 239-m & n, within 30 days of municipal final action on the above referred project, the referring board must file a report of the final action taken with the County Planning Department. For such filing, please use the final action report form attached to this review or available on-line at www.orangecountygov.com/planning.

Exhibit VIII.C.4.a Submit a description of, and provide schematics illustrating, the Applicant's master plan for the land and the Project Site showing major activities and functions. Provide a phasing plan for the proposed components of the master plan, if applicable.

Attached is a map which identifies the Applicant's master plan as submitted to the Town of New Windsor. Approval of this master plan is expected in July 2014. Permits to start demolition and clearing have been issued and are also attached.

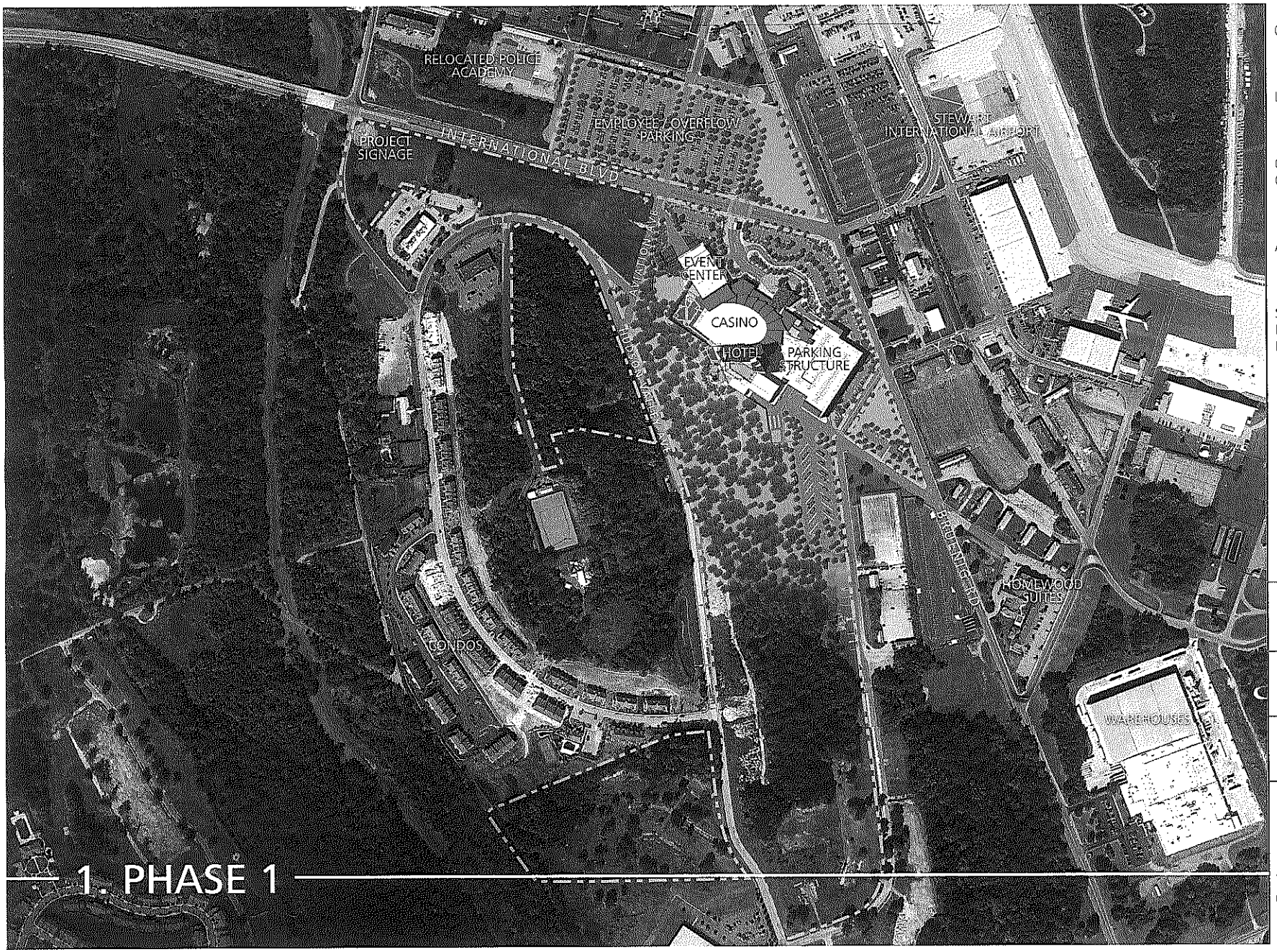
Master Plan

Initial Phase: The Applicant plans to construct and open, within 24 months of the License award, a gaming facility which includes the following:

- Gaming floor of approximately 100,000-110,000 for 3,000 slot machines and 100 tables
- 7 or more restaurants, bars and lounges
- Retail space around the gaming floor
- "Back-of-the-house" space
- Employee parking and entrances and locker rooms
- Employee only day care facility
- 14-story 350 room hotel
- Indoor/outdoor pool
- Training room and Spa
- Meeting/banquet rooms
- International Event Center (25,000 sq feet)
- Landscaping, etc.
- Surface parking lot(s)
- Parking garage (7 stories – projected)

Future Building Phase: It is anticipated that the additional land to the north which is projected to initially be additional surface parking will be utilized as a future amenity space. Additional marketing analysis needs to be completed to finalize these plans. Potential options include the following: 140,000 square feet of boutique retail space, regional multi-plex movie theater, bowling center (including duckpins).

Future Outdoor Amenities: It is anticipated that the vacant land to the south and west of the resort will be utilized for outdoor, seasonal activities. This may include: mountain slides, skiing, practice golf putting green and sand traps, bike trails, equestrian trails, mountain-top overlook, and outdoor amphitheater.



1. PHASE 1

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

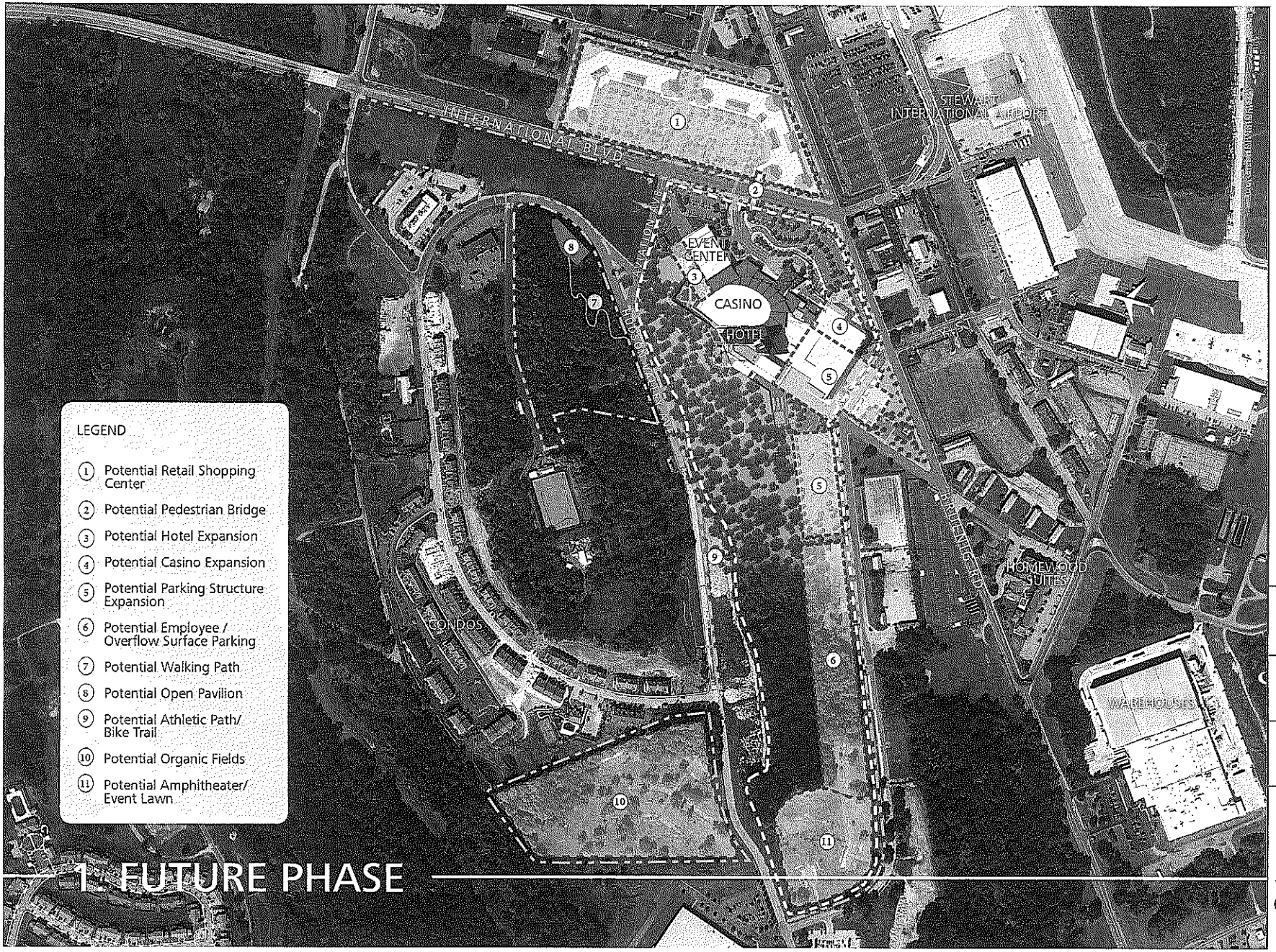
SHEET TITLE:
Master Plan

EXHIBIT NO:
Exhibit VIII.C.4.a

DATE:
June 30, 2014

NORTH
0 100' 200' 400'
1"=400' at 11" x 17"

The Grand Hudson HOTEL & CASINO



1. FUTURE PHASE

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Master Plan

EXHIBIT NO:
Exhibit VIII.C.4.a

DATE:
June 30, 2014

NORTH
0 100' 200' 400'
1"=400'
at 11" x 17"

The Grand Hudson HOTEL & CASINO

Exhibit VIII.C.4 b. Submit a detailed analysis of the suitability of the proposed Project Site for the proposed Gaming Facility and the ways in which the proposed Gaming Facility supports revitalization, if applicable, and the proposed relationship of the Project Site to adjoining land uses and proposed land uses to ensure compatibility with those adjoining land uses.

The Project Site is located at the former Stewart Army base. The Town of New Windsor is the owner of the site, having acquired it from the United States Army Reserve (USAR) through an act of Congress (the Strom Thurmond Defense Act of 1999), for the specific purposes of economic development. The Town of New Windsor has actively supported the redevelopment of the site as a mixed use commercial property in support of economic development purposes.

In 2002/2003, a project known as the "New York International Plaza" (NYIP) was proposed for the site. The 2002/2003 proposal went through a full environmental review, including the preparation of Draft and Final Environmental Impact Statements. The proposed NYIP included a convention center, hotels, restaurants, retail, offices, residential, educational and light industrial uses. The Town of New Windsor Planning Board issued SEQR Findings that determined that potential impacts from that proposed development had been addressed and mitigated to the maximum extent practicable. The New York International Plaza project entailed the development of over 2 million square feet of mixed development, and the environmental review for that project evaluated impacts from up to 2.5 million square feet in order to ensure that project thresholds would be conservatively analyzed. The proposed Gaming Facility is consistent with the Findings from that analysis.

Since the completion of that EIS, development projects and mitigation measures (such as the construction of International Boulevard and other transportation improvements) have been put in place in accordance with the Findings Statement. As projects and actions were proposed in the area of the "New York International Plaza" site, the Town has utilized the EIS and its Findings to evaluate the particular project or action in accordance with SEQR. While portions of the site have been redeveloped, significant areas remain vacant and underutilized.

Approximately 140 acres will be leased for the Grand Hudson Hotel & Casino. This will continue and greatly expand upon the redevelopment of these lands associated with the former military base. The main facility for this proposal will be built south of International Boulevard, west of Breunig Road, and east of Airport Center Drive. Potential future retail development would be north of International Boulevard, and other areas (approximately 80 acres) would remain undeveloped at this time. Currently, the property is mostly vacant land, although there are some abandoned military buildings on the site that would be demolished. Active uses will occupy approximately 60 acres. Neighboring uses nearest the development site consist of the Stewart International Airport and associated commercial development. There are some residential properties located at the western edge of the Project Site, but these residences are buffered from impacts by lands to be permanent open space, and the presence of a large hill that will also be preserved.

The site is in conformance with zoning and the Town of New Windsor Comprehensive Plan. The Town of New Windsor 2009 Comprehensive Plan identifies the lands around Stewart International Airport as a location for more intensive development in order to support economic development and job creation. It specifically recommends that the Town "should encourage airport related development such as hotels, conference centers" and other uses. It continues that new development "should reflect a combination of destination uses that would benefit from the Airport and surrounding regional highway system, and uses that will serve and support the immediate region." (p. 20). The proposed use is consistent with these goals and recommendations.

Regional documents also support the use of this area for economic development purposes. The Mid-Hudson Region Economic Development Council Strategic Plan calls for economic development associated with Stewart International Airport, and recommends capitalizing on the region's traditional strength in tourism. The creation of "destination hotels" is specifically cited as one of the strategies recommended in support of tourism in the region. The report continues, in reference to destination lodging: "Where appropriate, the viability of casino gambling should also be considered." (p. 41). The Orange County Comprehensive Plan, last updated in 2010, identifies the project site and the surrounding area as a "Priority Growth Area" for economic development based on its available utilities, highway access and public transportation. Senator Schumer has been quoted, saying that, "Stewart Airport is the economic engine of the Hudson Valley".

The property is presently zoned Airport (AP), which allows indoor, and outdoor recreational facilities and structures, hotels, convention and conference centers, and offices, as well as more intensive uses such as manufacturing. The original EIS for the New York International Plaza project included retail uses but the current zoning does not address (not allow) retail uses in the AP zoning district. The Town is promulgating a new Overlay Zoning district for this site that would specifically address issues relating to gaming/entertainment and mixed use development such as being proposed. This district is called the "Planned Casino Overlay District (PCOD)".

The Town Board has determined that this site of approximately 140 acres adjacent to Stewart International Airport is suitable for development as a full service casino with associated uses. The property has an existing four-lane public road connecting to Interstate 84 and was approved previously for substantial development (NYIP project) which never came to full fruition. Rezoning the property to allow a full service casino and associated uses is consistent with the Town's Comprehensive Plan and promotes economic development that supports the protection of the public's health, safety and welfare.

The proposed use of the property is compatible with adjacent land uses. Stewart International Airport abuts the property to the east and north. Nearby uses include offices, hotels, and light industrial/distribution facilities. Existing residential uses to the west are buffered from this development by permanent open space and a hill, and have been shown through the SEQR process to not be impacted by this development. No new residential uses are proposed, and there will be no direct impacts on local population. While the project does represent an increase in density, the proposed use is consistent with the prior, approved proposal for the New York International Plaza, which would have developed over 2 million square feet of residential, office and retail uses on the site. The project will not only directly support economic revitalization by creating jobs, taxes and increased tourism, it will also support the growth of existing businesses. The owner intends to work closely with existing businesses to source materials from local vendors and securing partnerships with local businesses.

In summary, the Grand Hudson Resort & Casino will be the culmination of the economic revitalization envisioned 15 years ago for this site adjacent to Stewart airport; is in accordance with all local and regional plans; has been shown to not have any significant environmental impacts; and is compatible with adjoining land uses as envisioned by the extensive planning completed for this site.

Exhibit VIII.C.4.c Description of the Building Program of the Proposed Gaming Facility and Master Plan

Area Program Summary

ROUNDED UP TO 50

THE GRAND HUDSON RESORT AND CASINO PROGRAM AREAS *Note*: All areas shown in square feet (sf)			PROPOSED PROGRAM AREAS
		CASINO	
		CASINO GAMING (INCLUDING CIRCULATION)	101,550
		CASINO AMENITIES (COATS, ATMS, PROMOTIONS, TOILETS, ETC.)	18,300
		CASINO BACK OF HOUSE (BOH, INCLUDES FUNCTIONS COMMON TO HOTEL & CASINO)	46,050
		CASINO SUBTOTAL	**165,900**
		HOTEL TOWER	
		HOTEL GUESTROOMS	168,100
		HOTEL TOWER BACK OF HOUSE & CIRCULATION	53,700
		HOTEL AMENITIES IN PODIUM (LOBBY, BUSINESS CENTER, POOL & FITNESS, ETC.)	13,000
		HOTEL BACK OF HOUSE IN PODIUM	5,050
		HOTEL TOWER SUBTOTAL	**239,850**
		RETAIL, DINING & ENTERTAINMENT	
		FOOD & BEVERAGE OUTLETS (INCLUDING KITCHENS & SUPPORT)	41,300
		RETAIL	6,100
		ENTERTAINMENT VENUES (CLUBS)	7,800
		EVENT CENTER	11,000
		EVENT CENTER SUPPORT (PRE-FUNCTION, TOILETS, CIRCULATION & BOH)	25,400
		SPA	3,000
		PUBLIC CIRCULATION (EXCLUDING WITHIN CASINO FLOOR)	25,200
		RETAIL, DINING & ENTERTAINMENT SUBTOTAL	**119,800**

		CONFERENCE & MEETING SPACES	
		HOTEL CONFERENCE CENTER (BALLROOM & MEETING ROOMS)	10,000
		HOTEL CONFERENCE CENTER SUPPORT (PRE-FUNCTION, TOILETS, CIRCULATION & BOH)	9,900
		CONFERENCE & MEETING SPACES SUBTOTAL	**19,900**
		BUILDING SYSTEMS & BACK OF HOUSE CIRCULATION	
		CENTRAL UTILITY PLANT / MECH., ELEC. & PLUMBING	39,550
		BACK OF HOUSE CIRCULATION	32,150
		BUILDING SYSTEMS & BOH CIRCULATION SUBTOTAL	**71,700**
		PROJECT SUMMARY	
		TOTAL CASINO & HOTEL AREA	**617,150**
		PARKING AREA	**682,800**

Refer to the Business Plan Exhibit VIII.A.5 for additional information.

Project Description

The Grand Hudson Resort and Casino will be a four-star resort, providing guests with an unpretentious but luxurious resort experience. The architectural style will take cues from the mountain lodge architecture of the Catskills region, but with a transitional interpretation using contemporary detailing and finishes.

The Project is nestled into the hillside allowing for public gathering areas that interact with the natural surroundings. This emphasizes the central concept of linking the built environment with nature. Numerous sustainable measures are planned for the project to the same aim, including a mix of green and occupied rooftop spaces and clerestory day lighting over the perimeter of the casino. Project components are as follows.

Casino

Programming Rationale

Given projected levels of visitation and gaming revenues, the casino will cater to a number of markets including residents from the three surrounding states, the New York metropolitan area, as well as tourists from other parts of the United States along with international visitors. Within these groups are unique racial and ethnic groups that have specific wants and needs. As such, the casino will be designed to service their unique desires. The casino will be carefully designed to cater to these multiple gamer groups.

Exhibit VIII.C.4.c Building Program of the Proposed Gaming Facility and Master Plan

Programming Strategies

- Create an easily navigable entertainment experience.
- Design a casino floor that allows for the free and open movement of gamers
- Create specialized gaming areas for mass market, premium level players, Asian gamers and poker players
- Concentrate all gaming activity on a single level
- Offer exclusive amenities to premium level players

Casino Components

The 101,550 square foot single-level casino will occupy the main floor of the Project

- Main Gaming Floor
  - 3,000 electronic gaming devices
  - 100 table games
- VIP Gaming Room
- Premium Players' Lounge
- Poker Room
  - 30 tables

Hotel

Programming Rationale

The Grand Hudson Resort and Casino is gaming resort and as such, requires an outstanding lodging experience. The lodging experience must not only support the casino's needs but function as a full-service business class hotel that can accommodate conferences, conventions and independent business travelers. The hotel must also be large enough to accommodate anticipated weekend demand from the casino yet optimally sized to support midweek business demand.

Unlike Las Vegas where in 2011 the average length of stay was 3.7 nights (4.3 days), visitors to the Grand Hudson will have an average length of 1.8 nights. As such, the mix of hotel amenities must be different than those found in Las Vegas. The number and size of non-gaming amenities (retail, dining, spa, pools, outdoor recreation, and entertainment) will be different, designed to maximize gaming revenue while optimizing guest satisfaction.

Programming Strategies

- Develop a 350-key, AAA 4-Diamond hotel that offers a sufficient mix of amenities to meet the needs of casino visitors, business travelers and conference/meeting attendees.
- Provide a sufficient number of luxury experiences to meet the needs of gamers and VIP guests.
- Create memorable experiences for all The Grand Hudson hotel guests.

Hotel Components

- 295 king and double-double rooms
  - 420 sq. ft.
  - 4-fixture bah
- 40 junior suites
  - 630 sq. ft.
- 10 standard suites
  - 840 sq. ft.
  - Separate living room
- 5 penthouse suites
  - 1,250 sq. ft.
  - Balconies and terraces

- Indoor pool
- Outdoor pool
- Full-service spa
- Fitness center
- Business center

Conference Center

Programming Rationale

Casino-hotels are in high demand on weekends and holidays, so much so that area hotels often benefit from excess demand and are able to fill their hotels during inherently slower weekend periods.

Mid-week demand for casino rooms tends to be soft, requiring the casino to offer discounted or complimentary rooms to members of their rewards program. This strategy is common in the casino industry but tends to reduce the value of the lodging experience. It also reduces profitability of the property. By developing a conference center, a casino can fill its hotel with attendees during mid-week periods. The setting for the Grand Hudson also presents a unique environment for corporate retreats and conferences. The natural setting associated outdoor activities and overall attractiveness makes it ideally suited as a conference and meeting center.

The casino will also have needs for a large meeting space. Player parties and headline entertainment will be provided to attract new players and encourage incremental visitation from existing players.

Programming Strategies

- Develop a conference center adjacent to the hotel that provides an environment suitable for business meetings, corporate retreats and regional conventions.
- Create an environment that can be used for casino parties and events.
- Create a larger events center that can accommodate 600 people in a banquet arrangement or 800 persons in a showroom format.

Conference Center Components

- 7,200 square foot ballroom, divisible into two 3,500 spaces
- Three 1,000 square foot meeting rooms, each capable of accommodating 40 people in a classroom format

Dining

Programming Rationale

The Grand Hudson will be targeting customers whose primary reason for visitation is gambling – not dining. While it will be important to serve these guests with high quality food products, the dining experience will be secondary to the gaming experience.

More important, celebrity chef dining experiences take time away from the gaming experience. Gamers seek to get in and out of a restaurant quickly and get back into the action. Fine dining experiences, particularly those operated by third parties do not adhere to the principles of quick cycle time. The casino also cannot control the service experience. It is for these reasons that the Grand Hudson intends to operate most of its restaurants in order to better tailor dining experiences to the wants and needs of gamers. Only one restaurant is designated as a leased operation.

Programming Strategies
Offer a traditional mix of dining options that meet the needs of the region's gamers. Develop restaurant concepts appeal to gamer expectations with the addition of unique dining concepts developed in-house.

Dining Components

Hudson Valley Buffet
Buffets are an essential dining option for all large-scale casinos. They allow gamers to dine and get back on the floor quickly and they offer diners a wide variety of high-quality menu items. No matter the racial or ethnic group, virtually anyone can find food items that are appealing. The Buffet will feature a 4-star dining experience with foods prepared in a series of highly themed exhibition kitchens. Hudson Valley dishes, seafood from Cape Cod, along with a variety of ethnic cuisines including Chinese, Korean, Jewish and Italian will be served in themed stations, offering diners a feast for the eyes and palate.

The Buffet will strive to feature local and regionally grown foods, not only to emphasize freshness, but to support local and regional farm and food producers. Ultimately, the goal of the Buffet, in addition to providing great dining experiences, is to tell the story of the Hudson Valley.

Italian Restaurant
The Italian Restaurant will capture the intimacy of the great Italian restaurants in the Little Italy. The menu will be high quality but this will not be a fine dining restaurant. A centerpiece wood fired brick oven and exhibition kitchen where pastas are hand-made will let visitors know that this place is about the food and that food is authentic and fresh. This will be leased to a third party operator with knowledge of and experience in the regional market,

Lucky Noodle
Lucky Noodle is the property's Asian themed restaurant. Lucky Noodle will replicate the vibrancy, smells, tastes and diversity in food styles found in Asian countries. This will be a highly themed restaurant featuring Hong Kong, Shanghai, Korean, Vietnamese, Japanese and other Asian specialties. All cuisines will be authentic and appealing to targeted ethnic groups while being accessible to those who are unfamiliar so they can taste, try and learn.

Savannah
Savannah brings the unique cuisines of the South to the Hudson Valley. The menu will offer traditional Southern dishes of Alabama and Louisiana mixed with the low country cuisines found along the Savannah River in South Carolina.

Grand Hudson Steak and Seafood
Grand Hudson Steak and Seafood will be a contemporary steak house. The atmosphere will introduce outside light into the dining room, creating an appealing dining environment. The dining room will feature wood treatment, comfortable seating and crisp white linen napkins. The menu will feature copious cocktails, choice quality steaks, fresh seasonal vegetables from the Hudson Valley along with fresh fish and seafood from the Atlantic coast. The restaurant will be business casual but elegant enough to serve as a special occasion venue.

Grab & Go

Grab & Go will offer a wide range of freshly prepared quick-serve items. It will feature traditional grilled items, freshly made sandwiches and salads.

Beans
Beans will serve as the hotel lobby coffee bar and the property's pastry and ice cream shop.

The Grapevine VIP Lounge
The Grapevine VIP Lounge will be a private lounge and dining room accessible through the high limit gaming room. It will offer a place for premium players to get off the gaming floor, relax, check their messages and grab a beverage or a light meal. The VIP Lounge will offer a private bar and a menu of complimentary appetizers prepared to order.

Entertainment

Programming Rationale
Entertainment will serve a critical role in the marketing activities at the Grand Hudson Hotel & Casino. The programming will include a mix of entertainment venues designed to appeal to gamers with diverse tastes in entertainment. The ultimate goal is to energize the gaming experience by providing a diverse program of entertainment..

Programming Strategies
Create a compelling mix of entertainment venues that can accommodate a wide variety of entertainment options.

Entertainment Components

The Meridian Bar
The Meridian Bar will serve as a focal point in the casino. Located in the center of the casino it will create a zone of energy and excitement that will emanate into the surrounding gaming floor. It will be a place to meet, take a break, recharge and relax. The Meridian Bar will seat 128 guests at the bar and surrounding lounge seating.

Jazz Lounge,
The Jazz Lounge will serve a number of purposes. During the day the Jazz Lounge will serve as a casino bar. At night the Jazz Lounge will convert to an entertainment lounge with nightly live entertainment and dancing. On weekend afternoons it will be the place to meet and watch sporting events.

The Club
The Club is a two-story, high-energy nightclub. Open on weekends, the Club will accommodate 400 patrons.

Events Center
The Events Center will offer headline entertainment in an intimate setting. Designed to accommodate 800 patrons, the room will afford patrons excellent site lines and up-close seating. Its unique size will assure that the facility will not compete with larger entertainment venues found in regional market.

Ultra Theater
The Ultra Theater is a private movie theater and special event experience where invited guests can attend private screenings, closed-circuit sporting events and private parties. Designed to accommodate 40 patrons, the Ultra Theater will offer state-of-the-art audio/visual technologies in an intimate setting.

Retail

Exhibit VIII.C.4.c Building Program of the Proposed Gaming Facility and Master Plan

Programming Rationale

Retail stores have long demonstrated their importance as part of the entertainment experience in casinos. From fashion boutiques to full scale shopping malls, retail serves an essential function. An upscale jewelry store can allow a gambler to memorialize a great gaming experience by purchasing a fine watch. A cluster of boutiques allows patrons a diversion from the casino. A general store, strategically placed, allows patrons to purchase beverages and sundries before a long drive home. Grand Hudson leadership understands how to utilize retail to achieve specific goals.

Programming Strategies

Provide a mix of retail options that support the wants and needs of gaming customers and hotel guests. Provide compelling retail options that support and enhance visitors' experiences. The anticipate mix of stores are listed below.

Retail Components

- Hotel Lobby shop
- General Store featuring lottery tickets and sundries, snacks and beverages
- Accessories & Jewelry
- Hudson Valley Wines and Local Artisan Merchandise
- Women's Apparel

Exhibit VIII.C.5.a.5 Proposed Hardscape, Landscape and Landscape Treatments Including any Off-Site Improvements Required to Implement the Proposal

OVERALL LANDSCAPE TREATMENTS
The proposed Grand Resort and Casino will offer a lush and beautiful landscape setting for visitors that is set into the sloping site. While many specimen and interesting plantings are envisioned throughout the development in key focal areas, the overall landscape theme will be focused on plants native to the Hudson Valley area. This will assure use of appropriate indigenous plants that are tolerant and appropriate to the specific site and Hudson Valley setting. Incorporating vegetation types found in the surrounding areas will be a goal so that the new landscape setting blends in seamlessly with the surrounding environment. Native plantings will also encourage a more environmentally sensitive setting, and will be acclimated to the local climate and more conducive to area wildlife. In addition, as part of the overall stormwater management, rain gardens and associated bioswales are planned, which include native and natural plantings. Focus will also be given to establishing a setting that displays seasonal interest all years round. This includes spring bulbs, summer flowers and colorful displays, fall color and winter evergreen interest. It is our intent to have some unique landscape interest happening for each month of the year. A partial listing of potential plantings is included below:

SOFTSCAPE/LANDSCAPE PALETTE *(Partial Listing of potential plant species):*
While numerous specimen plant materials will be utilized in key focal areas around the site, such as entry features and Oasis area, etc., a primary goal for the landscape will be to use native plantings wherever possible and feasible. A partial listing of "typical" plant choices is listed below.

LARGER SHADE TREES:

Acer rubrum	RED MAPLE
Acer saccharum	SUGAR MAPLE
Betula nigra	RIVER BIRCH
Celtis occidentalis	HACKBERRY
Gleditsia triacanthos	HONEY LOCUST
Gymnocladus dioicus	KENTUCKY COFFEE TREE
Liriodendron tulipifera	TULIP TREE
Quercus coccinea	SCARLET OAK
Quercus rubra	RED OAK
Tilia cordata	LINDEN

SMALLER FLOWERING/ORNAMENTAL TREES:

Acer palmatum	JAPANESE MAPLE
Amelanchier canadensis	SERVICEBERRY
Cercis canadensis	EASTERN REDBUD
Chionanthus virginicus	WHITE FRINGE TREE
Cornus kousa	KOUSA DOGWOOD
Crataegus crus-galli 'Inermis'	THORNLESS COCKSPUR HAWTHORN
Prunus x yedoensis	YOSHINO CHERRY (and other varieties)
Pyrus calleryana	ORNAMENTAL PEAR
Syringa reticulata	JAPANESE TREE LILAC

CONIFERS / EVERGREEN TREES:

Larix laricina	LARCH / TAMARACK
Metasequoia glyptostroboides	DAWN REDWOOD
Picea abies	NORWAY SPRUCE
Picea glauca	WHITE SPRUCE
Picea pungens	BLUE SPRUCE

Pinus strobus	WHITE PINE
Tsuga Canadensis	EASTERN HEMLOCK

SHRUBS:

Buxus x 'Green Mountain'	GREEN MOUNTAIN BOXWOOD
Cornus sericea	REDTWIG DOGWOOD
Hydrangea macrophylla	HYDRANGEA (VARIATIES)
Ilex glabra	INKBERRY
Ilex verticillata	WINTERBERRY
Hydrangea paniculata 'Tardiva'	TARDIVA HYDRANGEA
Hydrangea paniculata 'Limelight'	LIMELIGHT HYDRANGEA
Syringa meyeri 'Palibin'	DWARF KOREAN LILAC
Taxus x. media	YEW
Viburnum plic. var. tomentosum	DOUBLE FILE VIBURNUM
Thuja occidentalis	ARBORVITAE

PERENNIALS / GROUNDCOVERS / VINES

Asclepias tuberosa	BUTTERFLY WEED
Chrysanthemum x. superbum	SHASTA DAISY
Echinacea purpurea	PURPLE CONE FLOWER
Eutrochium purpureum	JOE-PYE WEED
Hemorocallis 'Stella De Oro'	STELL DE ORO DAYLILY
Hosta	HOSTA
Liriope muscari	BIG BLUE LIRIOPE
Lobelia cardinalis	CARDINAL FLOWER
Monarda didyma	BEE BALM
Parthenocissus tricuspidata	VIRGINIA CREEPER
Rudbeckia fulgida or hirta	BLACK-EYED SUSAN
Vinca minor	VINCA

Also, to add a bit more drama to the main entry areas and outdoor gathering areas, colorful annuals and seasonal floral displays near the key entry points and focal gathering areas are proposed. This will also include large floral displays in pots or raised planters. In addition, appropriate green roof plantings, such as Sedums and other hardy, drought-tolerant perennial plantings will be utilized. Wherever possible, and wherever enough soil depth can be made available on top of the structure (or in raised planters), larger shrub and tree plantings for visual impact are also a possibility.

LANDSCAPED SLOPES AND TERRACES

The hillside setting is a defining feature for the Casino and Hotel complex. The general character of the site will be defined by the buildings built into the natural hillside, which overlooks the valley and airport below. At the higher points, views will be afforded to the mountains in the distance to the south and east. As detailed in the grading narrative and as shown in Exhibit VIII.C.1.c, the site grading will gently contour to allow the Casino and Hotel complex to nestle comfortably into the hillside, taking advantage of multi-level terracing and variations in the floor levels from one end of the complex to the other. This variation in elevation will also make for a more dramatic experience for visitors, and a more interesting view of the hillside development from below. To highlight, the main entrance will be dramatic as it rises up to the port-cochere arrival area at the main entrance. Large curving retaining walls will also be a defining feature at the site, as they establish various terrace levels and separate the various landscape elements, parking, and building levels. These walls will also become a main part of the overall entrance feature, including a major signage and waterfall feature in line with the main casino entrance. In addition, in the rear of the casino and hotel complex and up high on the slopes, some key site amenities take advantage of the hillside slopes.

This includes the important Event Terrace, which partially sits on a major green roof structure above the casino floor and sits adjacent to a unique lawn amphitheater built into the upper slope. This outdoor open-air amphitheater feature includes small terraced seatwalls with lawn between and a long sloping lawn above for lawn seating. Also, behind the hotel is the dramatic and special "Outdoor Oasis," which is described in detail below.

GREEN ROOF

To promote sustainability, large "Green Roof" areas are proposed above the casino floor and take advantage of the large hillside setting, as the roof of the main casino structure lies flush with the slopes above. The green roofs incorporate both the Event Terrace and Outdoor Oasis areas. These green roof areas are environmentally sound and are designed to blend into the overall landscape setting, minimizing the impact of the large hardscape roof areas. They will include both decorative terrace areas and walkways (roof pavers), as well as appropriate green roof plant materials. The proposed Event Terrace area also incorporates art or sculpture for various key focal points as an added bit of visual interest and attractions. Similarly, over on the Outdoor Oasis roof, a sunken events lawn, dramatic pergolas, large pedestrian gathering/outdoor dining areas, and special site furnishings are envisioned. Note that neither the Outdoor Pool area or the Lawn Amphitheater lie on top of or within the Green Roof areas, given the structural capacity needs for certain elements.

OUTDOOR OASIS

The proposed Outdoor Oasis at the Grand Hudson Resortl and Casino will be a world-class destination and an appropriate compliment to the excitement of the inside casino and hotel activity. Tucked into the existing hillside, the pool complex takes advantage of the sloped topography and offers a dramatic and exciting multi-level pool with a natural waterfall feature. The large raised spa appears as if it is a part of the waterfall complex, while the wall falls outside the spa and is re-circulated to the top. A series of pedestrian bridges provides access across the pool to the spa and an additional sundeck, as well as to a "hidden" walkway that passes behind and beneath the main waterfall feature. This will allow visitors to experience the waterfall and pool area without needing to get wet. A series of terraces and steps also lead up to the top of the waterfall, where there is a playful slide back down the hillside into the pool and a dramatic overlook to the valley below and hills beyond. Overall, the pool area includes:

- Indoor/Outdoor Pool – People will be able to swim from inside to outside.
- Multi-level Cascading Pools with a dramatic and Natural Waterfall feature
- Large raised spa built into waterfall
- Multi-level Pool Deck/Sun Decks
- Natural Stone Features, Seatwalls and Steps
- Focal Overlook Area with Pergola above
- Pedestrian Bridges over pool
- Walkway behind main waterfall
- Potential Pool Slide Feature
- Decorative Pavements / Sun Decks

In addition, the larger Oasis area adjacent to the hotel also includes a large portion of "Green Roof," which is located above the Casino Floor below. This area is a bit simpler and more formal in design, and includes:

- A large Events Lawn as a central and defining feature. This can be utilized for certain outdoor events and functions at the hotel
- A focal fountain feature is strategically located at the end of the events lawn.
- Large decorative terrace areas provide ample gathering areas and outdoor dining throughout the Oasis.
- Large Pergola Feature as a walkway connector between various hotel and function area uses.

EVENT TERRACE AREA
This important area is located on the back side of the Event Center on the uphill side of the structure, and is primarily a major Green Roof on top of the Casino Floor below. In addition, a small outdoor lawn amphitheater takes advantage of the large slope behind the center, and maximizes the site's entertainment potential. The lower part of the amphitheater includes low, 18" height risers (minor retaining walls) to form seatwalls near the stage, with a long sloping lawn for blankets and seating behind up the hill. A raised platform serves as a stage during performances or another terrace for gathering or dining at other times. All told, the Event Terrace area includes:

- Green Roof Feature
- Gathering and Dining Terraces
- Potential Sculpture Garden
- Decorative Roof Pavers
- Lawn aphitheater - 18" Terraced Seatwalls/Risers with Lawn in between
- Sloped Lawn Area for seating and viewing
- Stage Platform/Raised Terrace

The remaining narrative breaks down the various site/landscape features and highlights the various designated/proposed materials for use throughout.

ENTRY FEATURE (at International Boulevard)

- Decorative pavement treatment (Heavy-duty) in the main covered Port-cochere area. This is where most of visitors to the hotel and casino will arrive.
- This includes the primary Casino Entrance Sign within the main entrance drive.
- Large colorful landscape and flower displays are envisioned for this main feature.

ENTRY/SIGNATURE WATER FEATURE

- Given the site's unique topography and proposed terracing, dramatic fountains and waterfalls are proposed within Porte-cochere/cul-de-sca area, and at top and bottom of retaining walls. The water cascades over the wall and main "Grand Hudson Hotel & Casino" sign as a signature casino feature.

LIGHTING PALETTE
As highlighted in the lighting palette at the Grand Hudson Resort and Casino contained herein, the lighting will be both dramatic and extensive, covering the full gamut from pedestrian walkway safety and proper parking light coverage, to the interesting landscape highlighting and dramatic casino related lighting. All visible fixtures, such as parking lot, roadway and walkway lighting would be decorative in style, appropriately complimenting the architectural style of the main casino and hotel structure. In addition, other fixtures would be designed to be invisible to view but give off a dramatic and innovative display of colorful light treatments and the washing of various landscape features, such as the site retaining walls. Specific light types include, but are not limited to:

- Parking Lot Lighting (LED focus)
- Landscape Uplights / Ambient Landscape lighting
- Decorative Lamp Posts along walkways and driveways
- Decorative Bollard Lights for safety along pedestrian walkways
- Recessed Wall and step Lights
- Pools & Water Feature Lighting Treatments

MISCELLANEOUS SITE FEATURES AND MATERIALS
As part of the overall Landscape and Hardscape plan, the following items break down the various site elements and describe the proposed materials and uses.

Exhibit VIII.C.5.a.5 Proposed Hardscape and Landscape

SIDEWALKS & WALKWAYS – This includes most of the primary pedestrian routes within and around the site, including walkway connections from the future retail plaza and airport areas. The likely durable and long-lasting material with be concrete.

RETAINING WALLS – This includes the large curving retaining walls that establish the various parking and landscape terraces, and provide a dramatic entry setting for the casino. It is envisioned that a decorative Segmental Retaining Block Wall material will be utilized to provide the necessary retaining structures. An option is to utilize a decorative stone veneer to mimic the local stone walls in the area.

NATURE TRAILS ON HILLSIDE – In an effort to provide an integrated experience for visitors into the surrounding natural areas, especially the large wooded area at the top of the hill behind the casino, a network of nature trails in envisioned. These paths would likely utilize a loose granular surface.

PEDESTRIAN CROSSINGS – Safe pedestrian access around the site is critical to the success of the casino and hotel complex. Within the property, Decorative pavement treatments, such as stamped/colored concrete or pavers are envisioned, while likely a dominant Line Striping per NYSDOT standards will be utilized on the surrounding public roads.

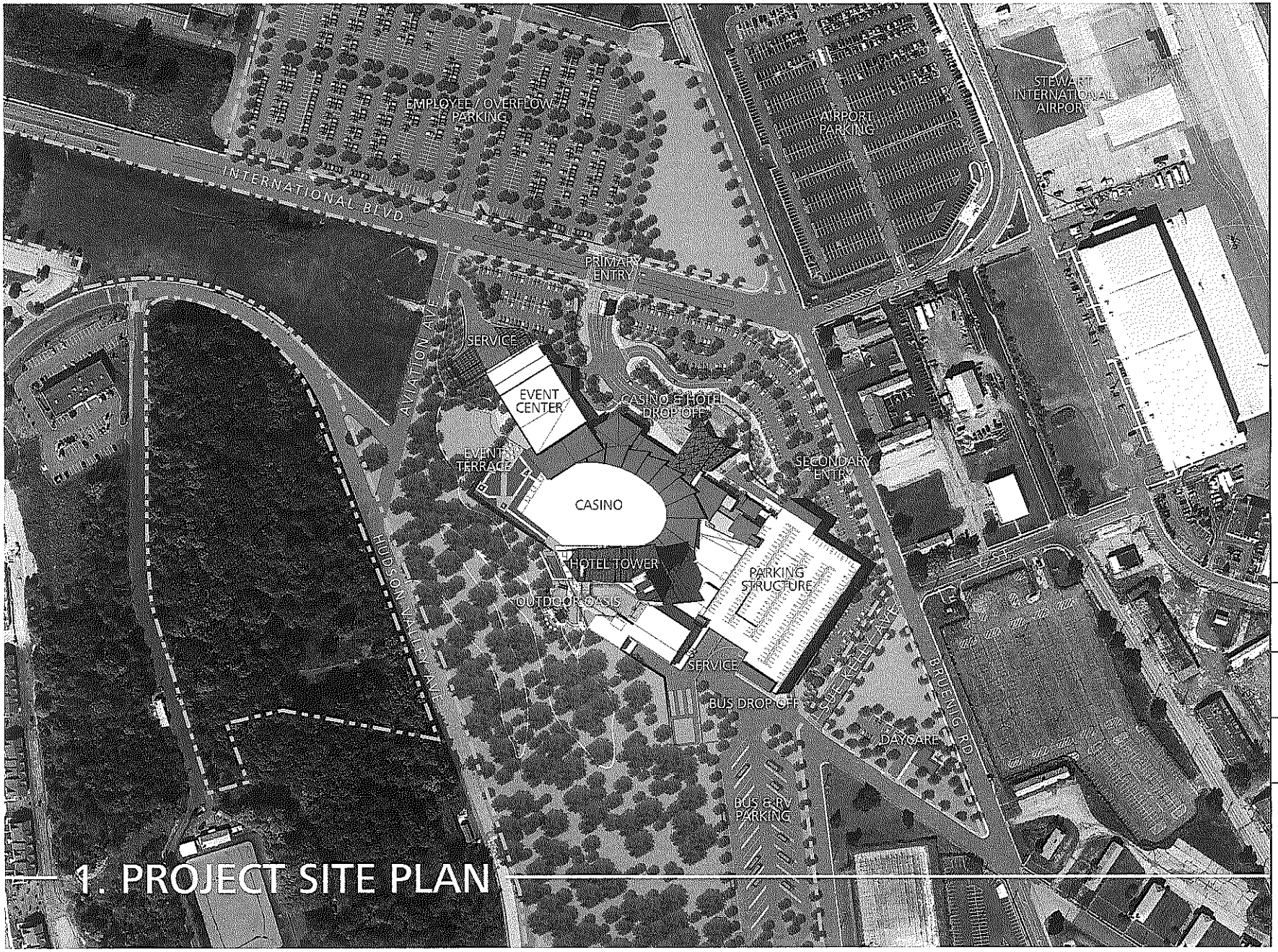
PORTE-COCHERE AREA – This is the primary entrance point for most visitors arriving at the Hotel and Casino. As such, this spot will receive extensive traffic and use and needs to be a durable and long-lasting material. Given that, a heavy-duty, Decorative pavement treatment, such as a paver or stamped/colored concrete is envisioned.

SERVICE AREAS – These high-use truck service areas will be targeted for heavy-duty concrete treatments.

ROADS AND PARKING AREAS – The general driveways and parking areas will be Asphalt Pavement

PLAY AREA AT DAYCARE CENTER – This area is part of the proposed Daycare center near the intersection of Bruenig Road and Sue Kelly Avenue. The site will likely include the following:

- Playground Amenity
- Safety Surfacing
- Landscape screening and privacy fencing



1. PROJECT SITE PLAN

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

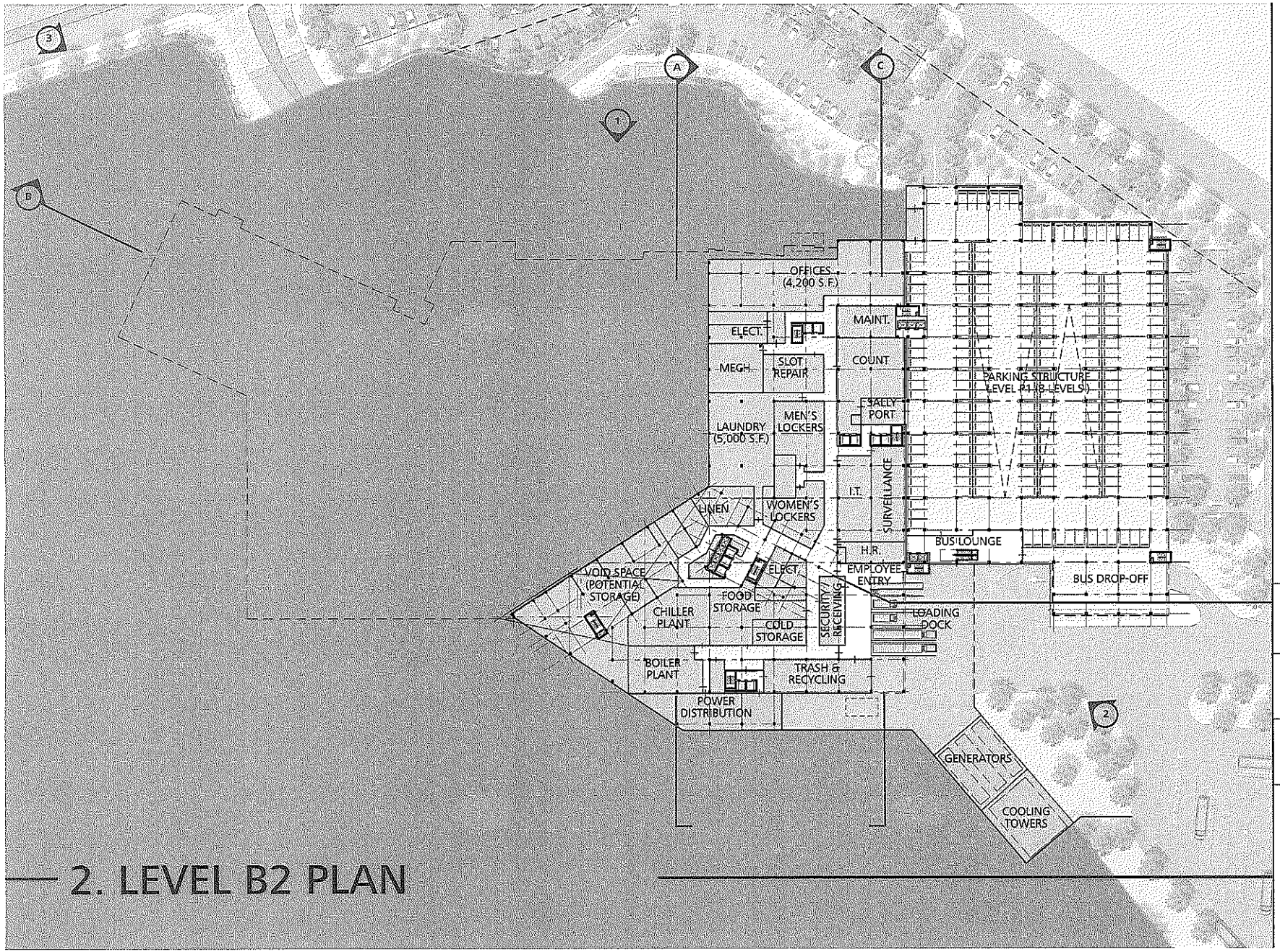
SHEET TITLE:
Site Plan

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH
0 50' 100' 200'
1" = 200' at 11" x 17"

The Grand Hudson HOTEL & CASINO



2. LEVEL B2 PLAN

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Basement Floor Plan

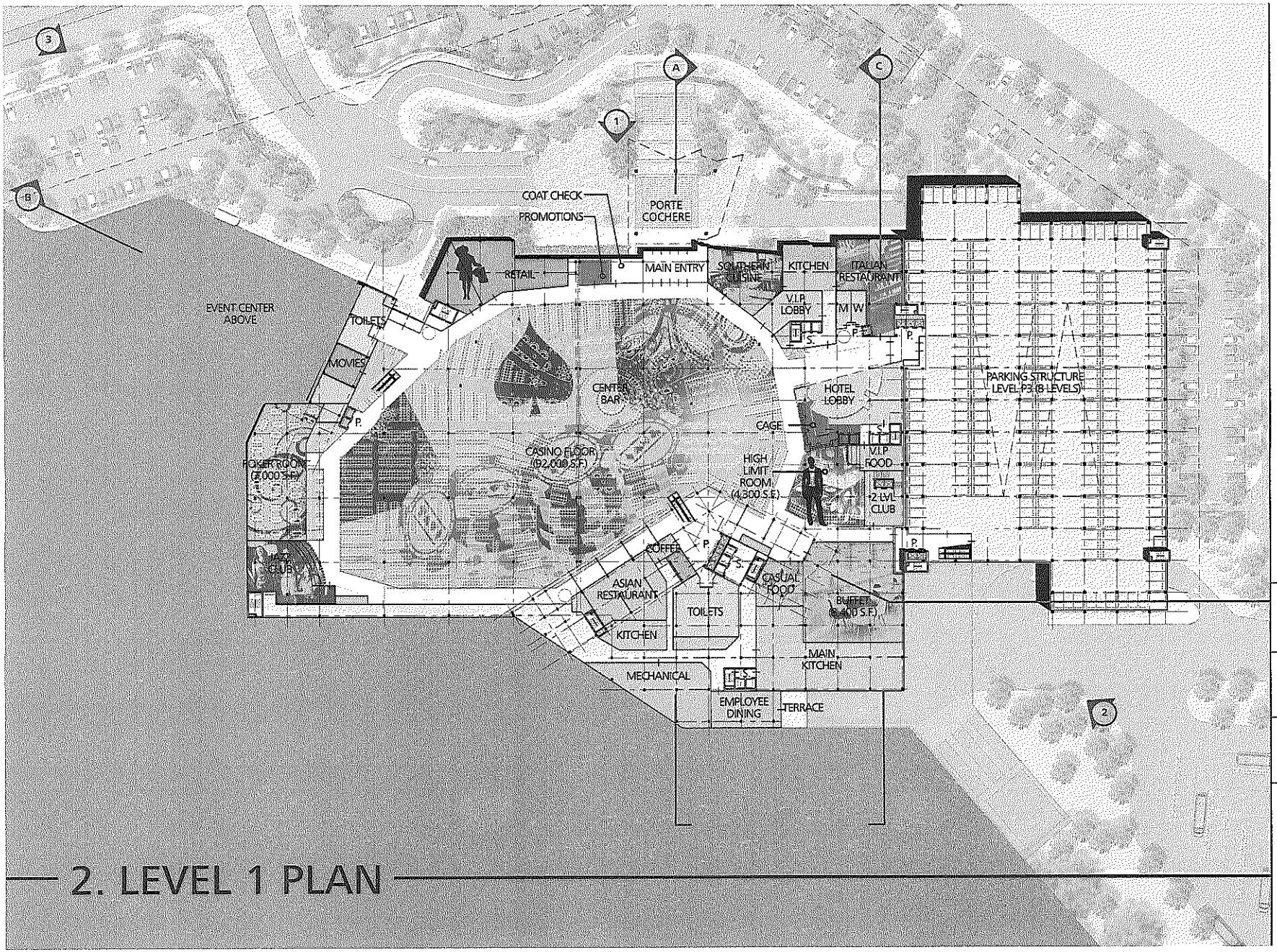
EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH

0 10' 20' 40' 80'
1"=80'
at 11" x 17"

The Grand Hudson HOTEL & CASINO



2. LEVEL 1 PLAN

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC Construction Consultants

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Casino Floor Plan

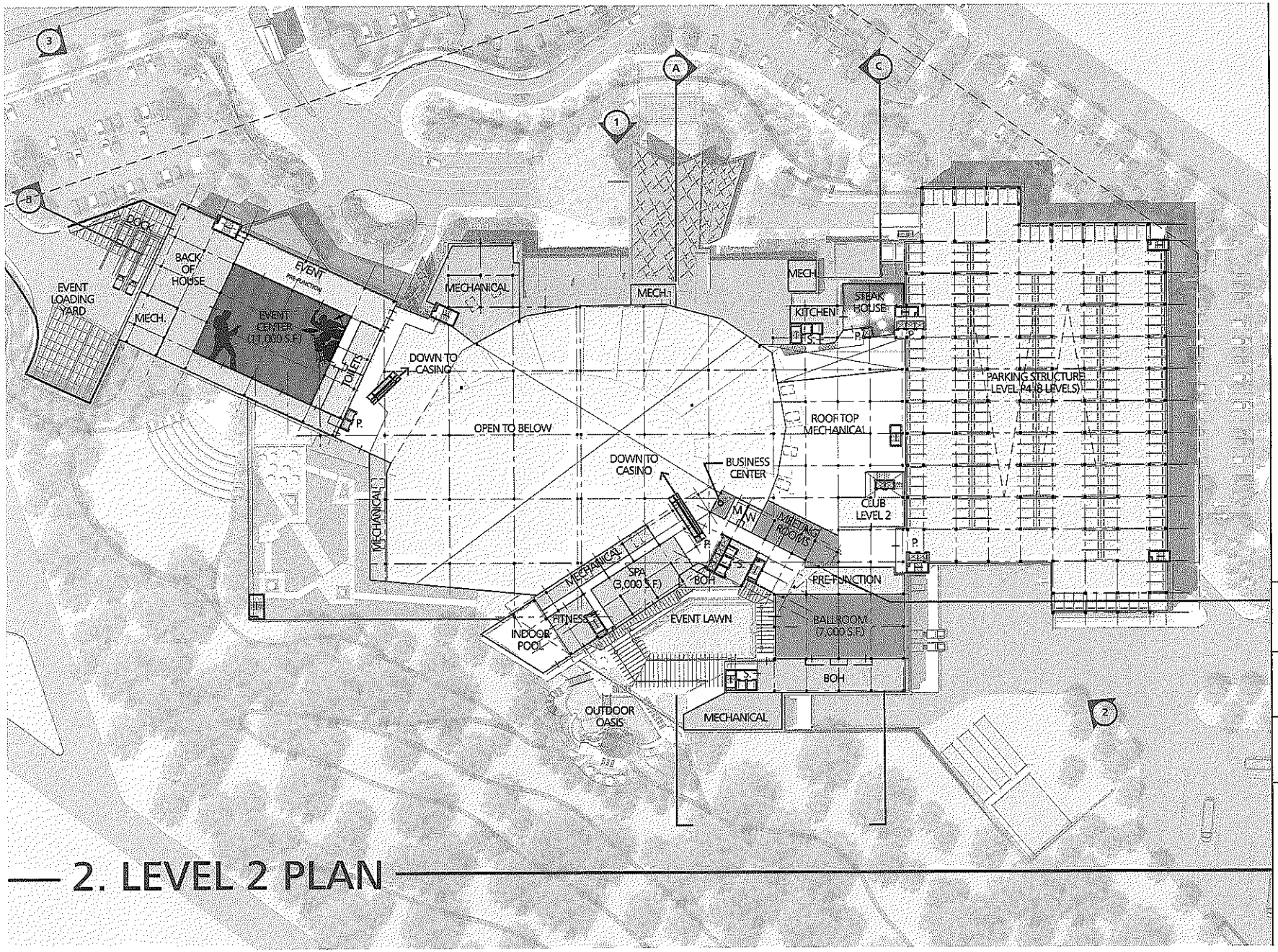
EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH

0 10' 20' 40' 80'
1"=80'
at 11" x 17"

The Grand Hudson HOTEL & CASINO



2. LEVEL 2 PLAN

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Podium Floor Plan

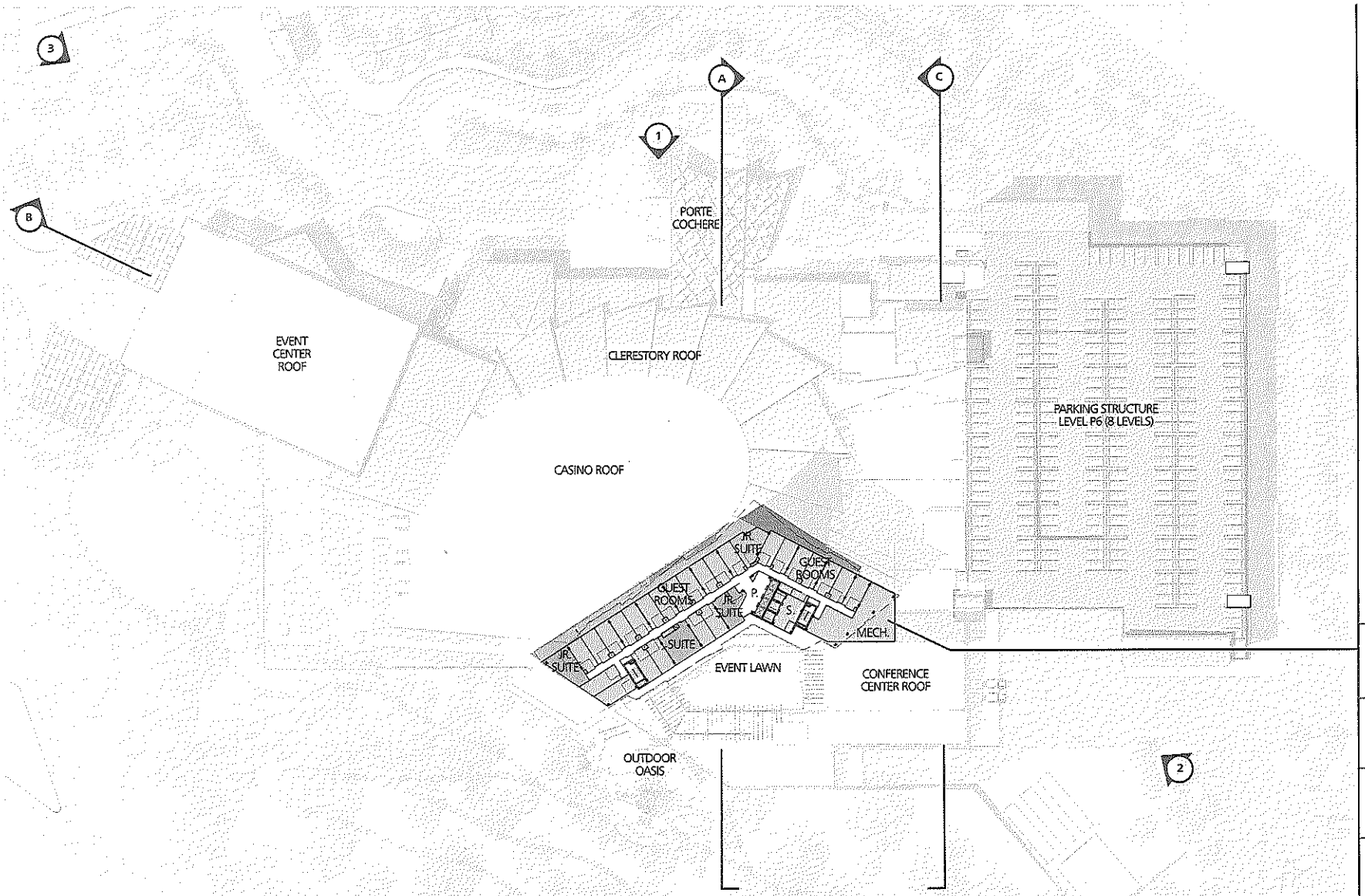
EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH

0 10' 20' 40' 80'
1"=80'
at 11" x 17"

The Grand Hudson HOTEL & CASINO



2. LEVEL 3 PLAN

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Level 3 Floor Plan

EXHIBIT NO:
Exhibit VIII.C.5.a

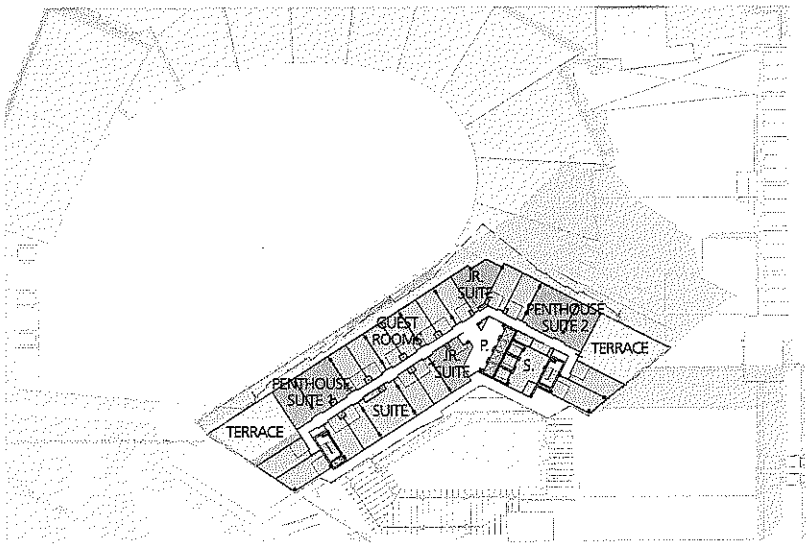
DATE:
June 30, 2014

NORTH

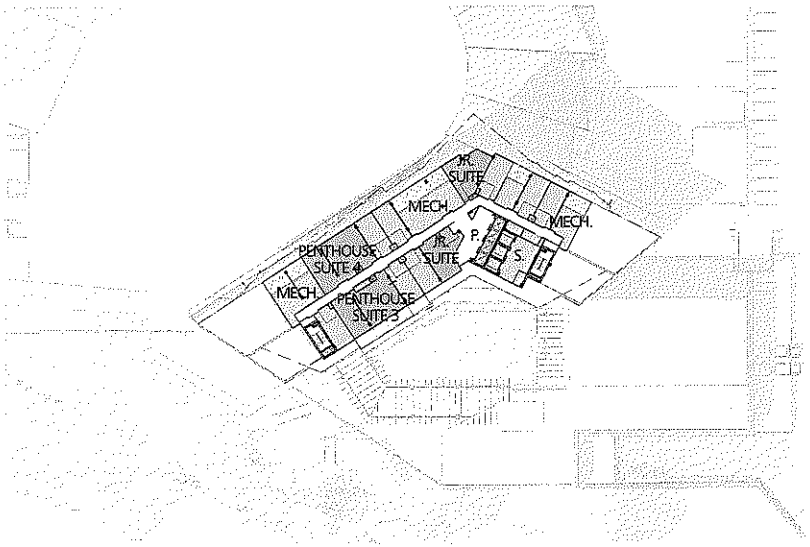
0 10' 20' 40' 80'
1" = 80'
at 11" x 17"

The Grand Hudson HOTEL & CASINO

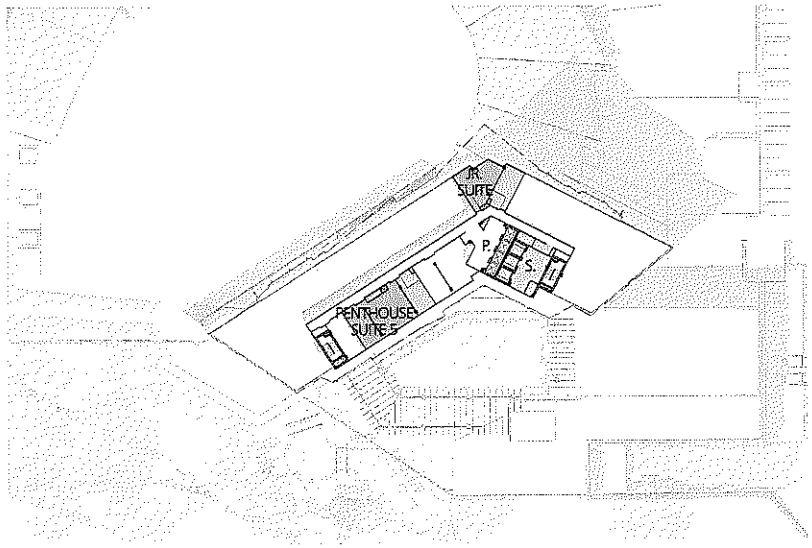
TYPICAL HOTEL TOWER PLAN (GUESTROOM LEVELS 2-10)



GUESTROOM LEVEL 11 PLAN



GUESTROOM LEVEL 12 PLAN



GUESTROOM LEVEL 13 PLAN

2. HOTEL LEVELS

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Hotel Floor Plans

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH
0 10' 20' 40' 80'
1"=80'
at 11" x 17"

The Grand Hudson HOTEL & CASINO

PROJECT IN CONTEXT ALONG INTERNATIONAL BLVD.

KEYPLAN

3A. ELEVATIONS

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
North-West Elevation

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH

NOT TO SCALE at 11" x 17"

The Grand Hudson HOTEL & CASINO

ELEVATION FROM BREUNIG

KEYPLAN

3A. ELEVATIONS

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
South Elevation

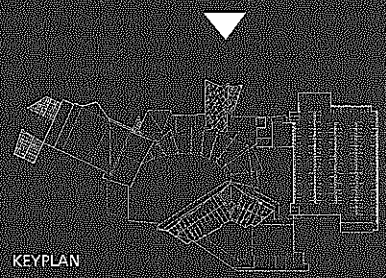
EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH

0 10' 20' 40' 80'
1" = 80'
at 11" x 17"

The Grand Hudson
HOTEL & CASINO



ENLARGED FRONT ELEVATION

KEYPLAN

3A. ELEVATIONS

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
North-East Elevation

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH

0 10' 20' 40' 80'
1" = 80'
at 11" x 17"

The Grand Hudson
HOTEL & CASINO

DECORATIVE SKYLIGHT

STANDING SEAM METAL ROOF & FASCIA - MEDIUM BRONZE COLOR

EXPOSED METAL TRUSS - MEDIUM BRONZE COLOR

CLERESTORY WINDOWS

INTEGRAL COLOR PRECAST PANEL SYSTEM - CREAM COLOR

PRE-FINISHED ALUMINUM MULLIONS

BLUE TINTED VISION GLASS. DUAL GLAZED, RADIANT, LOW-E GLASS, LIGHT REFLECTIVITY.

FRAMELESS GLASS DOORS ENCLOSED IN METAL PANEL PORTAL - CHAMPAGNE PEARL

WATER FEATURE

STONE

3B. VIGNETTES

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Main Entry Facade Details

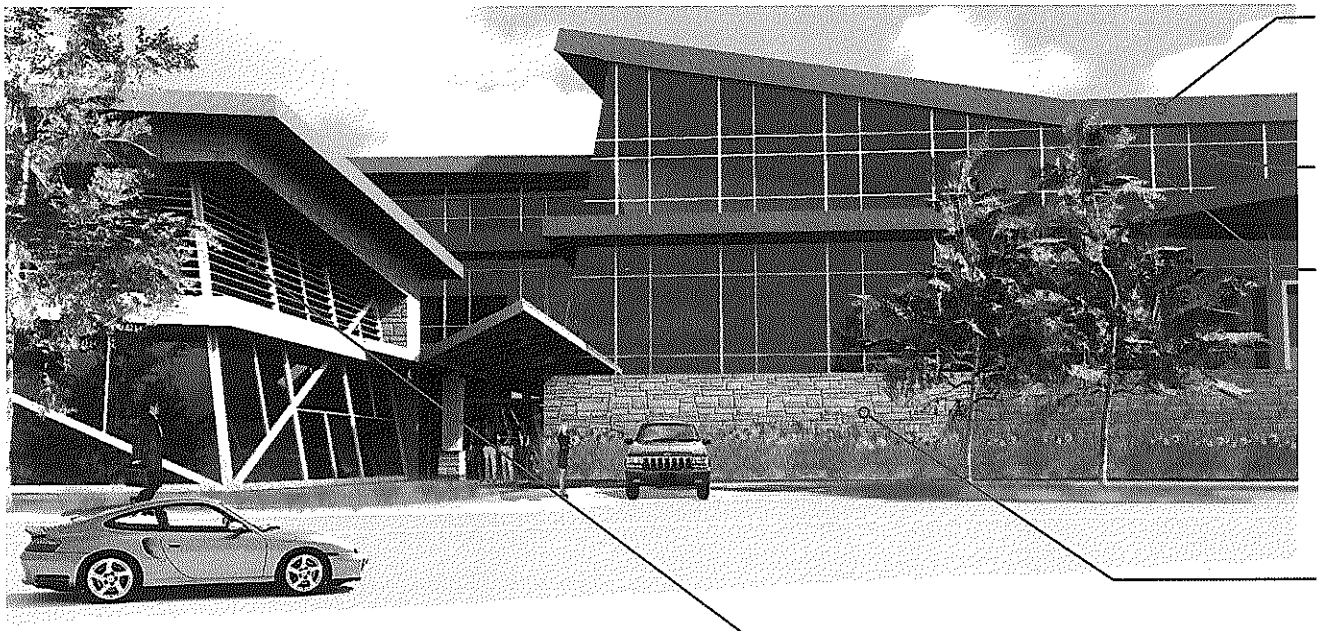
EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH

0 10' 20' 40' 80'
1"= 80'
at 11" x 17"

The Grand Hudson HOTEL & CASINO



3B. VIGNETTES

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC Construction Consultants

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Event Center Facade Details

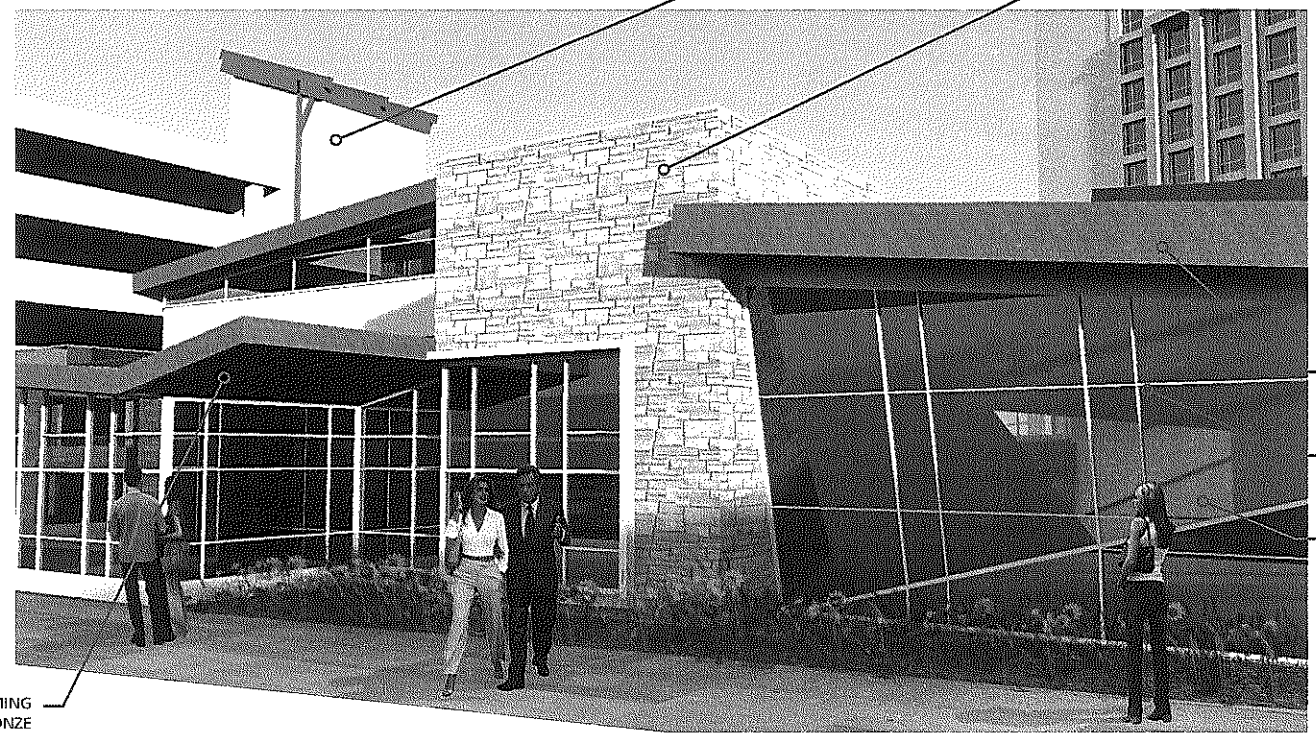
EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH

0 10' 20' 40' 80'
1" = 80'
at 11" x 17"

The Grand Hudson HOTEL & CASINO



3B. VIGNETTES

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Restaurant Details

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH

0 10' 20' 40' 80'
1" = 80'
at 11" x 17"

The Grand Hudson HOTEL & CASINO

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Hotel Facade Details

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH
0 10' 20' 40' 80'
1" = 80'
at 11" x 17"

The Grand Hudson HOTEL & CASINO

3B. VIGNETTES

3B. VIGNETTES

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

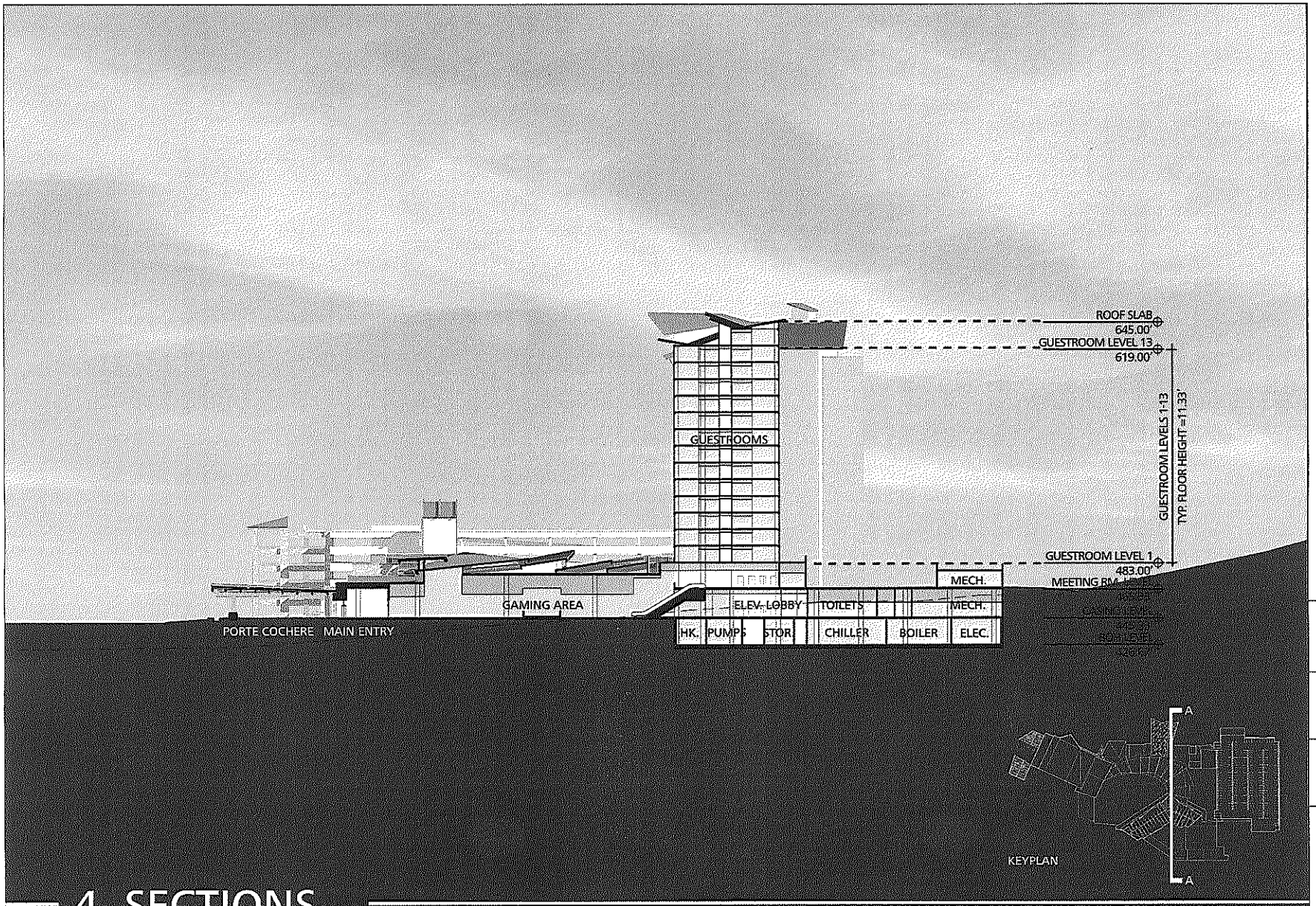
SHEET TITLE:
Outdoor Oasis Details

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH
0 10' 20' 40' 80'
1"=80'
at 11" x 17"

The Grand Hudson HOTEL & CASINO



4. SECTIONS

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC Construction Consultants

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Section 'A'

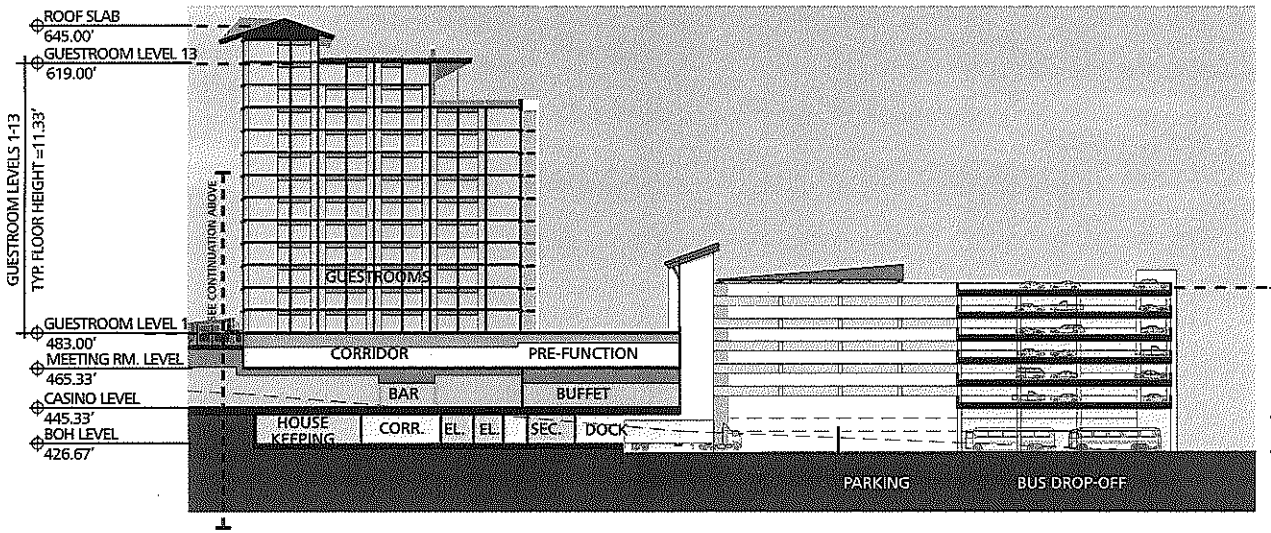
EXHIBIT NO:
Exhibit VIII.C.5.a

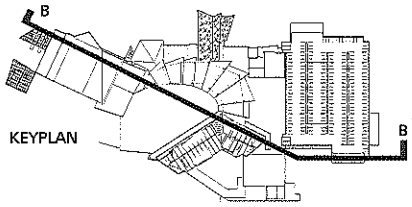
DATE:
June 30, 2014

NORTH

0 30' 60' 120'
1"=60'
at 11" x 17"

The Grand Hudson HOTEL & CASINO





4. SECTIONS

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Section 'B'

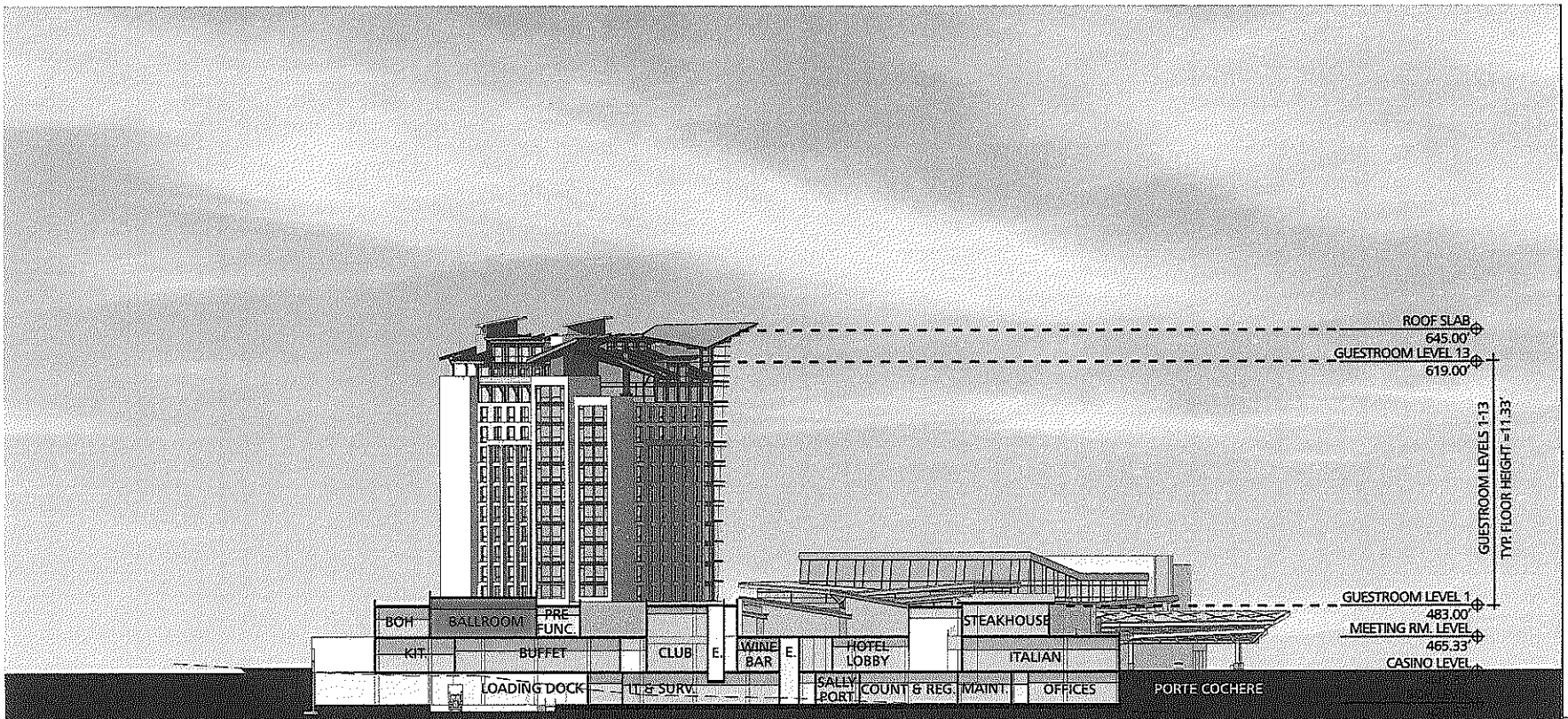
EXHIBIT NO:
Exhibit VIII.C.5.a

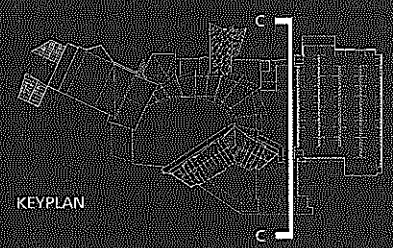
DATE:
June 30, 2014

NORTH

0 30' 60' 120'
1"=60'
at 11" x 17"

The Grand Hudson HOTEL & CASINO





KEYPLAN

4. SECTIONS

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Section 'C'

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH

0 30' 60' 120'
1"=60'
at 11" x 17"

The Grand Hudson HOTEL & CASINO

SOFTSCAPE/LANDSCAPE PALETTE:

SHADE TREES:

Acer rubrum	RED MAPLE
Betula nigra	RIVER BIRCH
Celtis occidentalis	HACKBERRY
Gleditsia triacanthos	HONEY LOCUST
Gymnocladus dioicus	KENTUCKY COFFEE TREE
Liriodendron tulipifera	TULIP TREE
Quercus coccinea	SCARLET OAK
Quercus rubra	RED OAK
Tilia cordata	LINDEN

ORNAMENTAL FLOWERING TREES:

Acer palmatum	JAPANESE MAPLE
Amelanchier canadensis	SHADBLOW SERVICEBERRY
Cercis canadensis	EASTERN REDBUD
Chionanthus virginicus	WHITE FRINGE TREE
Crataegus crus-galli 'Inermis'	THORNLESS COCKSPUR HAWTHORN
Prunus x yedoensis	YOSHINO CHERRY
Syringa reticulata	JAPANESE TREE LILAC

CONIFERS / EVERGREEN TREES:

Larix laricina	LARCH / TAMARACK
Metasequoia glyptostroboides	DAWN REDWOOD
Picea abies	NORWAY SPRUCE
Picea glauca	WHITE SPRUCE
Picea pungens	BLUE SPRUCE
Pinus strobus	WHITE PINE
Tsuga canadensis	EASTERN HEMLOCK

SHRUBS:

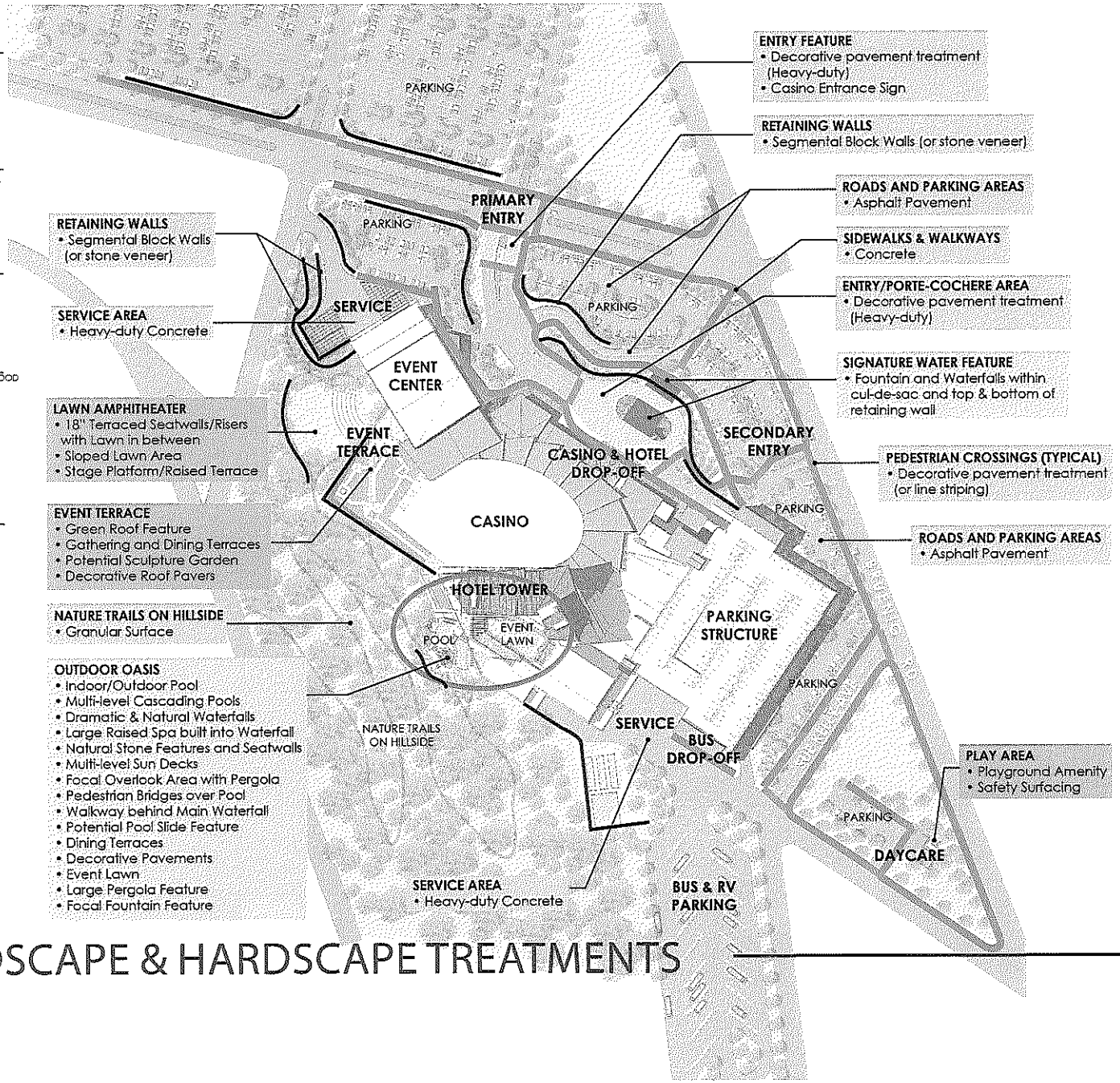
Buxus x 'Green Mountain'	GREEN MOUNTAIN BOXWOOD
Ilex glabra	INKBERRY
Cornus sericea	REDTWIG DOGWOOD
Hydrangea macrophylla	HYDRANGEA (VARIATIES)
Ilex verticillata	WINTERBERRY
Hydrangea paniculata 'Tardiva'	TARDIVA HYDRANGEA
Hydrangea paniculata 'Limelight'	LIMELIGHT HYDRANGEA
Syringa meyeri 'Palibin'	DWARF KOREAN LILAC
Taxus x. media	YEW
Viburnum plicatum var. tomentosum	DOUBLE FILE VIBURNUM
Thuja occidentalis	ARBORVITAE

PERENNIALS / GROUNDCOVERS / VINES:

Echinacea purpurea	PURPLE CONE FLOWER
Hemerocallis 'Stella De Oro'	STELL DE ORO DAYLILY
Hosta	HOSTA
Parthenocissus tricuspidata	BOSTON IVY
Chrysanthemum x. superbum	SHASTA DAISY
Liriope muscari	BIG BLUE LIRIOPE
Vinca minor	VINCA
Monarda didyma	BEE BALM
Rudbeckia fulgida	BLACK-EYED SUSAN
Lobelia cardinalis	CARDINAL FLOWER
Eutrochium purpureum	JOE-PYE WEED
Asclepias tuberosa	BUTTERFLY WEED

DECORATIVE LIGHTING PALETTE:

- Dramatic and Casino Area Lighting
- Parking Lot Lighting
- Landscape & Wall Uplights
- Decorative Lamp Posts for walkways
- Low Bollard Lights
- Ambient Landscape Lighting
- Step Lighting
- Pools & Water Feature Lighting



5. LANDSCAPE & HARDSCAPE TREATMENTS

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL /ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Landscape & Hardscape

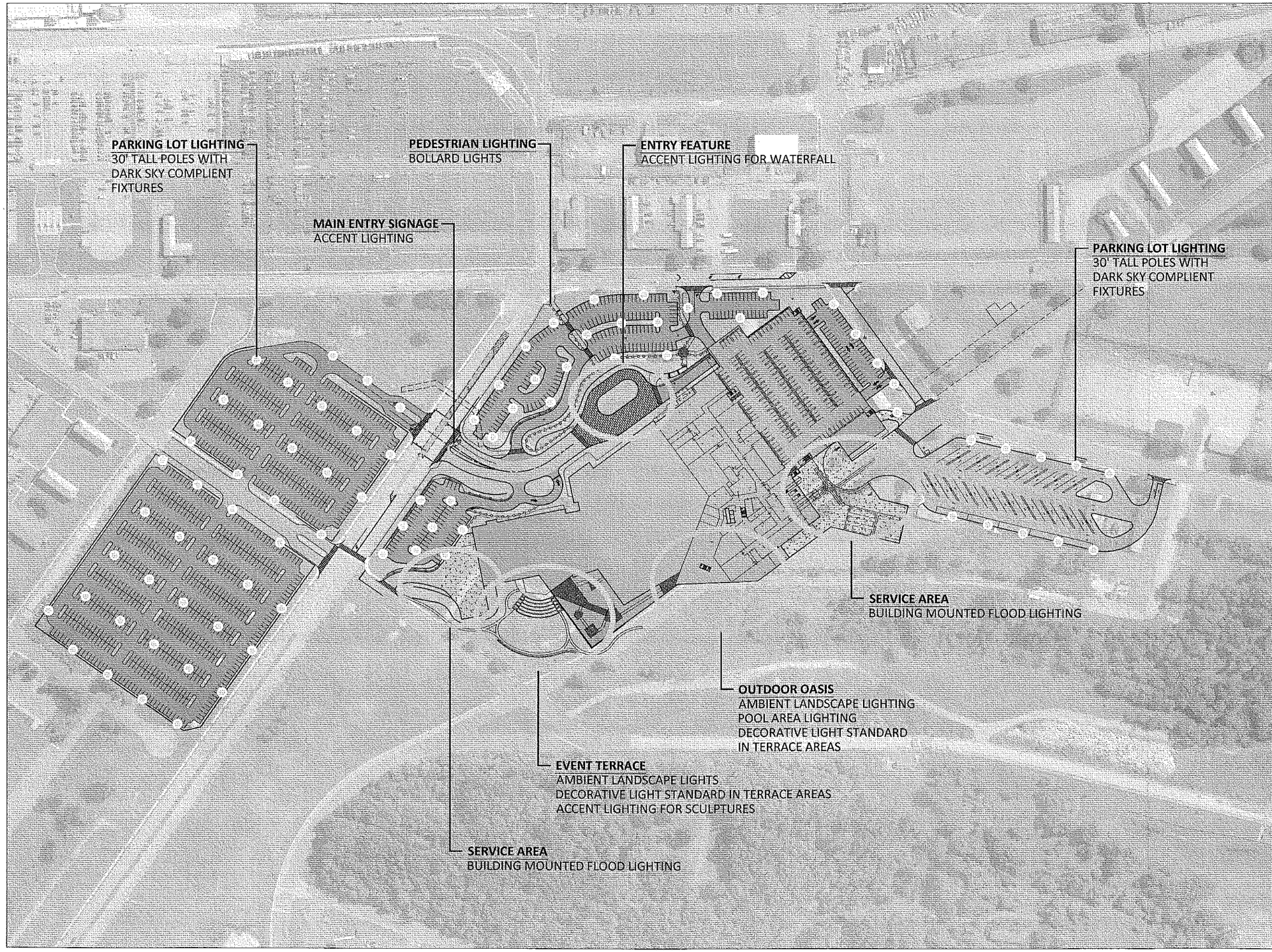
EXHIBIT NO:
Exhibit VIII.C.5.a 5

DATE:
June 30, 2014

NORTH

at 24" x 36"

The Grand Hudson HOTEL & CASINO



OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

EXTERIOR LIGHTING DESIGN

EXHIBIT NO:

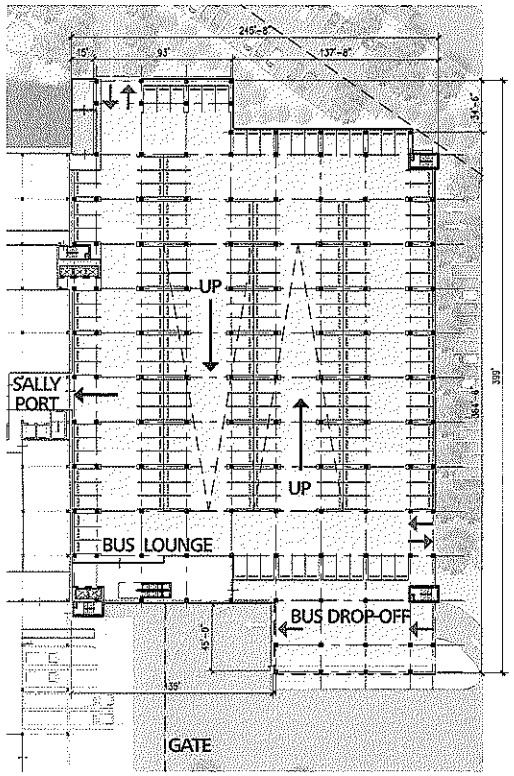
VIII.C.5.a.6

DATE:

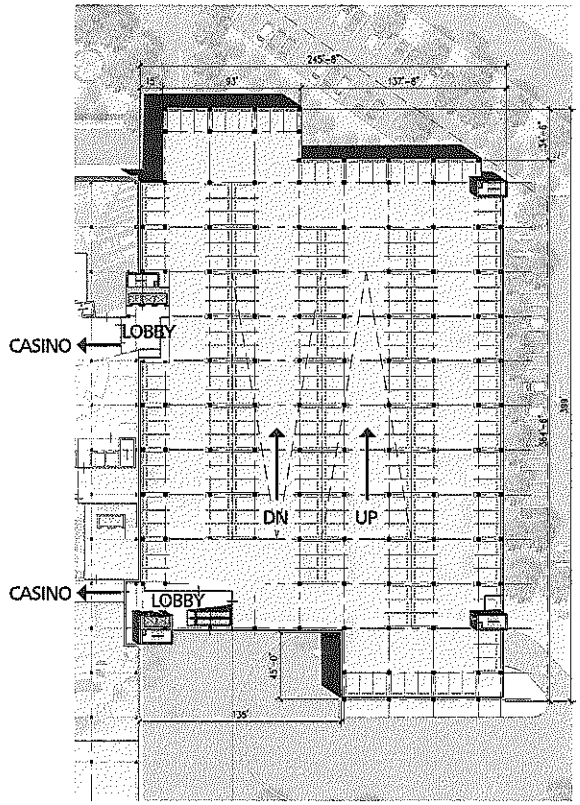
June 30, 2014

0 200 400 Feet

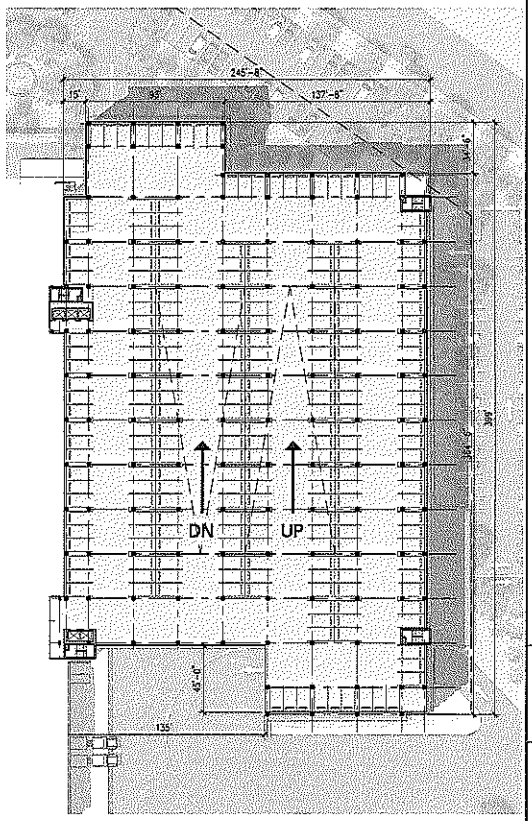
The Grand Hudson HOTEL & CASINO



PARKING STRUCTURE PLAN - LEVEL P1 (EL = 422.66')



PARKING STRUCTURE PLAN - LEVEL P3 (EL = 447.33')



PARKING STRUCTURE PLAN - LEVELS P2 & P4-8 (TYPICAL)

7. PARKING STRUCTURE

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC Construction Consultants

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

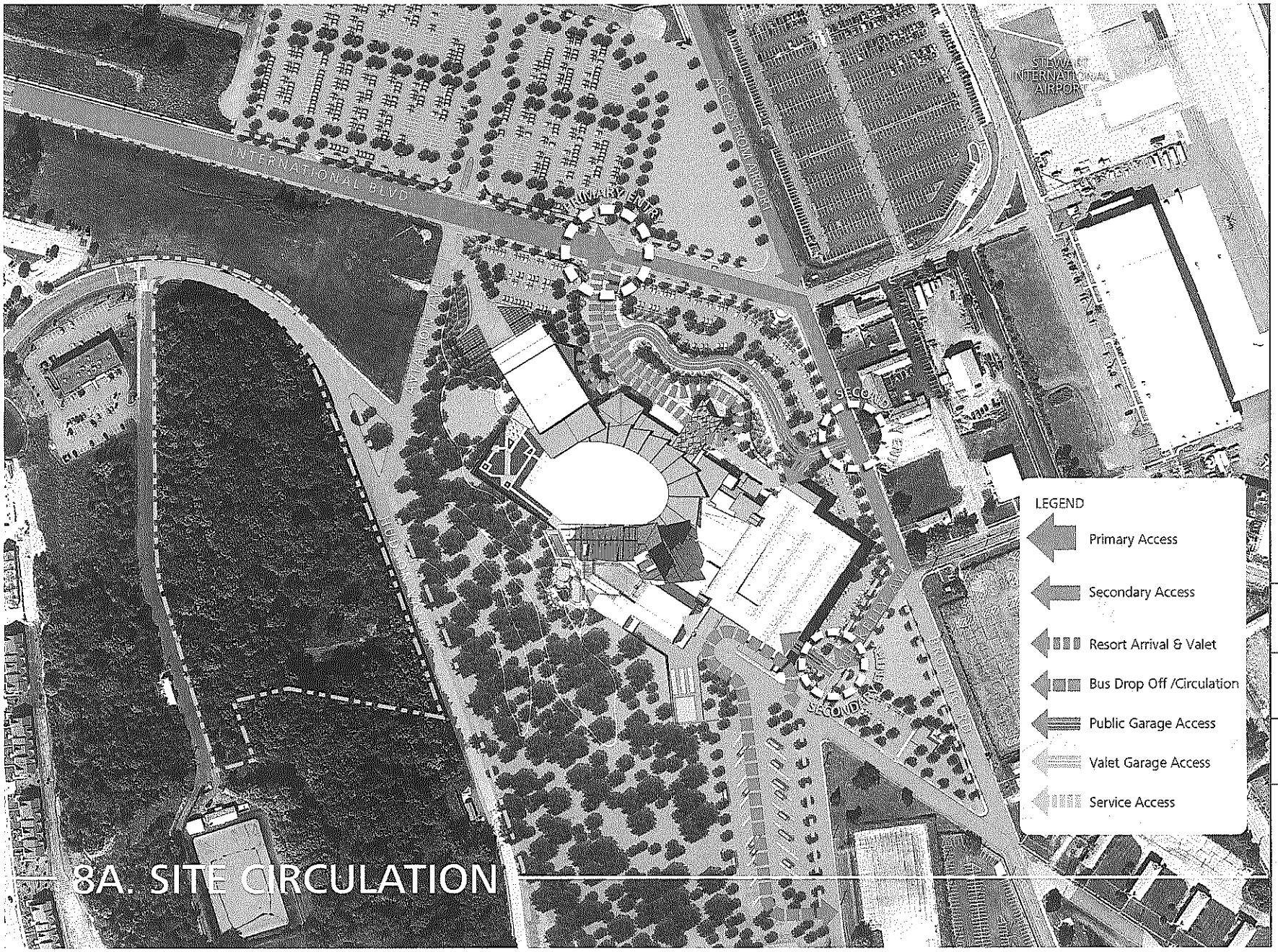
SHEET TITLE:
Parking Structure Floor Plans

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH
0 10' 20' 40' 80'
1" = 80'
at 11" x 17"

The Grand Hudson HOTEL & CASINO



8A. SITE CIRCULATION

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

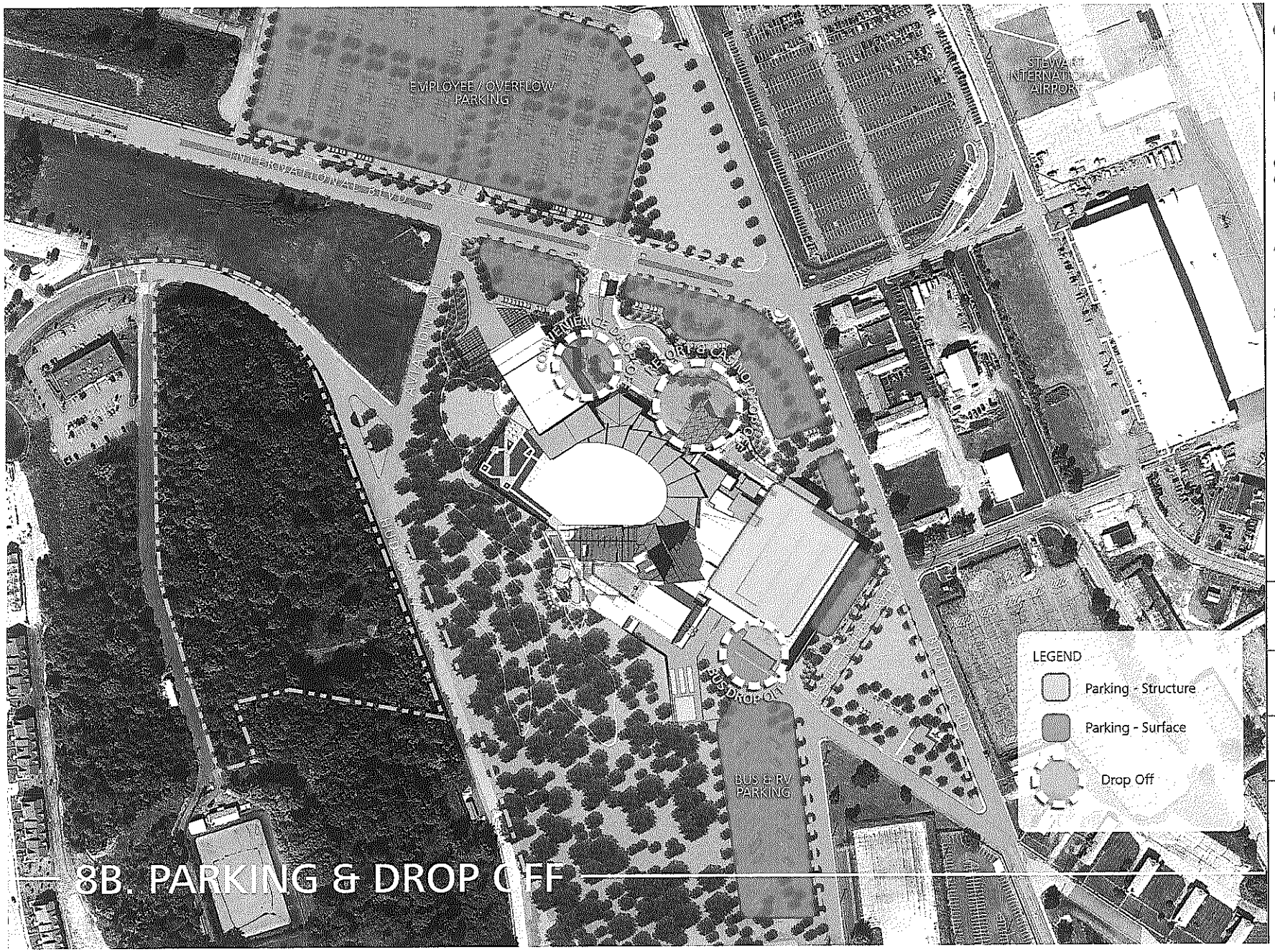
SHEET TITLE:
Site Plan

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH
0 50' 100' 200'
1"=200'
at 11" x 17"

The Grand Hudson HOTEL & CASINO



8B. PARKING & DROP OFF

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Site Plan

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH

0 50' 100' 200'
1" = 200' at 11" x 17"

The Grand Hudson HOTEL & CASINO

9A. VIEW FROM THE AIRPORT

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Arrival Rendering

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

The Grand Hudson
HOTEL & CASINO

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Arrival Rendering

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

The Grand Hudson HOTEL & CASINO

10. BIRD'S EYE VIEW

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Rendering at Night

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

The Grand Hudson HOTEL & CASINO

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Interior View of the Casino

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

The Grand Hudson HOTEL & CASINO

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Interior View of the Casino

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

The Grand Hudson HOTEL & CASINO

11C. TYPICAL GUEST ROOM

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

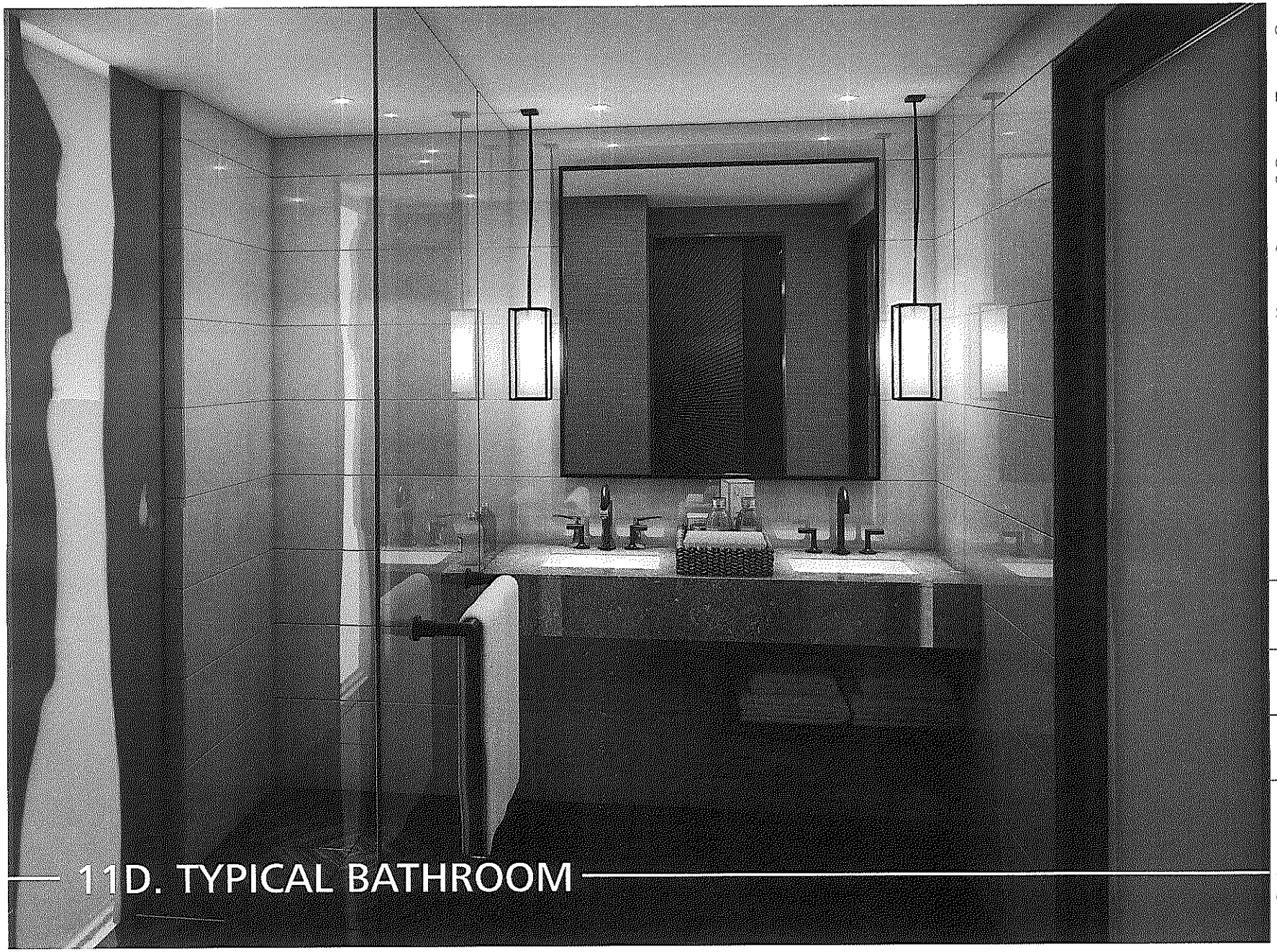
REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Interior View of the Casino

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

The Grand Hudson HOTEL & CASINO



11D. TYPICAL BATHROOM

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC Construction Consultants

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

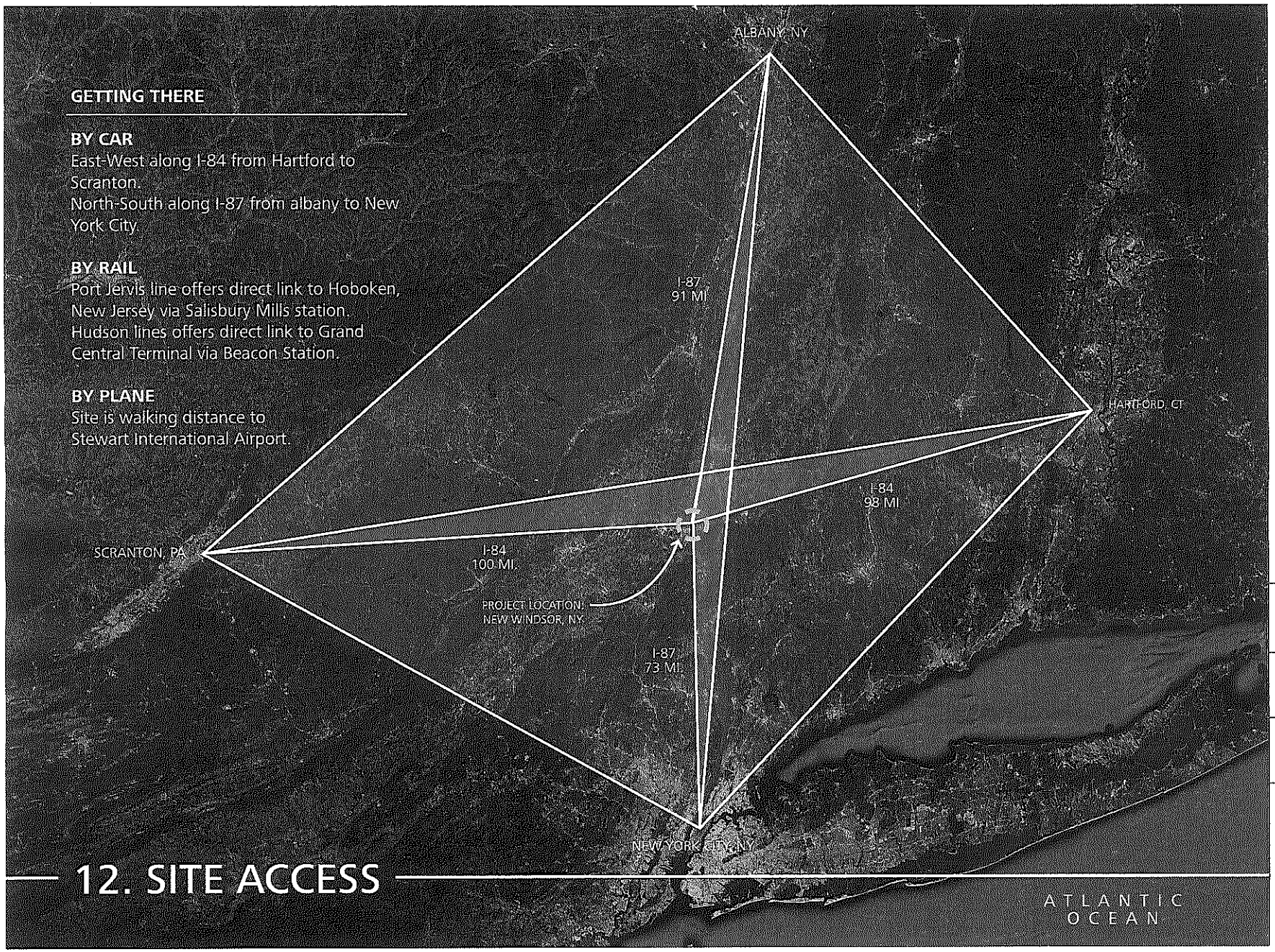
REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Interior View of the Casino

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

The Grand Hudson HOTEL & CASINO



GETTING THERE

BY CAR
East-West along I-84 from Hartford to Scranton.
North-South along I-87 from albany to New York City.

BY RAIL
Port Jervis line offers direct link to Hoboken, New Jersey via Salisbury Mills station.
Hudson lines offers direct link to Grand Central Terminal via Beacon Station.

BY PLANE
Site is walking distance to Stewart International Airport.

12. SITE ACCESS

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Regional Map

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH

NOT TO SCALE at 11" x 17"

The Grand Hudson HOTEL & CASINO

12. SITE ACCESS

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES, LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Vicinity Map

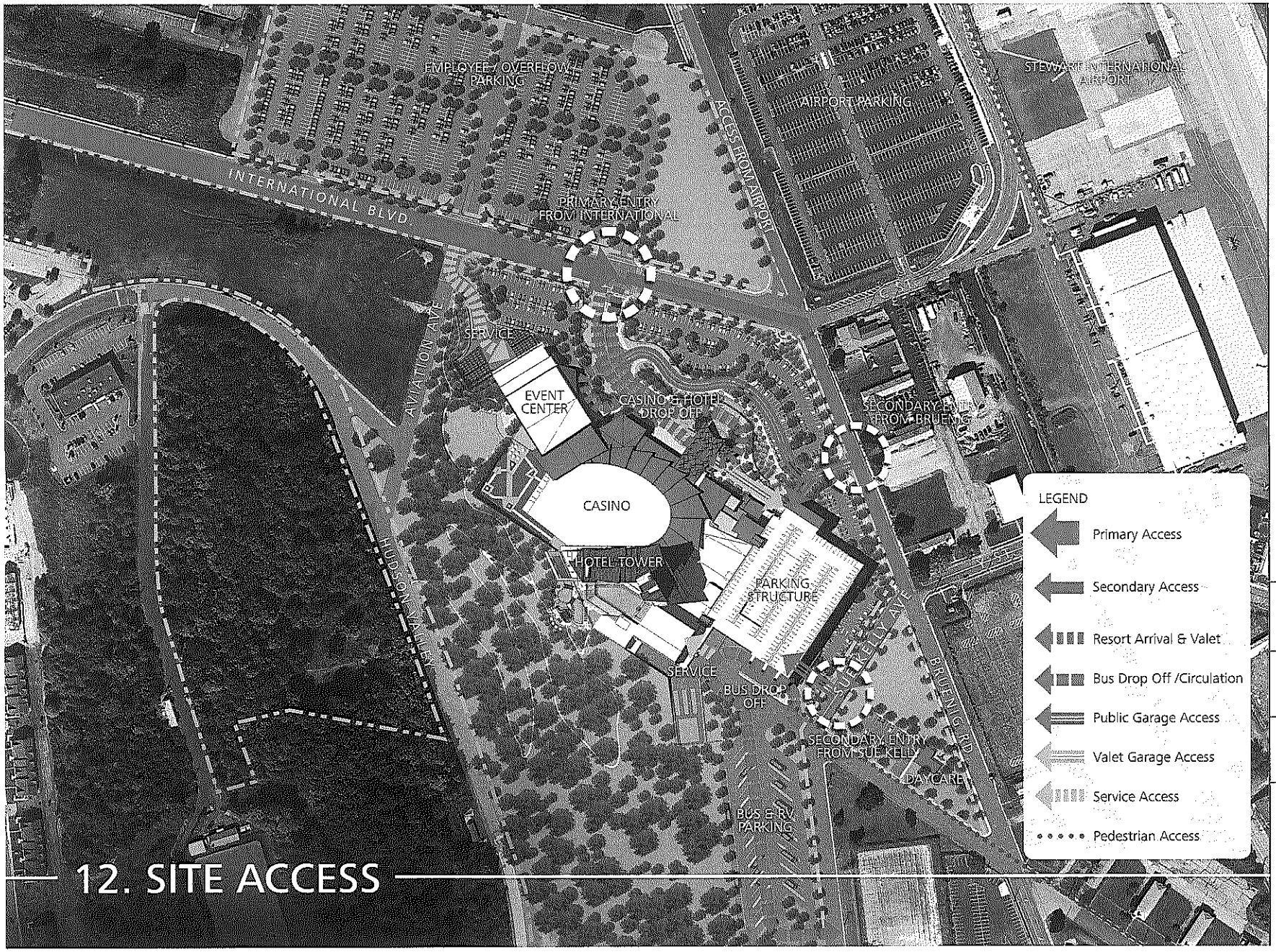
EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH

NOT TO SCALE at 11" x 17"

The Grand Hudson HOTEL & CASINO



12. SITE ACCESS

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
Project Site

EXHIBIT NO:
Exhibit VIII.C.5.a

DATE:
June 30, 2014

NORTH

0 50' 100' 200'
1" = 200'
at 11" x 17"

The Grand Hudson HOTEL & CASINO

PRELIMINARY PROJECT DESCRIPTION (PPD)

00 INTRODUCTORY INFORMATION

A. Project Name: The Wings Casino and Spa

B. Owner Name and Address:

Greenetrack

C. Civil/Site Engineer and Landscape Architect Name and Address:

Wendel
140 John James Audubon Parkway, Ste 201
Amherst, NY 14228716.688.0766

10 PROJECT DESCRIPTION

1010 PROJECT SUMMARY

A. Project: New casino resort, 350 room hotel, event/convention center, parking garage and associated amenities located on a 140 acre parcel adjacent to the Stewart International Airport in the Town of New Windsor, NY

B. Casino: includes the following amenities:

1. Gaming Floor with approximately 3,600 Gaming Positions, including High-Limit Gaming Area and 75 Table Game tables
2. Five Restaurants and Buffet and associated kitchens and food storage and prep spaces
3. Grab and go, coffee shop
4. Center Bar, including bar and bar seating, gaming, and lounge seating
5. Service Bar, including bar and self-service beverage station
6. Event / conference center
7. Retail Shops
8. Public Toilet facilities
9. Executive and Administrative offices, including security and surveillance, and associated system and operation areas
10. Employee Dining Room
11. Employee Uniform Issue
12. Employee changing rooms and toilet facilities
13. Warehouse and facilities offices and maintenance shop
14. 4-Lane wide Porte Cochere
15. Valet Parking Service / Loading Dock and associated dock offices

C. Parking Structure: 8 -Story parking structure accommodating approximately XXX vehicles (refer to architectural plans)

D. Central Plant Building (refer to MEP narrative)

E. Civil/Site /LA Improvements : Access drives, Perimeter roadways, bus parking / dropoff area, loading docks, parking lots, water, storm and sanitary sewer improvements, stormwater detention systems (below grade), landscape improvements .

1015 DESIGN SUMMARY

A. Architectural drawings are currently developed to a concept design level. Structural and MEP systems are described in narrative/report format at this stage of design

B. Civil Site and LA plans will be updated to include proposed above and below grade MEP improvements as additional details are provided by the Architect and MEPS Design team

END

ELEMENT G – BUILDING SITEWORK

G10 SITE PREPARATION

G1010 SITE CLEARING

A. Clearing and Grubbing:

1. Provide the site clear, clean, free of shrubs and trees, suitable for subsequent construction operations in accordance with the Site Preparation plans, specifications and the April 2014 Geotechnical Evaluation Report. Remove all debris, rubbish, and excess material.
2. Strip and stockpile topsoil suitable for reuse for proposed site grading.
3. Protect existing utilities to remain at all times during construction

G1020 SITE DEMOLITION AND RELOCATIONS

A. Site Elements Demolition:

1. Remove existing signs, buildings, structural steel, concrete pads, asphalt pavement, overhead electric/telephone/ cable lines, utility poles , sanitary, storm and water lines and other existing improvements as required for subsequent construction operations.
2. Relocation of existing public utilities as noted on the civil/site plans

G1030 SITE EARTHWORK

A. Grading:

1. The site shall be uniformly graded, including adjacent transition areas, with a smooth finished surface within specified tolerance.
2. Site grades shall be designed to maintain positive drainage away from the buildings at all times.
3. Site grades steeper than 3:1 shall be placed per the recommendations of a Geotechnical Engineer.

B. Excavating, Backfilling, and Compacting:

1. All excavating, backfilling and compaction throughout the project site shall be in accordance with the design plans, specifications and the April 2014 Geotechnical Evaluation Report prepared by Empire Geo-ServicesRegrade and Backfill any open excavations to bring site to subgrade elevation..

C. Erosion and Sediment Control:

1. Accepted best management practices shall be implemented during construction in accordance with the project Stormwater Pollution Prevention Plan (SWPPP), the New York State Standards and Specifications for Erosion and Sediment Control, and the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities (GP-0-10-001).

G20 SITE IMPROVEMENTS

G2010 ROADWAYS

A. Flexible Roadway Pavement:

1. All paving shall be in accordance with the design plans, specifications and the April 2014 Geotechnical Evaluation Report.
2. Vertical curves shall be designed whenever the algebraic difference between longitudinal grade exceeds 1%.
3. Access road grades shall not exceed 10%

B. Roadway Curbs and Gutters:

1. Concrete shall be designed with a minimum longitudinal slope of 0.3%.

G2020 PARKING LOTS

A. Flexible Parking Lot Pavement:

1. Paving shall be in accordance with the design plans, specificaitions and the April 2014 Geotechnical Evaluation Report.
2. Asphalt pavement shall be designed with a minimum cross slope of 1.0%.

B. Parking Lot Curbs and Gutters:

1. Concrete curb and gutter conveying stormwater shall be designed with a minimum longitudinal slope of 0.5%.

G2030 PEDESTRIAN PAVEMENT

A. Rigid Pedestrian Pavement:

1. Accessible routes shall be designed to maintain longitudinal and cross slopes that comply with A.D.A. requirements.

   Structures shall be in accordance with New Windsor Standard Details and Specifications.

G2040 OFFSITE IMPROVEMENTS

A. Signalized Intersections:

1. At the International Boulevard and Main Site Entrance, a new three phase traffic signal consisting of 4 mast arm signal poles, digital ground mounted signal controller and pedestrian countdown pedestrian signal displays on separate poles. All signal equipment shall conform to NYSDOT Standards.
2. Accessible routes shall be designed to maintain longitudinal and cross slopes that comply with A.D.A. requirements. Sidewalk width shall be a minimum of 5 ft. ADA compliant ramps and detectible warning strips shall be placed at all curb cuts. Structures shall be in accordance with MAG Standard Details and Specifications. All ADA sidewalks shall conform to NYSDOT Standards.

B. Pavement Resurfacing consisting of production profiling cold place milling to a depth of 2 inches and placement of surface course asphalt to a depth of 2 inches. All work shall conform to NYSDOT Standard Specifications for Materials and Construction.

C. Pavement Markings shall conform to MUTCD standards as revised by NYSDOT.

G2050 SITE DEVELOPMENT

A. Landscape Architecture Feature elements:

1. To be determined upon further consultation with WATG and Owner

B. Site Furnishings

1. To be determined upon further consultation with WATG and Owner

C. Landscape Retaining Walls

1. All retaining walls adjacent to steps and ramps are core filled CMU walls with steel reinforcing.
2. Veneer will be a 4" thick masonry limestone random rectangular, coursed in horizontal patterned stretcher courses

G2060 LANDSCAPING

A. Irrigation Systems

1. Will be a fully automatic irrigation system run from a central controller
   a. All turf areas shall be zoned separately from shrub / ground cover areas.
   b. No permanent stationary risers shall be used. All shrub and ground cover areas shall include 4", 6", or 12" pop-up heads, or drip equipment installed according to the manufacturer's requirements.
   c. No intentional spray across sidewalks or into streets is permitted. Minimize overspray onto sidewalks. No spray onto buildings is permitted.
   d. Zones and pipes are sized to provide a minimum operating pressure of 25 psi at all spray heads and 45 psi at all rotary heads. Flow velocity shall not exceed five feet per second.
   e. No "two-wire" control systems shall be allowed. All control systems shall include a separate control wire for each electric valve.
   f. No PVC pipe shall be installed above grade.
   g. Total watering time shall not exceed allowable water window for worst case drought restrictions per municipal regulations of governing authority for jurisdiction of project.
   h. Coordinate with landscape architect to determine the optimum water requirements based on ET for the site.

B. Shrub and Trees and Groundcover

C. Shade Trees: Specimen quality, Number 1 grade or higher, single-stem trees (unless otherwise noted on plans) with straight trunk, well-balanced crown, and intact leader, of height and caliper indicated, conforming to ANSI Z60.1 for type of trees required.

1. Branching Height: 1/3 to 1/2 of tree height.
2. Nursery Grown and Collected Stock:
   a. All material shall have been grown under climatic and soil conditions similar to those in locality of project.
   b. Container-grown stock in vigorous, healthy condition, not root-bound or with root system hardened off shall have grown in container from seedling.
   c. Containerized stock in vigorous, healthy condition, not root-bound or with root system hardened off shall have grown in container for a minimum of 8 months.
   d. Use only liner stock plant material which is well established in removable containers or formed homogeneous soil sections.
   e. All material shall be nursery grown unless otherwise called out on plans.
3. All balled and burlapped trees shall have firm, natural root balls or sufficient size to encompass the fibrous and feeding root system necessary for full recovery and establishment of the plant. Cracked or soft or "mushroomed" rootballs will be unacceptable. Ball size shall conform with the latest edition of the American Standard for Nursery Stock. B&B materials shall be firmly wrapped with 100% organic burlap.
4. Specimen Stock: When specified on the Plant List, specimen shall mean exceptionally fully developed, bushy, and heavily branched plants that have been grown individually in the nursery. They shall surpass the normal standard for nursery stock in their density and maturity, and shall form a symmetrical, tightly knit plant or picturesque characteristic if indicated.
5. Ornamental Trees: Specimen quality, Number 1 grade or higher, small upright or spreading type, branched or pruned naturally according to species and type, and with relationship of caliper, height, and branching recommended by ANSI Z60.1, and stem form as follows: Form: Multitrunk, with 3 – 5 canes. Minimum size per cane listed on plan list.
   1) Ornamental Trees: Specimen quality, Number 1 grade or higher, small upright or spreading type, branched or pruned naturally according to species and type, and with relationship of caliper, height, and branching recommended by ANSI Z60.1, and stem form
   2) Provide ground covers and plants established and well rooted in removable containers or integral peat pots and with not less than the minimum number and length of runners required by ANSI Z60.1. Assume pot size for all bedding plant areas to be 5 gal and spacing to be 30" o.c.

D. Soil Preparation

1. Topsoil Analysis: Furnish a soil analysis made by a qualified independent soil-testing agency stating percentages of organic matter, inorganic matter (silt, clay, and sand), deleterious material, pH, and mineral and plant-nutrient content of stockpiled topsoil.
2. Soil Amendments:
   a. Soil sulfur: Agricultural grade sulfur containing a minimum of 99% sulfur (expressed as elemental).
   b. Iron sulfate: 20% Iron (expressed as metallic iron), derived from ferric and ferrous sulfate, 10% sulfur (expressed as elemental).
   c. Gypsum: Agricultural grade product containing 98% minimum calcium sulfate.
   d. Pre-Emergent Herbicide: Surflan or approved equal (or other specified per section).

E. Fertilizer:

1. Fertilizer: Granular, percentages by weight, (Nitrogen, Phosphoric acid, Potash), mixed by a commercial fertilizer supplier. Fertilizers for lawns shall be slow release fertilizers.
   a. Planting beds and trees: 13-13-13

b. Hydro-mulched lawns: 15-15-15

c. Sod lawns: Bermuda: 16-20-8

2. Planting Tablets:

a. Shall be slow-released type with potential acidity of not more than 5% by weight containing the following percentages of nutrients by weight:

b. 20 % nitrogen

c. 10 % phosphoric acid

d. 5 % potash

e. 2.6% combined calcium

f. 1.6% combined sulfur

g. .35% iron (elemental from ferrous sulfate

h. Shall be 21 gram tablets as manufactured by Agriform or approved equal, applied per manufacturer's instructions

3. Import Topsoil: Contractor to supply high quality imported topsoil of loamy character, high in humus and organic content from local agricultural source. Topsoil to be reasonably free from clay lumps, coarse sands, stones, roots, and other foreign matter. There shall be no toxic amounts of acid or alkaline elements.

4. Import Backfill For Berms: Contractor to supply high quality, select imported backfill from local approved source (unless approved fill from Owner's stockpile is noted on drawings). Backfill to be reasonably free from clay lumps, coarse sands, stones, roots, and other foreign matter. There shall be no toxic amounts of acid or alkaline elements. Submit samples to Landscape Architect for approval.

F. Lawns and Grasses

1. Lawn Seed:

a. All seed used shall be high quality, extra fancy, treated lawn type seed at 98% purity and 85% germination, and shall be furnished in sealed standard containers with signed copies of a statement from the vendor certifying that each container of seed delivered is fully labeled in accordance with the State Agricultural Code and is equal to or better than the requirements of these specifications. Lawn seed to be free of weed or noxious grass seeds. Contractor shall supply seed to the site in original unopened bags.

b. Seed which has become wet, moldy or otherwise damaged in transit or storage will not be accepted.

c. Grass Seed Schedule:

April 15 - September 15 shall be Common Bermuda.

September 15 - April 15 shall be Annual Rye grass.

(Contractor shall include scalping of Rye and re-seed Common Bermuda when temperatures allow)

d. Hydro-Seeding Fiber Mulch:

1) "Hydro-Mulch" as manufactured by Conwed, or approval equal.

2) The Hydro-Mulch shall be composed of wood cellulose fiber and contain no germination or growth-inhibiting factors.

3) Hydro-Seeding Additive (Binder): Ecology 'Control-M-Binder' organic seeding additive.

G. Planting Accessories

1. Guying and Staking Materials:

a. Tree Stakes: 6'-0" ht. metal "T" stakes, dark green in color, approved by Landscape Architect.

b. Ties: 12 gauge galvanized wire with minimum 12" long black rubber hose to protect trunk and branches of tree.

c. Duckbill Tree Anchor Systems, model as recommended by manufacturer in accordance e with tree size (3) anchors, (3) 12' white vinyl coated cables, cable clamps and pliable rubber tree collars.

2. Tree Paint: Morrison Tree Seal, Cabort Tree Paint, or approved equal.

3. Water: Furnished by Owner; transport as required.

4. Mulch: The mulch shall be "Composted Bark Mulch" (CBM) consisting of shredded, composted hardwood bark of varied lengths. Mulch to be partially decomposed and shall be free of sticks, stones, clay or other foreign materials such that when installed will form a mat resistant to erosion. Locate in all bedding areas

5. Sand: Shall be evenly sorted, washed, clean, bank sand.

6. Steel Edging: 3/16" thick, 4" deep, heavy duty steel edging and stakes as manufactured by Joseph T. Ryerson and Son, Inc. Color: TBD.

7. Soil Filter Fabric: Mirafi 1405, install per manufacturer's recommendations

G30 SITE CIVIL/MECHANICAL UTILITIES

G3010 WATER SUPPLY

A. Site Domestic Water Distribution:

1. Minimum Design Criteria: Recommended Standards for Water Works, current edition, Town of New Windsor Water System Specifications, current edition and insurance underwriter requirements.

2. . .

3. Waterlines shall be a minimum 12 inch diameter DI CL52 pipe and have a minimum cover of 48 inches over the top of the pipe to finish grade. .

4. System design shall be in accordance with Standard Specifications for the Town of New Windsor and as required to support the proposed casino resort facility for domestic and fire flows.

5. Trench excavation, backfilling and compaction shall conform with Standard Specifications by the Town of New Windsor and the April 2014 Geotechnical Evaluation Report. The water system design shall be completed in accordance with the Town of New Windsor Water System requirements and casino operator underwriter requirements.

6. Waterline maintained by the Town of New Windsor must be placed within the public right of way or within an easement dedicated to the Town of New Windsor.

7. Backflow prevention and master meter shall be provided within 100 feet of the water service connection in a hot box per the Town of New Windsor , Orange County Health Department and NYS Department of Health standards.

8. Thrust restraint shall be provided in conformance with the Town of New Windsor Standard Specifications. Special protection shall be provided on the waterline per the Town of New Windsor Standard Specifications if the minimum separation cannot be provided between any water and sewer line.

9. Site service connections shall connect to the building service at a point 5 feet from building.

10. Waterline stubouts shall have a 2 inch brass ball corp stop as a blow- off with a 2 inch riser and shall be accessible.

11. All valves 16 inches and smaller shall be resilient seat gate valves and shall open by turning to the left.

12. Waterlines shall be installed in a manner that eliminates dips or high points, conforming with the manufacturer's recommendations for deflection at joints.

13. All waterline connections shall be designed with a tee connection, with the exception of water meter connection taps.

B. Site Fire Protection Water Distribution

1. System design shall be in accordance with Town of New Windsor Standard Specifications . and the Owner's insurance underwriter.

2. Fire hydrants shall conform to the minimum requirements of the Town of New Windsor Standards.

3. Fire flow shall be determined by the Plumbing / Fire Protection engineer and the Authority having Jurisdiction.

4. Fire Hydrants shall be located as required by the Town of New Windsor Fire Marshall on site and surrounding the site within the public right of ways.

5. No more than 2 fire hydrants shall be allowed between line valves.

6. A fire hydrant must be placed within 100 feet of each FDC.

G3020 SANITARY SEWER

A. Sanitary Sewage Collection:

1. Minimum Design Criteria: Recommended Standards for Wastewater Facilities.
2. System design shall be in accordance with Town of New Windsor Standard Details and Specifications, as amended by the Town
3. Trench excavation, backfilling and compaction shall conform with Town of New Windsor Standard Specifications, as amended by the Town and the April 2014 Geotechnical Evaluation Report.
4. PVC SDR-35 Gravity Sewer Pipe conforming with Town of New Windsor StandardSpecifications shall be used for sewer lines 8inches in diameter. An approved metallic locator tape shall be specified on all sewer services.
5. Sewer line maintained by the Town of New Windsor must be placed within the public Right of Way or within a utility easement.
6. Sewer pipe PVC SDR-35 to have a minimum 4 feet of cover from top of pavement.
7. Maintain 10 feet horizontal clear separation from public water as specified by 10 State Standards.
8. Maintain 18 inches vertical separation at water main crossings.
9. Service connections shall have 5 feet separation along the mainline.
10. Design drop through in-line public manholes as required by Town of New Windsor standards..
11. Pipe junctions shall be designed to allow crown lines to be matched.
12. Four foot diameter manholes shall be used with mainlines up to 15 inches and mainline depths of less than 10 feet.
13. All PVC sewer manhole connections shall have an approved water stop.
14. Manhole lids shall be adjusted to the finish grade upon the completion of pavement work.
15. Manholes shall be spaced no more than 400 feet on center.
16. Cleanouts shall be spaced no more than 100 feet on center.
17. Site service connections shall connect to the building service at a point 5 feet from building.
18. Service line connections to the sewer main shall have a "Y" fitting. Saddles are not acceptable

G3030 STORM SEWER

A. Storm Water Collection:

1. Onsite collection and conveyance design shall be designed based on the Rational Method and will use the New Windsor, NY IDF curve information and in conformance with Town of New Windsor and NYSDEC standards, as amended.
2. Storm drain piping materials shall be HDPE, perforated HDPE piping as shown on the plans.

   HDPE pipe to have minimum cover commensurate with manufacturers recommendations, typically 1.0-ft from bottom of flexible pavement and 1.5-ft from top of rigid pavement.

B. Storm Water Equipment

1. All structures, catch basins, manholes, shall be in accordance with Town of New Windsor Standard Details and Specifications.

C. Storm Water Management

1. Since the area of disturbance is greater than 1-acre and since runoff is to be conveyed directly to waters of the State, the Project will require coverage under the SPDES General Permit for Stormwater Runoff from Construction Activity (GP-0-10-001) and shall comply with the requirements of the New York State Stormwater Management Design Manual (SMDM) .
2. Stormwater management will be accomplished as detailed on the design plans and specifications in accordance with the NYS SMDM. A Notice of Intent (NOI) for the project will be required prior to start of construction.
3. Quantity control will be required by permit for this site as runoff is directly discharged to a tidal water or fifth order or larger stream.. Detention systems must provide sufficient storage and control to attenuate the post development 1-year, 10-year, and 100-year 24-hr peak discharge rates to predevelopment1-year, 10-year, and 100-year 24-hr peak discharge rates. To meet these requirements, detention is proposed in one location. The location is in the parking lot Northeast of the porte cochere. Storage in HDPE, pipe (ADS or equivalent), chambers or vaults with a volume equivalent to 140,000 cubic feet between elevation 415 and 420 will provide the stormwater detention. Storage volumes will decrease if rainwater harvesting systems or green roofs are used as part of the development.
4. Water Quality (WQv) treatment must be provided onsite. Redevelopment guidelines from the SMDM will apply. Approximately three (3) hydrodynamic units (Vortechs 16000 (2) & Vortechs 9000 or equivalent) could meet this WQv requirement.
5. Runoff Reduction (RRv) requirements will not apply to this site as project is considered Redevelopment as confirmed by the Town of New Windsor Engineering Dept.

END

Exhibit VIII.C.5.b Narrative Description of the Basis of the Overall Architectural and Building Plan, any Unique or Defining Exterior and Interior Themes or Characteristics and Prevailing Style

Architectural Character

The Grand Hudson Resort and Casino, in New Windsor, New York, is positioned in an ideal location and intends to be a link. The term link can mean many things. It can be a link between cities, a link to history, and a link to the community.

Located at the crossing of two major Thruways, the I-87 & I-84, the Grand Hudson links the towns that are touched by these road systems: New York City to Albany and Scranton, PA to Danbury, CT. This concept is illustrated in Exhibit VIII.C.5.a, item 12. The positioning of this site makes it easily accessible by car to escape the bustle of the inner city.

The Hudson River itself is one of the great links in the history of the United States. When the Erie Canal was built, the Hudson became the industrial point of connection between the Atlantic Ocean and the Great Lakes, allowing civilization to expand westward. Even before that time, the region, which is part of the Great Valley between the Appalachian Mountains and the Adirondacks, was known as the Great Wagon Road, linking North and South.

The link to the project is reinforced by its adjacency to the Stewart International Airport located directly across the street. This full service airport serves as a modern day link for air travelers coming from neighboring regional locations. Furthermore, the "Link" message expands to encompass the essence of the project and its interaction with the community. The project links people living in the surrounding communities with jobs and opportunities. This, in turn, links Orange County and the Catskills region back to the economic success of its past and restores its status as a recreational destination.

The architectural style takes cues from the mountain lodge architecture of the Catskills region, but with a transitional interpretation using contemporary detailing and finishes. The project is nestled into the hillside allowing for public gathering areas that interact with the natural surroundings. This emphasizes the central concept of linking the built environment with nature. There will be numerous sustainable measures planned for the project to the same aim, including a mix of green and occupied rooftop spaces and clerestory day lighting over the perimeter of the casino.

Programmatic Decisions

For guests arriving by car, chauffeur or shuttle, the primary point of entry would be through the main porte cochere on axis with Stewart International Airport. Returning guests familiar with the property enter directly from the adjacent parking structure levels, though one of two access points. For guests arriving via group transportation, arrival through a separate bus drop-off is located on the south side of the facility. These guests will have access to public elevators and escalators taking them directly to the casino level. Along the main central access from the parking structure, and visible from the main entry of the casino, is the hotel lobby. The hotel lobby is convenient for ease of access for all arriving guests. For convenience, the guests' travel baggage can be received at the lobby and then be taken by the bellman to the guestrooms. Guests will have access to the entire resort and amenities.

The project's floor plans were developed to activate the casino space by promoting the passage of visitors around or through the casino floor. Aligning the primary circulation that surrounds the casino floor are several restaurants, retail, and entertainment amenities.

The main restaurant area, including five (5) separate dining experiences, is located adjacent to the hotel lobby and has direct access to the parking structure. Several restaurants have exterior facing walls allowing natural light and ambiance into the venues.

With direct access from the casino area, an exclusive steakhouse restaurant is situated above the casino floor and allows views to the exterior. This specialty dining venue offers outdoor terrace dining during warmer months and seclusion from the casino below.

Several programmatic components have been located opposite the parking and main entry to draw people across the casino space. A jazz club is located at the farthest corner of the gaming floor, partially open to the casino floor. With a bar top that forms the wall between these two spaces, guests can play video poker while watching performances within the space. This adds a layer of activity and interest from different vantage points throughout the casino floor. The jazz club sits adjacent to the poker room and the event center, which further activates the circulation throughout the property. All arriving guests coming to either venue would cross the casino floor from the various entry points.

The event center and hotel conference center are located at a level above the casino floor. This creates additional dispersal of guest circulation through and around the casino once the events conclude.

A Superior Experience

The interior of the casino is designed to create an easily navigable entertainment experience. With a center bar providing energy focus and the outlying restaurants providing a well-appointed food and beverage experience our guests will experience an entertainment experience second to none.

Overall access to the facility will be seamless with simple ingress and egress directly off of Interstate's I-87 and I-84.

The casino property will feature 3,000 of the newest and most popular slot machines including video poker and a wide array of other themes and titles. The property will also feature 70-100 of the most popular live table games including blackjack, craps, roulette, and a wide array of other games that will allow guests to choose their particular game they enjoy playing. Along with the live table games the casino property will also house a poker room that will give guests an additional choice to entertain themselves.

On top of the slots and live table games the casino property will be a high energy atmosphere, complete with an outstanding food and beverage offering. Our property will not be just a large warehouse containing rows and rows of slot machines and table games, but will be a very nicely appointed facility where guests will come to enjoy the entertainment value of the property. Our goal will be to create that superior experience thereby allowing our guests to be very comfortable.

Exhibit VIII.C.5.c Description of the Types of Materials, Finishes and Furnishings that are Proposed and How those Complement or Interrelate with the Chosen Style or Theme

Architectural Materials

The building materials utilized for the project are:

- A panelized pre-cast system, with integral cream color, will be used on many facets of the hotel tower and podium
- Inspired by the abundance of stone site walls around New Windsor, the base of the casino resort will be emphasized by the use of a local stone to give it warmth and character
- The exterior façade of the hotel tower will utilize metal panels in a champagne pearl color
- Throughout the project, double glazed, low-E vision glass with light reflectivity and a warm blue-gray tint will be utilized throughout the building facades
- French gray spandrel glazing will be expressed at the interstitial areas to accent the sense of depth
- Pre-finished aluminum mullions and handrails in a dark bronze color to blend with the glazing colors
- A standing seam metal roof in a light to medium bronze color will be utilized

The selected materials are proposed to create a warm and inviting character and to represent a modern day lodge aesthetic. With the use of the exterior metal panels and large expanse of glazing at the hotel tower, casino level, and the event center the materials will appear crisp and vibrant against the backdrop of warm cream color, the local stone and the natural hillside of varying seasonal color. The expressive use of the bronze metallic finish and the perceived structural "rib" design elements at the roof, boasts a modern design aesthetic while keeping the warm brown tones to reflect a traditional design reference to wood.

Landscape Materials

Refer to Exhibit VIII.C.5.a.5 for a discussion of landscaping materials.

Interior Materials

A description of the types of materials, finishes and furnishings that are proposed and how those compliment or interrelate with the chosen style or theme.

The design inspiration draws from the natural surroundings of the property. With a modern steel and glass structure, we felt that the interiors should feel warm and cozy and evoke a real sense of a luxury lodge. Through the use of Douglas Fir beams, oxidized metals and raw live-edge woods, earth-toned natural stones, and tactile textiles in leathers and chenille, the interior environment draws guests in and encourages them to stay and play. Attention to detail and luxurious elements add delicate ornamentation to the grand interior architecture with hand blown glass lighting and carpet patterns inspired by a lush North American forest. All together, the materials, details and minimally patterned accents provide a bespoke, hand crafted feel to the interiors that make the large spaces feel intimate.

The interior materials utilized for the project are:

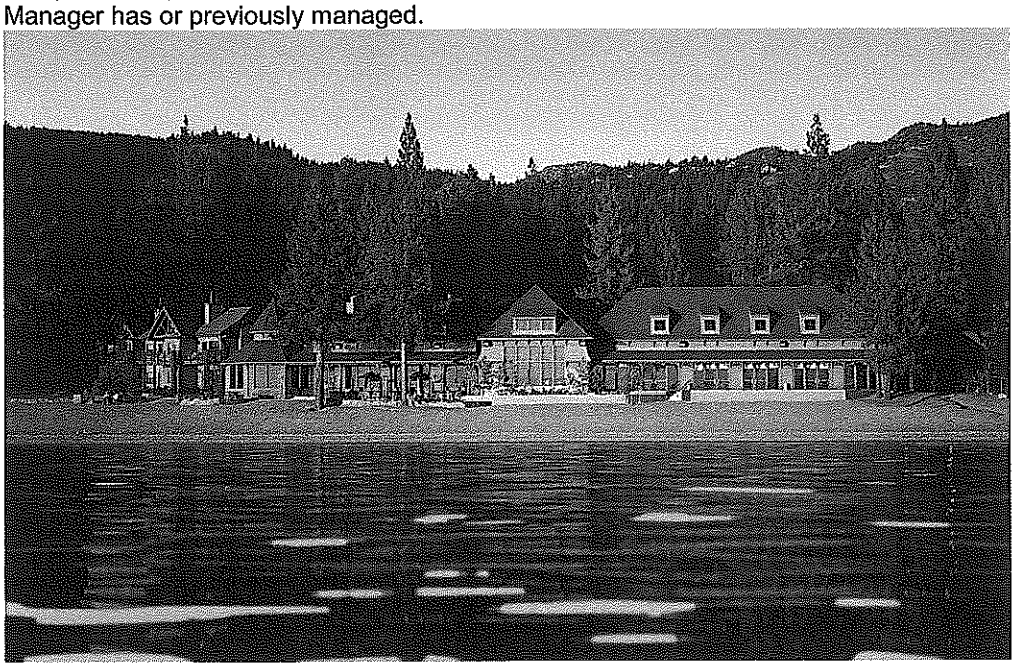
- Decorative Wood Beams: Glu Lam Douglas fir to complement the Grand Lodge scheme of the interior.
- Exotic wood veneers
- Blackened steel accents, lit bronze metal sections
- Oxidized metals, distressed wood pieces

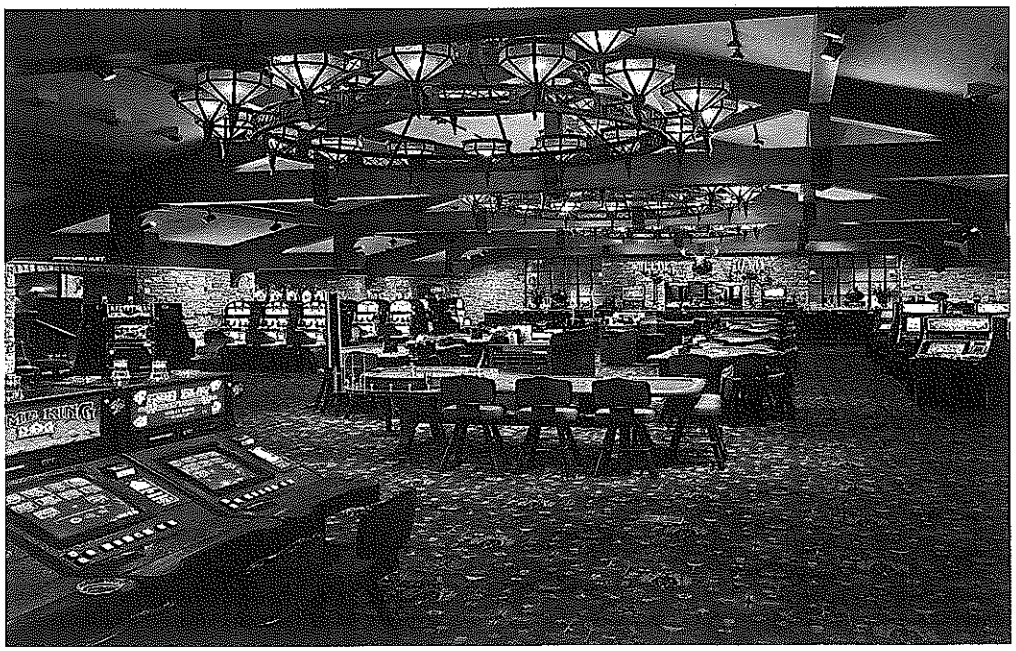
Exhibit VIII.C.5.c Architectural Materials

- Raw-edge natural wood
- Earth-colored natural stone pieces
- Natural leather furnishings with wood and metal: provides accents to the bespoke, handcrafted feel of the place.
- Carpet: Nature-inspired patterns evoking the flora and fauna of the lush North American forest.
- Hand-blown glass pieces at lighting fixtures
- Glowing amber light fixtures: adds a delicate ornamentation to the grand architecture of the interiors.
- Fire-place feature: adds an intimate feel to the Grandness of the place.

Exhibit VIII.C.5.d Submit interior and exterior photos or descriptions of analogous resort gaming facility projects in other jurisdictions, either of the Applicant or, if applicable, the Manager, or, if the Applicant or, if applicable, the Manager have few or no such analogous projects, of other operators of destination resort gaming facilities.

The photos depicted below are just a few of the interior and exterior photos of gaming projects the Manager has or previously managed.





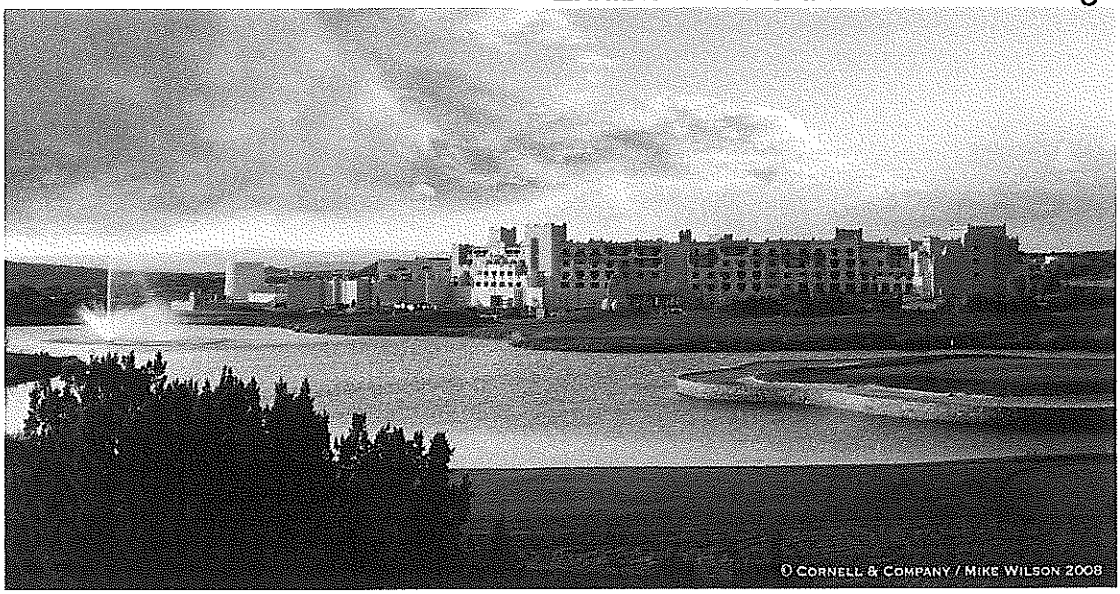
Grand Lodge in Incline Village, Nevada

FireKeepers Casino in Battle Creek, Michigan

Pavilion at the Rising Sun, Indiana

Silver Slipper in Bay St. Louis, Mississippi

Exhibit VIII.C.5.d Photos of Analogous Resorts



Buffalo Thunder Resort in Santa Fe, New Mexico

Exhibit VIII.C.6.a Description of the proposed gaming area (or areas, if more than one is being considered. The description should include, but not be limited to, the following:

See Attached schematic reflecting the Casino Design and Lay-out.

1. Square footage of each sub-area is indicated in the attached schematic.

2. Total number of planned table games, with a breakdown by game type and number of positions for each table.

   The Applicant current plans call for 100 live table games consisting of a variety of titles including, but not limited to the following game types:

   Blackjack
   Blackjack with variations
   Three Card Poker
   Lucky Ladies
   Four Card Poker
   Let it Ride
   Pai Gow
   Variety of other versions of Blackjack
   Mini-Baccarat
   Baccarat
   Roulette
   Craps

   The majority of the live table games have seven (7) positions with the exception of roulette, Baccarat and craps that have ten (10), eight (8) and ten (10), respectively.

3. The Applicant's current plans include 3,000 slot machines from various manufacturers in a multitude of titles.

4. The Applicant is also considering electronic versions of roulette and some blackjack games; however, at this point in the development the ultimate make-up of the table games, both live and electronic, is not determinable.

5. As noted in the attached schematic the Applicant anticipates a "High Limit" room that will contain sixty (60) to seventy (70) slot machines and various other live table games including Roulette, Blackjack and Baccarat. The Applicant's plans also include a poker room for 30 poker tables. The High Limit room will also have a small full service bar with video poker machines.

6. As noted in the attached schematic the cage will house nine (9) windows, three (3) of which will be dedicated to the High Limit Room. Of the six (6) windows not dedicated to the High Limit room one (1) will be dedicated as an employee window.

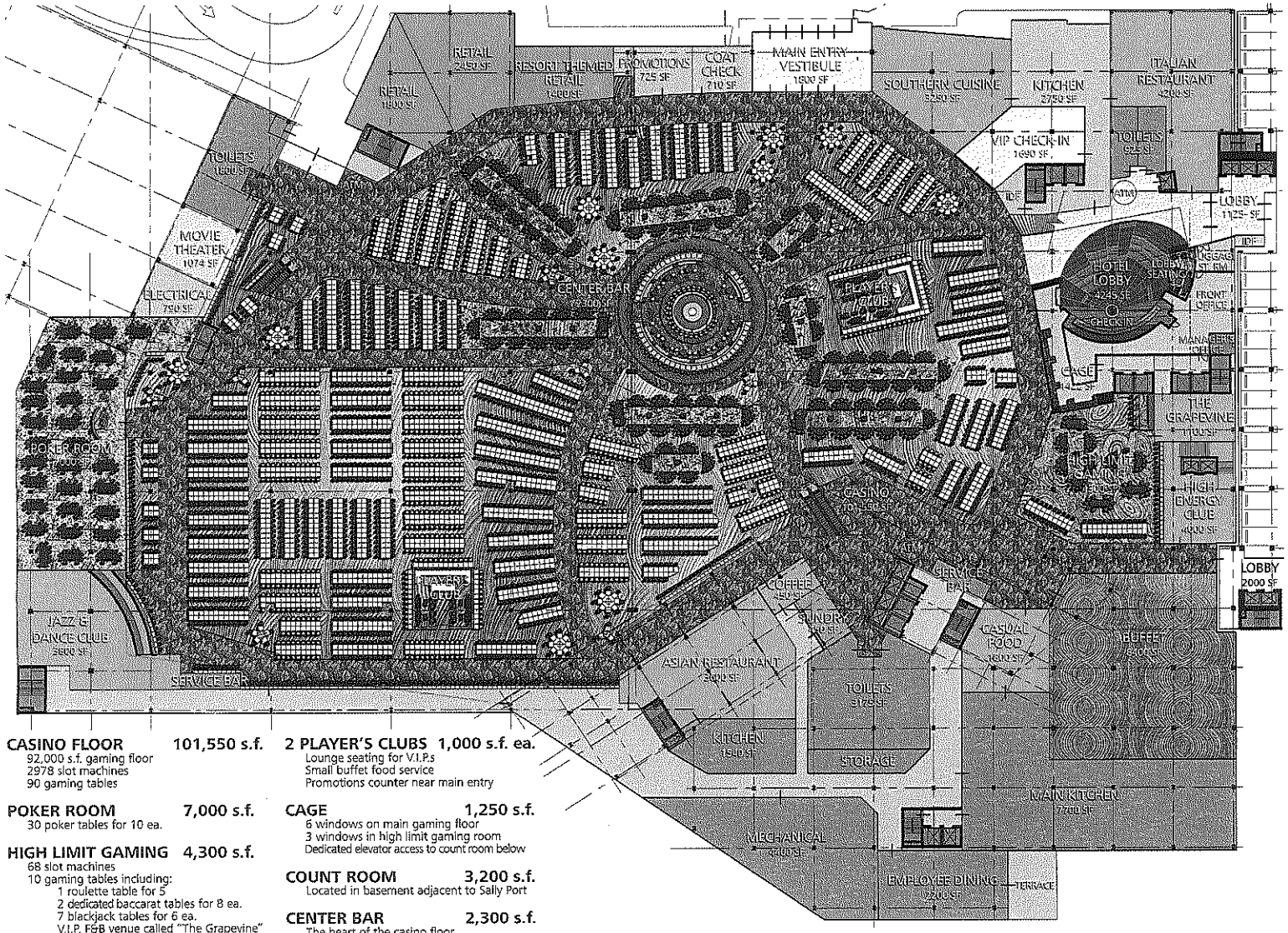
7. The count room will be located in the basement of the facility and will be adjacent to the sally port and directly below the cage. There will be a dedicated elevator servicing the count room.

8. The main Player's Club, or promotions center will be located at the front of the casino floor just inside the entrance. The Player's Club will have three (3) to Four (4) windows. The Applicant is also currently considering two Player's Club areas in the middle of the casino floor that will have some lounge seating a small food set-up.

The property will also contain "The Grapevine" that is directly accessible from the High Limit room and will be a full service food and beverage venue for VIPs.

9. The Center Bar is the main interior focal point of the casino floor and is intended to create the energy for the casino. This Center Bar will contain twenty (20) to thirty (30) video poker machines and will also have comfortable interior seating. In the back corner next to the Poker Room will be the Jazz Club that will have high energy entertainment and also a full service bar with video poker machines.

10. Current plans are open the entire facility within twenty-four (24) months of the awarding of the casino license.



CASINO FLOOR 101,550 s.f.
92,000 s.f. gaming floor
2978 slot machines
90 gaming tables

POKER ROOM 7,000 s.f.
30 poker tables for 10 ea.

HIGH LIMIT GAMING 4,300 s.f.
68 slot machines
10 gaming tables including:
1 roulette table for 5
2 dedicated baccarat tables for 8 ea.
7 blackjack tables for 6 ea.
V.I.P. F&B venue called "The Grapevine"
Full service bar with video poker

2 PLAYER'S CLUBS 1,000 s.f. ea.
Lounge seating for V.I.P.s
Small buffet food service
Promotions counter near main entry

CAGE 1,250 s.f.
6 windows on main gaming floor
3 windows in high limit gaming room
Dedicated elevator access to count room below

COUNT ROOM 3,200 s.f.
Located in basement adjacent to Sally Port

CENTER BAR 2,300 s.f.
The heart of the casino floor
28 video poker machines

CASINO PLAN

OWNER:

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:

Enlarged Casino Plan

Exhibit VIII.C.6.a

NORTH

0 10' 25' 50'
1" = 50'
at 11" x 17"

The Grand Hudson HOTEL & CASINO

Exhibit VIII.C.6.b Description of any plans for special high limit or VIP programs and amenities, including areas such as club member lounges, dining areas, restrooms, or VIP hotel check-in area(s)

Rationale

Premium level players understand the value of their worth to casinos. They have been catered to since the earliest days of gaming in Nevada and Atlantic City. Psychographically, they are comprised of Recognition Seekers and Escapists. The former demands high levels of service and attention. The latter require discretion. Both are motivated by the suite of benefits that the casino will bestow upon them, from luxurious accommodations, transportation, and high-stakes tournaments.

Strategies

- Establish a host program that can identify new premium players as they appear on the gaming floor
- Establish a player development department whose task is to identify new premium level gamers
- Open regional offices and maintain an ongoing presence in key feeder markets
- Create a suite of amenities that appeal to this segment
- Once identified, foster relationships with these players in order to encourage repeat visitation and loyalty to the Grand Hudson brand
- Provide a variety of perks including limousine service, air transportation, ultra-high end gaming tournaments and other special events

Proposed Amenities

- The casino facility has a multitude of VIP/Premium player amenities beginning with a VIP hotel check-in lobby separate and distinct from the main hotel check-in. This area will provide specialized VIP check-in and will contain the normal accoutrements that VIP's are accustomed to, including a small beverage center as well as other snack items
- Once inside the casino VIP's will find two separate and distinct players' lounges on the casino floor that will contain a small buffet and have comfortable seating that will allow VIPs to sit down and relax for a time
- The casino facility will also contain a High Limit gaming area that will cater to the high limit player as well as VIPs. This High Limit gaming area has direct access to the Grapevine, a VIP food and beverage venue
- The buffet will also contain a "VIP/complimentary" line so VIP's will not have to wait in line to enjoy the buffet

Exhibit VIII.C.6.c Description of any particular efforts (e.g., design, operations, and/or marketing) that are planned to differentiate the casino from competitors and to maximize the potential of the market

The following excerpt was taken from Exhibit VIII.B.9.b

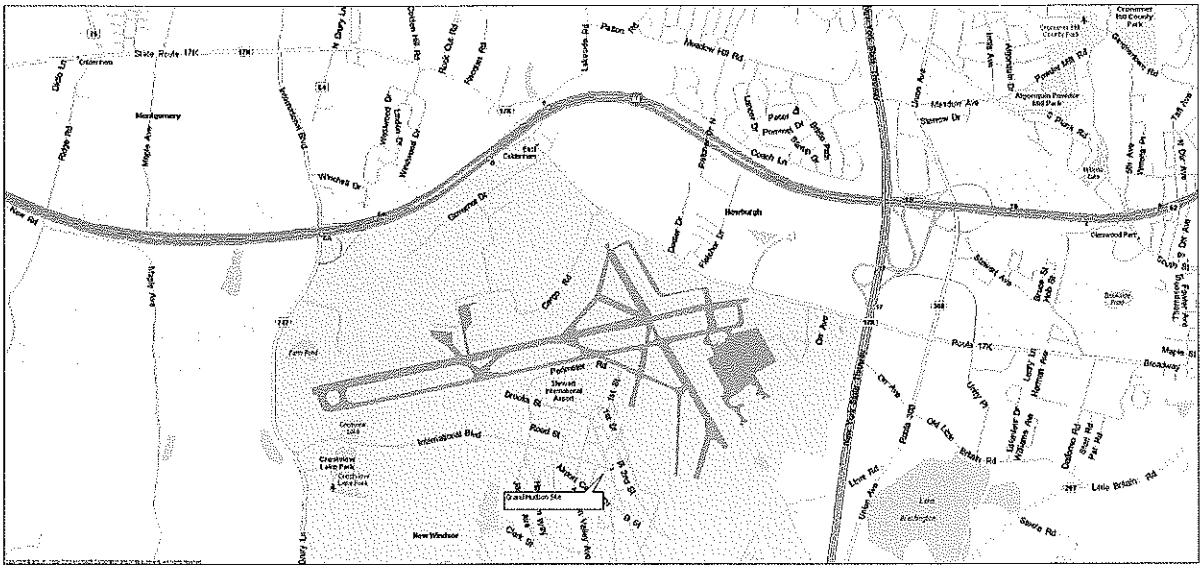
Project Vision

The Grand Hudson is envisioned to be a resort that is reflective of the culture, cuisines and heritage of the Hudson Valley. First and foremost the project is a casino-resort, designed to provide gaming entertainment along with a wide array of dining and entertainment options to visitors of the Hudson Valley and the Catskills.

While its intent is to be a must-see attraction that attracts regional, national and international tourism, the Grand Hudson is first and foremost a community-oriented project, providing outstanding career opportunities across a broad spectrum of industries including hospitality, gaming, retail, engineering, life safety and environmental sciences. It is a project that is designed to enhance the economic vitality of the surrounding region by creating jobs, attracting tourism, promoting green technologies, providing tax dollars for community needs and enhancing the region's economy.

Location

The Grand Hudson will be located on a 140 acre land parcel directly opposite Stewart International Airport at the intersection of International Boulevard and Breunig Road in the town of New Windsor, NY. The Project is easily accessible via International Boulevard, a four lane arterial roadway that connects to Interstate 84, which in turn connects to the New York State Thruway (Interstate 87), five miles to the east. Interstate 84 links Scranton, PA to the west with Waterbury, CT to the east. Interstate 87 runs from New York City to Albany and north to the Canadian border.



The site offers a number of advantages. Built to connect the airport to Interstate 84, International Boulevard is a fully improved arterial roadway that today remains under-utilized. As such, the casino-resort will offer excellent access with minimal impact on the surrounding community.

The intersection of two major interstate highways further enhances the Project's effective catchment area to a far broader region than other potential locations.

The land parcel offers sufficient acreage for the development of the Project along with capacity to accommodate future phases. The proximity of the Project to Stewart Airport allows the Project to act as a catalyst for business and economic growth by providing a full-service hotel, conference center and other business amenities. The casino will further stimulate airlift into Stewart International Airport by increasing demand for flights from other regional markets.

Project Description

The Grand Hudson Resort and Casino will be a four-star resort, providing guests with an unpretentious but luxurious resort experience. The architectural style will take cues from the mountain lodge architecture of the Catskills region, but with a transitional interpretation using contemporary detailing and finishes.

The Project is nestled into the hillside allowing for public gathering areas that interact with the natural surroundings. This emphasizes the central concept of linking the built environment with nature. Numerous sustainable measures are planned for the project to the same aim, including a mix of green and occupied rooftop spaces and clerestory day lighting over the perimeter of the casino. Project components are as follows.

Casino

The 101,550 square foot single-level casino will occupy the main floor of the Project

- Main Gaming Floor
  - 3,000 electronic gaming devices
  - 100 table games
- VIP Gaming Room
- Premium Players' Lounge
- Poker Room
  - 30 tables

Hotel

- 295 king and double-double rooms
  - 420 sq. ft.
  - 4-fixture bah
- 40 junior suites
  - 630 sq. ft.
- 10 standard suites
  - 840 sq. ft.
  - Separate living room
- 5 penthouse suites
  - 1,250 sq. ft.
  - Balconies and terraces
- Indoor pool
- Outdoor pool
- Full-service spa
- Fitness center
- Business center

Conference Center

- 7,200 square foot ballroom, divisible into two 3,500 spaces
- Three 1,000 square foot meeting rooms, each capable of accommodating 40 people in a classroom format

Dining
- Hudson Valley Buffet: 3-meal service
- Mulberry & Grand: mid-scale Italian
- Lucky Noodle: mid-scale Asian
- Grand Hudson Steak and Seafood : 5-star dinner house
- Grab & Go: 24-hours quick-serve
- Beans: Coffee, pastries, ice cream and smoothies
- VIP Lounge : private taps bar for premium players

Entertainment
- The Center Bar: casino bar and lounge
- Jazz Lounge: jazz and dance club
- The Club: 2-story nightclub
- Events Center: 800-seat concert venue
- Ultra Movie Theater: VIP Theater

Retail
- Hotel Lobby shop
- General Store featuring lottery tickets and sundries, snacks and beverages
- Accessories & Jewelry
- Hudson Valley Wines and Local Artisan Merchandise
- Women's Apparel

SWOT Analysis

Strengths
- Excellent access to the region's interstate highway system
- Four-lane arterial roadway links the Project to Interstate 84
- Location directly across from Stewart International Airport
- Experienced casino operator
- Strong community support
- Tremendous positive economic impact on the region and the state
- A location that complements rather than competes with a casino development in the Catskills
- A Project that will serve markets that are different than convenience-based racinos
- Project will have minimal impact on local traffic

Weaknesses
- No golf course; however, the Grand Hudson has approached a few golf courses in the area to develop relationships that will allow the casino to participate with the local golf course owners
- New market entrant requires building awareness among gamers living in the region
- 350 hotel rooms will be insufficient to meet weekend demand

Opportunities
- Grand Hudson has the opportunity to steal a substantial portion of the overnight gaming market that currently goes to Foxwoods and Mohegan Sun
- Grand Hudson's direct access to Scranton allows it to take a substantial portion of the day-trip gaming market that currently visits the casinos in the Poconos
- The casino's location will allow it to better serve the Asian market that currently gambles at Sands Bethlehem
- Proximity to airport will allow resort to stimulate airlift into market
- Conference center will stimulate mid-week visitation into the region

Threats

- Foxwoods and Mohegan Sun will aggressively price their room products in order to maintain market share and exert pricing pressure on the Grand Hudson
- Foxwoods and Mohegan Sun will increase their level of player reinvestment, increasing competition for value seeking gamers
- The casinos in Pennsylvania will increase the amount of free play that they send to their customers

Exhibit VIII.C.6.d Description of the attributes of the slot accounting system that is planned for Applicant's operation, which allows the Gaming Commission access for the purposes of auditing revenues and game status

The Applicant has not yet determined which slot accounting system it will utilize at the Grand Hudson Resort and Casino; however, most, if not all slot accounting systems provide for the typical information Gaming Commissions currently have access to including the following:

- Manufacturer
- Game Description including denomination
- Serial Number
- Game Software
- Date on floor
- Date off floor
- Device Location
- Financial data including:
  - Coin-in
  - TITO and other promotional
  - Coin out
  - Bill Drop
  - Win
  - Jackpots
  - Win %
- Hard and Soft Meters

The above are a few of the attributes, but it is not a 100% complete listing.

Exhibit VIII.C.6.e Submit any details of casino operation that the Applicant believes should be included in the evaluation of its operation.

The overall success and operation of a casino is not dependent on just one single amenity. It is the combination of a multitude of amenities all working together as a cohesive operation. Each and every piece of the entire casino is important to achieve the ultimate goal. Refer to the Grand Hudson Resort and Casino Business Plan (Exhibit VIII.A.5) as well as the Market/Revenue Study (Exhibit VIII. A.3) for a more thorough discussion.

Exhibit VIII.C.7.a Proposed Hotel Description including the types of rooms, the numbers and proposed square footage of each type of room at full build- out and for each phase

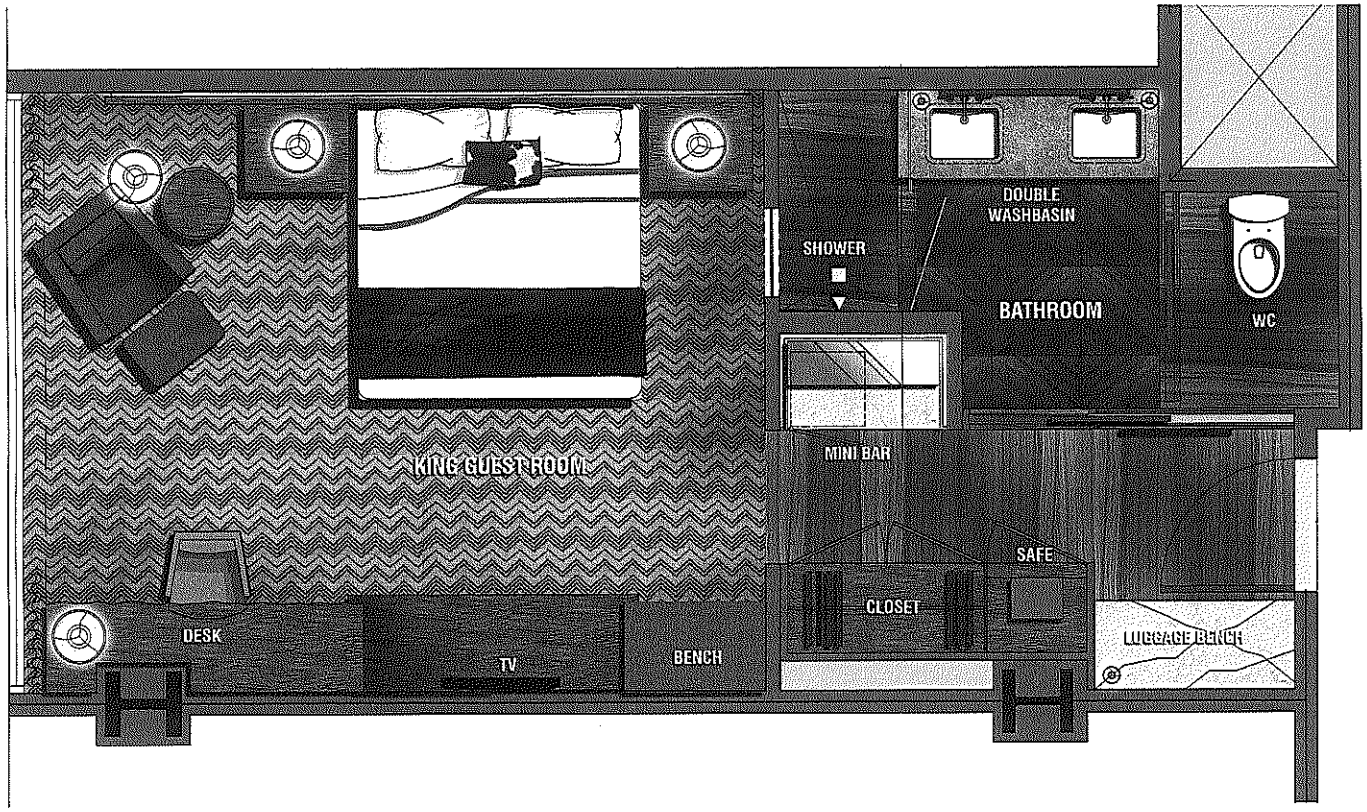
The hotel is proposed to be operated as a 4-star property. The design program allows for approximately 350 guest rooms and is distributed as follows:

- ***Standard King and Double-Queen Room – 295 total rooms***
  - 420 gross square feet
  - 4 fixture bathroom to include a double lavatory, shower or tub-shower combination and a separate toilet compartment
- ***Junior Suites – 40 total rooms***
  - Approximately 630 gross square feet
  - In addition to the Standard guestroom, the Deluxe room includes enhanced minimum four (4) fixture bathroom and a small living area
- ***Standard Suites – 10 total rooms***
  - Approximately 840 gross square feet
  - Rooms feature a separate living room and powder room
  - The sleeping area is similar to a standard room but with an enhanced minimum four (4) fixture bathroom
  - An additional double-queen lock-off unit can be attached, allowing the suite to be utilized as a two (2) bedroom option for families or large groups
- ***Penthouse Suites – 5 total rooms***
  - Approximately 1260 gross square feet
  - Penthouse rooms are located on the top three (3) floors of the hotel. These suites offer various terrace and balcony options depending on the location and view orientation
  - These luxury guestroom suites are intended as complimentary offerings for V.I.P casino guests and guests desiring more bedrooms or additional space. The design for these suites will reflect the level of quality suitable for these distinguished guests
  - An additional double-queen lock-off unit can be attached to the Penthouse Suites to expand the guestroom offering

Brand and Franchise Targets/Agreements

Hotel Loyalty Program

No external Franchise and Branding Agreements of external Host Loyalty Programs. The Branded player loyalty program to be utilized at the Grand Hudson will be their own internal plan.



GUEST ROOM PLAN

OWNER:

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC Construction Consultants

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:

Enlarged Guest Room Plan

Exhibit VIII.C.7.a

0 8" 16" 32"
3/8" = 1'-0"
at 11" x 17"

The Grand Hudson HOTEL & CASINO

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies used to determine the number and type of hotel rooms, level(s) of service and flag(s) or brand(s). Describe any assumptions and the bases thereof. Substantiate their reasonableness.

Please see the following Hotel Marketing Assessment prepared by Global Market Advisors.

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies used to determine the number and type of hotel rooms, level(s) of service and flag(s) or brand(s). Describe any assumptions and the bases thereof. Substantiate their reasonableness.

[redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

[redacted]

[redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

[redacted]

[redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

[redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

[redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

[redacted]

[redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

[redacted]

[redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

[redacted]

[redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

[redacted]

[redacted] [redacted] [redacted] [redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

[redacted]

[redacted]

Exhibit VIII. C.7.b. Copies of any forecast, projections, analysis or studies

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted]

[redacted]

[redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted] [redacted] [redacted] [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Exhibit VIII.C.7.c Name of the Proposed Manager or Operator of Hotel (if not by Applicant)

Exhibit VIII.C.7.c If any part of the Hotel(S) is not to be Managed or Operated by the Applicant or the Manager, Submit the Name of the Proposed Manager or Operator of such Part and Provide Copies of any Contracts, Agreements or Understandings Between The Applicant and/or the Manager and such Manager or Operator

The Applicant and/or Manager anticipates internally managing and operating the hotel and related amenities.

Exhibit VIII.C.7.d Forecast of the number of hotel rooms that will be used for casino and other forms of marketing or reserved for gaming establishment promotions and substantiate the basis of such forecast, for example, by comparison to comparable facilities

Hotels appurtenant to casinos have emerged as critical marketing tools for gaming operators. To quantify the number of hotel rooms necessary to accommodate the marketing team's efforts and overall casino demand, the Grand Hudson Hotel and Casino ("Company") evaluated the size of the projected casino's database. The Company then made certain assumptions with regards to comping and hotel room discounting policies that casino management would likely utilize with the hotel. The Company assumed that 10% of rooms would be put aside for casino hosts to utilize during both the Midweek and Weekend time periods. Then, based on current redemption rates at comparable properties, GMA quantified the additional number of room nights of demand that would be generated by the casino's database. After accommodating casino demand, the Company assumed the remaining rooms would be occupied based on the level of demand of the various demand segments, including FIT, Business, Group and Other. Please see Exhibit VIII.C.7.b for a detailed hotel feasibility study further detailing the source of demand for the proposed hotel.

Exhibit VIII.C.7.e Hotel Spa, Fitness and Swimming Pool Facilities

The Health and Wellness portion of the resort is comprised of a 3,000 square foot Spa, and a 1,500 square foot state of the art fitness facility to enhance the guest experience. The resort amenities feature two swimming pools, including an indoor pool, enclosed within a 2,800 square feet space, connecting to a larger outdoor pool in a 14,000 square feet space, dubbed the "Outdoor Oasis." These amenities are located at the Podium Level of the hotel. These will serve as a buffer between the Hotel and Casino activities.

The adjacent hillside provides a natural buffer allowing for a direct link to the site's existing topography while extending privacy for the "Outdoor Oasis" users. The "Outdoor Oasis" sits on the roof deck above the back of house and casino level and embraces the hillside extending above.

The "Outside Oasis" boasts an event lawn adjacent to the ballroom, a covered walkway, and a small outdoor dining experience. The most unique feature of this amenity is the terraced pool and jacuzzi arrangement that engages the guests with the landscaped hillside. The pool will be a heated swim in and swim out design so that guests can utilize it during winter months without experiencing the elements of the cold climate.

		Spa & Fitness at Hotel		**7,300**
		Spa (shell only – contract out)		3,000
		Fitness		1,500
		Enclosed Pool		2,800
		Outdoor Oasis (Pool, Hot Tub, Event Lawn) - not included in total number		14,500

Energy Consumption Mitigation

There are a variety of energy conservation measures being considered in the design of the various spa, pool and outdoor oasis components. The size of the pumps associated with each facility can be reduced when reducing the pool circulation system's hydraulic resistance through larger filters, increasing the diameter of the pipes and designing with flexible pipe or non-90-degree elbows where the layout allows. This in turn has a substantial energy reduction. Other considerations include: the reduction of water and heat loss through well designed pools with pool covers in non-occupied periods, energy efficient pool heater, solar pool heaters, and solar pool collectors. To balance the energy load for maintaining/heating the pool water and dehumidication of the associated pool environment, the use of a heat recovery air handler will be utilized. The waste heat from the air handler will be used to heat the pool and therefore reduce overall energy demand.

Exhibit VIII.C.7.f Description of any Particular Efforts – Design, Operations, and/or Marketing – that are planned to differentiate the hotel from Competitors and to maximize the Potential of the Market

Refer to Marketing Plan in Exhibit VIII.B.9.b for overall discussion of the casino resort and its efforts to maximize their potential as a Resort operator, including the gaming space and hotel and related amenities.

Exhibit VIII.C.7.g Names of Hotels of Comparable Quality to that of the Proposed Hotel(s) at the Gaming Facility

Hotels of Comparable Quality

The proposed Grand Hudson Hotel would be a four star hotel comparable to premium Marriot, Hilton and Westin brands. Please see Exhibit VIII. C. 7. b. for a detailed hotel feasibility study further detailing the quality level of the proposed hotel facility.

Exhibit VIII.C.7.h Whether Linen Supply, Housekeeping, and Laundry will be Outsourced or Retained within the Gaming Facility Operations

The Applicant and/or Manager currently anticipate these areas will not be outsourced and will be contained within the property operations.

Exhibit VIII.C.8.a Conference and Meeting Spaces

The design includes a 7,200 square foot ballroom that can be partitioned as two (2) 3,500 square foot spaces to accommodate smaller to mid-size gatherings up to 150 people each, and three (3) additional meeting rooms at 1,000 square feet to host parties of up to 40 people each. Opportunities for catering services can be accommodated through the available Hotel and Banquet facilities to support these programmed uses.

The conference and meeting spaces are located at the podium level, directly above the main kitchen for direct access of food and beverage services, and above the loading dock for ease of delivery of exhibits for the meeting spaces. Two (2) Back of House and Food Service elevators connect all three levels. One (1) is allocated for the food and beverage delivery and one (1) for access of meeting room exhibit delivery and the removal of trash. The trash elevator will have direct access connecting to the trash and recycling area adjacent to the loading dock.

Conference Space	20,000 SF	Capacity
Meeting Spaces:		
Main Ballroom	7,200	300
Additional Meeting Rooms (3 @ 1000 SF each)	3,000	(3) 40 = 120
Public Support (Pre-Function, Circulation, Toilets)	5,500	
BOH Support	4,300	

Exhibit VIII.C.8.b Description of any Proposed Business Center Facilities

The design includes an approximate 340 square foot business center that will accommodate 3-4 computer work stations with internet access complete with printers. The center will not be staffed separately, but will be managed through the hotel front-desk.

Exhibit VIII.C.9.a Entertainment Venues – Submit a description of the entertainment venues proposed for the Project Site whether located inside or outside the Gaming Facility, the square footage and patron capacity of each (minimum/maximum), admission charges/price, the contemplated frequency of events (e.g., number of entertainment events and entertainment days), and uses/types of entertainment to which the venues will be dedicated. Describe and provide copies of any arrangements or agreements with promoters, artists, or performance companies or troupes. Substantiate (e.g., by comparison to analogous projects) the bases for such plans and estimates.

The resort features several entertainment venues. The largest space is the event center, a large multi-purpose space of approximately 15,000 – 20,000+ square feet. It is located to the northwest of the resort and has been accommodated with its own loading dock and support spaces. This venue will be flexible in its design and will allow for various types of performance events and can accommodate up to 1300 people. This programmed space can be utilized for assembly purposes like for conferences, boxing matches, community theater, live performance entertainment, local community graduations, bingo night and other entertainment opportunities.

Additional venues for entertainment include a smaller 3,800 SF Jazz Club featuring music and dancing, designed to accommodate approximately 135 guests, and a two-level night club tucked away on the east side of the building for a high-energy dance and entertainment experience. This venue is programmed at 4,000 SF and can accommodate approximately 400 guests.

		Projected Food and Beverage Areas	Number of Seats	Area Per Seat	Approx. Area (SF)
Club Venues					**7800 SF**
		High Energy Club (2 levels)	400	10	4000
		Jazz and Dance Club	135	28	3800

Admission Prices

Applicant anticipates admission prices will range from $100.00 per ticket for "A" type events, $65.00 per ticket for "B" type events and $20.00 per ticket for "C" type events.

Frequency of Events

Applicant anticipates events to be held once a week with 12 A type events throughout the year, 12 B type events throughout the year and 24 B type.

Arrangements with Promoters, etc.

In this preliminary stage prior to the award of an actual gaming license no agreements have been entered into with promoters, entertainers, etc. except the MOU's the Applicant has entered into with the Dutchess County Stadium and Fairgame, see Exhibit IX.B.2.a.

Exhibit VIII. C.9.b. Submit a description of how the entertainment venues proposed for the Project Site are distinguished (whether by design or intended use) and intended to complement the impacted live entertainment venues identified pursuant to Item IX.B.2.

As described, the facility will contain several entertainment venues that will have live entertainment. In addition to our commitment to Fairgame and Dutchess County Stadium (discussed in Exhibit IX.B.2a and b), we will coordinate with local restaurants/bars to prevent overlap of entertainers – and insure that popular local groups have a mixture of opportunities. Our three most popular venues – the high energy club, the jazz club and our Event Center will be unique to the Hudson Valley – modern, 21st century venues unlike anything the Valley has seen previously. But, we want to insure the survival of the many venues which already exist.

To meet this goal, we will engage an onsite entertainment manager, whose responsibilities will include frequent meetings with Fairgame representatives throughout the year. Since Dutchess County Stadium is an outdoor facility, meetings with the County will start during the first quarter of the year and continue through the third quarter. We will also meet with the Mid-Hudson Civic Center (MHCC) to coordinate our activities since their facility will be the closest in kind to the Grand Hudson Event Center.

Each of the Grand Hudson's entertainment venues will be different. The high energy and jazz clubs will have mostly DJs, with the occasional bad or bands of up to six. Smaller bars and restaurants may have the occasional solo entertainer – a guitar or piano player – to create a joyful mood – and promote the facility.

The Event Center will be the primary focus of the Grand Hudson. It will be available for the community first – local meetings and gatherings, high school and college graduations, etc. Second, the center will be available for ballroom-like events. These include banquets, political gatherings, not-for-profit fundraisers, etc. The Center is intended to become a focal point for specific Group A and B performers that will be potentially exposed to the Hudson Valley for the initial time. We will also coordinate with the Bethel Woods Performing Arts Center and MHCC in creating alternate year circuits for performers and events, like trade shows, festivals and conferences.

Our goal is to create a distinguished property from those around us – not one to compete but to complement. If the existing venues close because of the Grand Hudson, we will have failed as an entity. Simply, we will not permit this to occur.

Exhibit VIII. C.9.c Submit a description of the extent to which entertainment venues and plans are contemplated to be used for casino and/or other marketing. Include the manner in which the Gaming Facility will enhance entertainment venues already existing in the Host Municipality and nearby municipalities.

Programming Rationale

Entertainment will serve a critical role in the marketing activities at the Grand Hudson Resort. The programming will include a mix of entertainment venues designed to appeal to gamers with diverse tastes in entertainment. The ultimate goal is to energize the gaming experience by providing a diverse program of entertainment. Just as important, the gaming facility's entertainment venues are designed to complement the existing mix of entertainment venues in the market today.

Programming Strategies

Create a compelling mix of entertainment venues that can accommodate a wide variety of entertainment options that complement the region's existing mix of entertainment options.

Events Center

The Events Center will offer headline entertainment in an intimate setting. Designed to accommodate 1200 patrons, the room will afford patrons excellent site lines and up-close seating. Its unique size will assure that the facility will not compete with larger entertainment venues found in regional market. Sized below other venues in the market, the Project's Event Center will serve as a venue for smaller, more intimate acts that will appeal to the casino's premium players. It will also be used to accommodate VIP player parties and casino special events such as tournaments, banquets and parties centered around major sporting events.

The Meridian Bar

The Meridian Bar will serve as a focal point in the casino. Located in the center of the casino it will create a zone of energy and excitement that will emanate into the surrounding gaming floor. It will be a place to meet, take a break, recharge and relax. The Meridian Bar will seat 128 guests at the bar and surrounding lounge seating.

Jazz Lounge,

The Jazz Lounge will serve a number of purposes. During the day the Jazz Lounge will serve as a casino bar. At night the Jazz Lounge will convert to an entertainment lounge with nightly live entertainment, providing gamers a place to get away from the gaming floor. On weekend afternoons it will be the place for casino patrons to watch sporting events.

The Club

The Club is a two-story, high-energy nightclub. Open on weekends, the Club will accommodate 400 patrons. It will also be used for casino-centric events.

Ultra Theater

The Ultra Theater is a private movie theater and special event experience where invited guests can attend private screenings, closed-circuit sporting events and private parties. Designed to accommodate 40 patrons, the Ultra Theater will offer state-of-the-art audio/visual technologies in an intimate setting.

Exhibit VIII.C.10.a Submit a description of:

1. the proposed restaurants, including the approximate number, square footage and patron capacity, types and themes and the identity of any restaurateurs the Applicant anticipates will operate the restaurants.

1. Programmed Area for Proposed Restaurants

			Number of Seats	Area Per Seat	Approx. Area (SF)
Food and Beverage Venues					**27,500**
		Buffet	350	24	8,400
		Italian	175	24	4,200
		Asian	150	24	3,600
		Southern Cuisine	135	24	3,250
		Steak & Seafood	85	28	2,400
		Casual Grab & Go wings, pizza, burger bar)	100	18	1,800
		Coffee Bar / Smoothies	25	18	450
		VIP Food Service - The Grapevine	46	24	1,100
		Center Bar	128	18	2,300

- The Applicant intends to lease out the Italian venue with the remaining outlets intended to be operated by Applicant or the Manager.

2. the proposed retail spaces, including the approximate number, square footage and types of retail shops and how such retail development will serve the general community.

2. Proposed Retail (Phase 1 only)

			Approx. Area (SF)
Retail Shops			**6,100**
		Leasable Area in Casino (propose 3 retail shops)	4,250
		Resort Themed Retail	1,400
		Sundries Shop	450

3. the proposed lounges and bars, including the approximate number, square footage and patron capacity and types.

3. Proposed Lounges and Bars

			Number of Seats	Area Per Person	Approx. Area (SF)

Lounge, Club & Bars					
		Jazz Lounge & Dance Club	135	28	3,800
		High Energy Club	400	10	4,000
		Center Bar	128	18	2,300
				Subtotal	**10,100**

- The programmed area for the lounge and clubs are a repeat of areas as these areas have been listed in the "Entertainment Venues" write-up (Exhibit VIII.C.9.a). The center bar has been shown, as it is not anticipated that it will have live entertainment.

4. any proposed recreation facilities.
5. any other proposed and related facilities or amenities.

4. Additional Proposed Amenities

In addition to the facilities listed above, the resort will feature a small V.I.P. Movie Theater with seating for approximately 30-40 people in casual armchairs. The space can be utilized for events such as Super Bowl parties and similar popular events.

Exhibit VIII.C.10. b. Description of plans, if any, to highlight Host Municipality local and regional products, brands and cuisine in restaurants, lounges, bars, retail spaces and ancillary amenities. Describe any proposed tie-ins or ventures with Host Municipality, local and regional establishments. Provide copies of any agreements or arrangements for the same. Describe how the Gaming Facility will complement and be compatible with the Host Municipality's culture and how it will showcase, stimulate and improve the use of existing and future attractions, including tourism and convention facilities within the Host Municipality and nearby municipalities bars, retail spaces and ancillary amenities. Describe any proposed tie-ins or ventures with Host Municipality, local and regional establishments. Provide copies of any agreements or arrangements for the same. Describe how the Gaming Facility will complement and be compatible with the Host Municipality's culture and how it will showcase, stimulate and improve the use of existing and future attractions, including tourism and convention facilities within the Host Municipality and nearby municipalities

The Grand Hudson will highlight the Town of New Windsor, as a Host Municipality, as well as the entire Hudson Valley Region. To accomplish this, The Grand Hudson will host numerous events and conferences, including trade shows, to attract tourism and activity to the Facility and to Stewart Airport. As part of its mitigation plan, the Applicant will construct the Mid-Hudson Valley Sports & Aquatic Center, which will generate more than 880 hotel nights over the course of a year. These two facility will boost the economic activity of the region, allowing for growth of the Grand Hudson and the various businesses in the Region, boosting the economy and creating jobs.

The Grand Hudson will also highlight local and regional products, brands and cuisine in restaurants, lounges, bars, retail spaces and ancillary amenities. We have already partnered with local restaurants and at least one will be located on site as a unique Italian Restaurant. We will seek out local produce from suppliers utilized by local restaurants, including Noble Coffee roasters (Campbell Hall, NY) and Continental Organics (New Windsor, NY). We have also partnered with four golf courses to provide recreational opportunities to our patrons – the historic, 100+ year old Powelton Club (Newburgh, NY), Otterkill Country Club (Campbell Hall, NY), Osiris Country Club (Walden, NY) and the West Hills Country Club (Middletown, NY) which features a bridge designed and built by Roebling. We have agreed in our various letters of intent or MOUs to partner with local businesses and support them with either utilizing their produce and services, or, when available, purchasing gift certificates to be awarded to our patrons and players.

Realizing the need to create tourism and bring down-staters and out-of-staters to the Region, we have partnered with leprechaun Bus Lines (New Windsor & Newburgh, NY) for bus trips from PA, CT and NYC. Leprechaun will also provide site seeing tours for our guests – such as our US History Tour (Kingston, Hyde Park and Newburgh), the Military Tour (Newburgh, West Point and Stewart Airport), our Fall Foliage Tour at various destinations in the Catskills, the Winery Tour of Dutchess County, the Arts Tour (Beacon and Storm King Museum), The Museum Tour (Storm King and Motorcycle Museum). We have also partnered with restaurants along the waterfront in Newburgh and Poughkeepsie – with the unique partnership with Shadow One – a high speed boat between Newburgh and Poughkeepsie. For guests wanting to stay in Poughkeepsie, we have partnered with The Grand Hotel – so our patrons can experience another area of the Valley, including the Bardavon and the Mid-Hudson Civic Center. For those looking for the modern and nostalgia, we have established arrangements for bookings and tickets at Bethel Woods Center for the Arts, located at the site of the 1969 Woodstock festival in Bethel, NY, which is committed to inspire, educate end empower individuals through the arts and humanities. The Bethel Center offers multiple stages featuring a diverse selection of popular artists and culturally rich erformances, an award-winning museum, and educational and community programs that provide meaningful experience in arts, history and civic engagement.

Exhibit VIII.C.11 Statement as to how the Hotels, Hotel Rooms, Restaurants and other Amenities that are part of the Proposed Gaming Facility will compare in Quality to other Area Hotels, Restaurants and Amenities as well as Those Included and Offered in other Competitive Gaming Facilities

Refer to Business Plan contained in Exhibit VIII.A.5 for the overall discussion of the resort and its relationship to other area hotels, restaurants and amenities.

The Grand Hudson Hotel & Casino will open in a very mature and competitive environment. While the addition of this full-service casino resort will grow the overall gaming market, the property will still need to compete with other full-service casino resorts for its share of the region's gaming market.

Full-service resort casinos in Connecticut and Pennsylvania have well established databases and well-tested marketing programs. While the Project will have a locational advantage over other resort casinos and a far superior gaming and entertainment environment than that which is available at racinos today, the Company does not take the competition lightly and will need to spend considerable resources to carve out its share of the market. This section examines the regional gaming competition, evaluates each property's strengths and weaknesses and provides the reader with insights into how the Grand Hudson will maintain a competitive advantage over its regional competitors. It concludes with strategies that the Company will employ to compete for its share of the region's gaming market.

Leadership of the Grand Hudson defines its primary competition as full-service casino resorts that target the primary markets of the four-state area. The primary competition is further delineated based on driving distance. Secondary competitors are comprised of racinos that offer convenience-based gaming for gamers residing in and around New York City. Given that those properties are very dependent on area residents for the lion's share of their gaming revenue and those properties focus on VLT gaming, the Hudson Grand views New York State racinos as secondary competitors.

Rather than rely on pricing tactics, primarily in the form of free play to drive visitation, the Grand Hudson will provide a superior gaming, lodging, entertainment and lifestyle experience that will be clearly differentiated from convenience-based racino properties and regional resort casinos. Grand Hudson will also capitalize on its convenient access from key feeder markets. While leadership understands that comps, free play and mail offers play an important role in how gamers choose one casino over another, it adheres to the principle that superior products and services are the key elements to foster loyalty. The Grand Hudson will also offer a better wagering experience on its slot floor by offering more generous slot hold percentages than its primary resort competitors. Its target hold will be approximately .5% higher than Empire Slots effective hold of 6.64%, net of free play. The target slot hold is forecast at 7.1%. This will be substantially lower than Sands Bethlehem and ultimately a critical success factor for the Project.

Exhibit VIII.C.12 Description of the Applicant's Proposed Hours of Operation for the various components of the Proposed Gaming Facility including the Casino, Restaurants, Bars and other Amenities

The following discussion illustrates the Applicants proposed hours of operations for the various components of the Gaming Facility. The hours are just proposed at this time and the ultimate opening and closing times may vary with the final product.

As a general note, the Grand Hudson will observe all State Liquor Laws relating to the hours of operation.

Gaming Facility: All gaming operations including the poker room and high limit room and all related support components will be open 24 hours a day seven days a week.

Restaurants:

Buffet – will open for breakfast seven days a week at 7 am and close after dinner at 10 pm

Asian – will open for lunch beginning at 11:30 am and will close at 4 am seven days a week; the bar inside the restaurant will open at 10:30 am and close at 4 am; Sundays the bar will not open until noon

Italian – will open for lunch beginning at 11:30 am and will close after dinner at 11 pm seven days a week; the bar inside the restaurant will open at 10:30 am and close at 12 am; Sundays the bar will not open until noon

Southern Cuisine - will open for lunch beginning at 11:30 am and will close after dinner at 11 pm seven days a week; the bar inside the restaurant will open at 10:30 am and close at 12 am; Sundays the bar will not open until noon

Steak and Seafood – will open for dinner at 5 pm and close at 11 pm seven days a week; the bar inside the restaurant will open at 4 pm and close at 1 am

Casual Grab N Go – will be open 24 hours a day seven days a week

Coffee Bar – will be open 24 hours a day seven days a week

VIP Food – will open for food and beverage at 8 am and close at 4 am seven days a week except Sunday when the bar portion of the VIP area will open at noon

Bars:

Center Bar – will be open seven days a week and will be open from 8 am until 4 am seven days except Sunday when the bar will not open until noon

Jazz Bar - will be open seven days a week and will be open from 8 am until 4 am seven days except Sunday when the bar will not open until noon; entertainment will be provided at the Jazz Bar seven days a week beginning at 5 pm through 12 am

Wine Bar – will be open seven days a week and will be open from 4 pm until 12 am

Exhibit VIII.C.12 Hours of Operation

Retail:	Retail outlets are planned to be open seven days a week beginning at 11 am and closing at 10 pm
2 Level Club:	The two (2) level club will be open be Friday and Saturday nights from 8 pm until 4 am
Spa:	The spa will be open seven days a week beginning at 10 am until 10 pm
Fitness:	The fitness center will have 24 hour access seven days a week via a hotel patron's room key

Exhibit VIII.C.13 Description, Including Square Footage, of Back Of House, Security, Kitchen and Office Facilities to Support the Remaining Building Program

Back of House Areas

The casino support areas occur primarily at the basement level below the casino gaming floor. While embracing the site's topography, the Back of House areas, naturally nestle beneath the casino floor to allow access at grade, for the loading dock. The Back of House encompasses the following support facilities:

		Hotel and Casino Support		**43,500 SF**
		Cage, Credit and Count (Incl. High Limit, Credit & Marker)		3,200
		Bank / Sally Port		1,000
		Regulatory Offices and Counseling Center		1,000
		BOH Offices		5,100
		Surveillance, MDF & Slot Management		2,800
		I.T. Offices		2,500
		Human Resources		1,100
		Additional available office space (accounting, execs, gaming authority, etc.)		7,500
		Security, Purchasing & Receiving		1,600
		Employee Dining		2,200
		Cold, Dry, Liquor and Beverage Storage		4,700
		Locker Rooms and Uniform Issue		5,800
		On-site Laundry		5,000

The programmed area for the main and satellite kitchens are designed to be approximately 40% of the allocated dining area. The buffet, casual "grab and go" restaurant, room service, employee dining and the ballroom are served directly from the Main Kitchen at Level 1(casino level). The programmed area for the Main Kitchen rests directly above the loading dock and has two (2) dedicated food service elevators adjacent for direct access. The current design allows for one (1) elevator for clean food and one (1) for trash. The remaining 5-star food and beverage venues each have their own satellite kitchens and direct access from the Back of House area.

		Food and Beverage Support		**13,820 SF**
		Main Kitchen		7,700
		Satellite Kitchens		5,400
		Service Bars (3 @ 240 s.f. each)		720

Exhibit VIII.C.14.a Description of the Approximate Number, Location and Accessibility of Parking Spaces and Structures

Parking demand for the facility was calculated based on research conducted by a gaming market analyst to determine the number of daily visitors to the Grand Hudson Hotel and Casino. On average, 12,900 patrons will visit the casino daily. The average number of patrons per vehicle is 1.9 and would turn over on average 3.3 times per day. Therefore, approximately 2060 parking spaces would be required to accommodate gaming operations. Parking demand for the hotel was based on parking generation rates for the Resort Hotel Land Use Code 330 found in the Institute of Transportation Engineers' Parking Generation Manual. The number of parking spaces required for the 350 room resort hotel is 497 spaces. We would anticipate another 400 parking spaces would be necessary to accommodate employees. Therefore, parking demand for the Grand Hudson Hotel and Casino facility is 2,957 spaces.

Parking facilities and access routes are illustrated in Exhibit VIII.C.5.a. Parking is provided for casino patrons, employees, motor coaches and service vehicles utilizing structures and surface lots. The number of parking spaces can be summarized as follows.

Location Number	Function	Type	Number of Spaces
Lot 1	Patron Self Park	Surface Lot	238
Lot 2	Patron Self Park/Valet	Parking Garage	2,400
Lot 3	Patron Self Park	Surface Lot	69
Lot 4	Employee/Patron Overflow	Surface Lot	982
Lot 5	Bus and Motor Home	Surface Lot	32
Total			**3,721**

Accordingly, the facility will have an additional 764 spaces to accommodate overflow parking.

On-site circulation roads will incorporate drop off locations to service the hotel and casino as well as the event center. A separate drop off will be provided for bus and recreational vehicles. Wayfinding signage directing patrons to the desired drop off and parking locations will be provided throughout the site as well as on the public roads utilized for access to the facility. Dedicated ADA compliant walkways have been incorporated into the plan to provide unobstructed pedestrian access between the parking lots and casino facilities.

Exhibit VIII.C.14.b Description of Traffic Circulation Plans for the Project Site Including Ingress and Egress of Casino Patrons, Employees and Suppliers Including Plans for Tour Bus, Limousine and Valet Drop-Off Areas, and Plans for Service Vehicle Parking

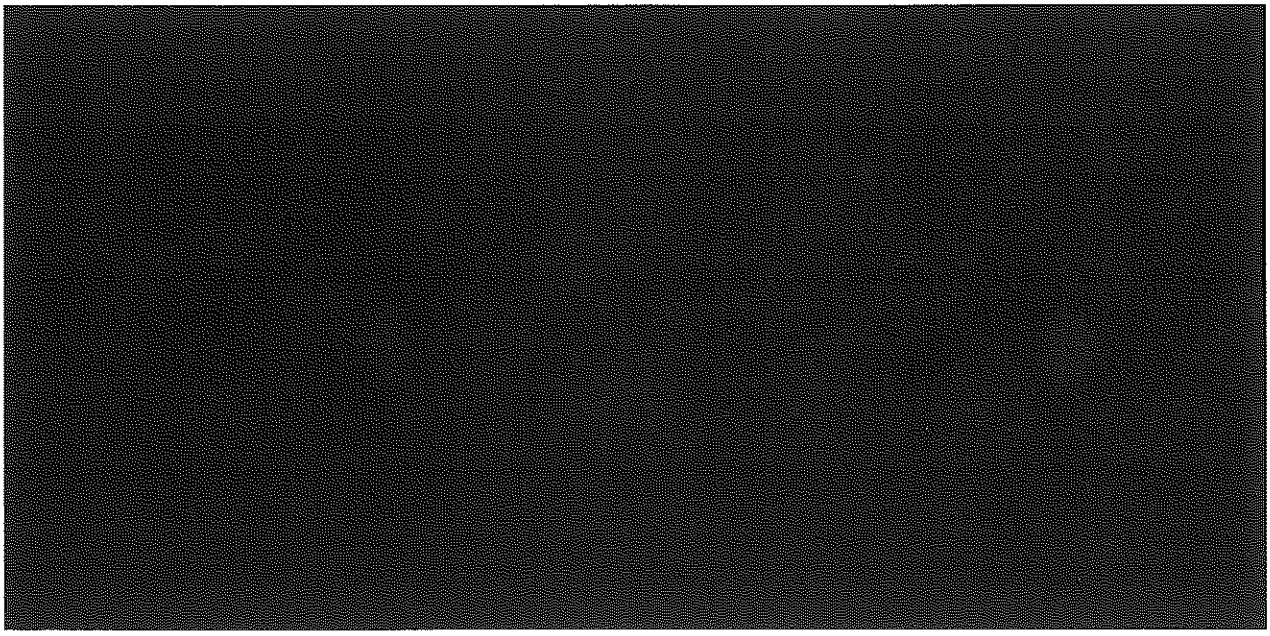


TABLE OF CONTENTS

Basis of Design

OVERVIEW

FIRE SUPPRESSION

PLUMBING

HVAC

ELECTRICAL

TECHNOLOGY AND SECURITY

FIRE ALARM

OVERVIEW

This Basis of Design (BOD) documents the engineering design criteria and associated system descriptions. The BOD has been developed based upon the provided space programming and progress architectural design concepts along with the design requirements per the New York State Building Code. The purpose of this BOD package is to support the discussion of engineering concepts through this project phase and provide additional detailed information for cost estimating and space planning.

For aspects of the space program that are available at this stage in the project, Vanderweil's experience is the design, start-up and operations of relevant gaming and hospitality projects have been utilized.

The Greenetrack project consists of the new Casino complex, which will consist of gaming, restaurant, convention/Grand Ballroom, retail, back of house and associated spaces; and the construction of a 14 story hotel. A parking garage building and a central utility plant within basement level of the casino complex.

The casino gaming, retail and food and beverage is located on the first level, convention/pre-function on the second level and the high rise hotel starting on the third level extending fourteen stories.

The project will pursue LEED certification and will meet the requirements of the State Building Code.

FIRE SUPPRESSION SYSTEMS DESCRIPTION

WATER SUPPLY

The primary water supply will be via the gridded municipal underground domestic water distribution network, water supply flow test information is not currently available

An on-site secondary water supply (storage tank) is required for high rise buildings assigned to Seismic Design Categories C, D, E or F. The storage tank capacity must be at least equal to the calculated sprinkler demand inclusive if hose stream allowance for a duration of not less than 30 minutes. It is currently anticipated that a storage tank will not be required

BUILDING FIRE SERVICES

The following fire services will serve the project:

Grand Ballroom

- Quantity - One
- Size - 10 inch
- Backflow Prevention - Double Check Valve Assembly

The Grand Ballroom will be supplied from the low pressure zone fire pump

Casino, Spa, & Retail

- Quantity - One
- Size - 10 inch
- Backflow Prevention - Double Check Valve Assembly

The Casino, Spa, & Retail areas will be supplied from the low pressure zone fire pump

Parking Garage

- Quantity - One
- Size - 10 inch
- Backflow Prevention - Double Check Valve Assembly
- Entrance Location(s) - Dry valve rooms (at-grade).

The parking garage area will be supplied from the low pressure zone fire pump

Hotel

- Quantity - One
- Size - 8 inch
- Backflow Prevention - Double Check Valve Assembly

- Entrance Location(s) - Fire service equipment / mechanical room.

The Hotel tower will be supplied from the high pressure zone fire pump. The lower levels will be supplied from the low pressure zone fire pump

CENTRIFUGAL FIRE PUMPS

Low Pressure Zone Fire Pump

A Low Pressure Zone Fire Protection Booster Pump will be provided to increase the water supply pressure to meet the system demand requirements

Pump Data

- Quantity - One, located at the central plant area
- Type - Horizontal Split Case
- Capacity - 1,000 gpm
- Drive - Electric
- Boost - Sized to satisfy the sprinkler and standpipe system demand.
- Controller - Reduced voltage solid state with integral Automatic Transfer Switch

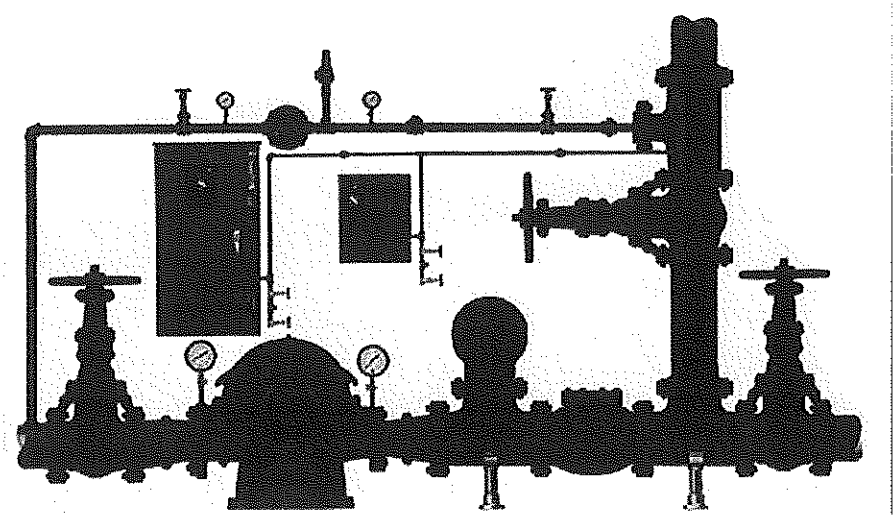
High-Rise Fire Pump

The high-rise Hotel tower will require a fire pump to boost the incoming water pressure in order to satisfy the minimum fire department valve outlet residual pressure requirements at the top level of the hotel tower. The fire pump will be supplied by one fire service.

High Pressure System - To meet the design criteria of the top most floors, the system will utilize a main distribution system operating at pressures above 175 psi. On the lower levels where pressure exceeds 175 psi, sprinkler system and fire department valve pressure will be lowered via direct acting pressure regulating valves.

Pump Data

- Quantity - One, located at the central plant area
- Type - Horizontal Split Case
- Capacity - 1,000 gpm
- Drive - Electric
- Boost - Sized to satisfy fire department hose valve requirements of tallest anticipated structure.
- Controller - Reduced voltage solid state with integral Automatic Transfer Switch



Fire Pump Piping Arrangement

-
-

STANDPIPE SYSTEM

NFPA 14 Definitions

Automatic Standpipe System: A standpipe system that is attached to a water supply capable of supplying the system demand at all times and that requires no action other than opening a hose valve to provide water at hose connections.

Combined System: A standpipe system having piping that supplies both hose connections and automatic sprinklers)

System Type

- Class I System: A system that provides 2 1/2 in. (65 mm) hose connections to supply water for use by fire departments and those trained in handling heavy fire streams.)
- Class II System: A system that provides 1 1/2 in. (40 mm) hose stations to supply water for use primarily by trained personnel or by the fire department during initial response.
- Class III System: A system that provides 1 1/2 in. (40 mm) hose stations to supply water for use by trained personnel and 2 1/2 in. (65 mm) hose connections to supply a larger volume of water for use by fire departments and those trained in handling heavy fire streams.

Automatic Wet-Pipe Standpipe System

A Class I automatic wet-pipe standpipe system will be provided for the structure. Fire hose valves (2 1/2 in) will be provided in rated egress stairwells and other areas where required to satisfy travel distance limitations or as otherwise directed by the local fire department.

On lower levels of the hotel tower where system pressures exceed 175 psi, fire department valves will be pressure reducing type. The Casino, Grand Ballroom, Spa and Retail spaces will be supplied from the low pressure zone fire pump to minimize the number of pressure regulating valves required to be installed and maintained.

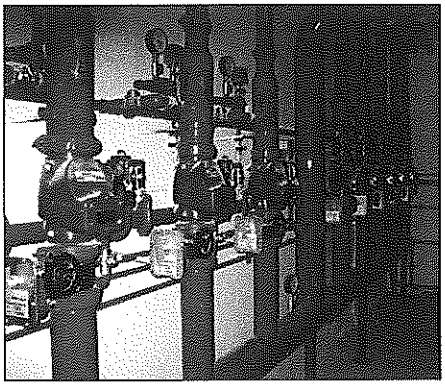
Parking Garage

A Class I automatic dry-pipe standpipe system will be provided within the parking garage. Fire hose valves (2-1/2 inches) will be provided at egress stairwells and other areas where required to satisfy travel distance limitations or as otherwise directed by the local fire department.

SPRINKLER SYSTEM

General

Where required by the State Building Code, structures must be sprinklered throughout in accordance with NFPA 13. With the exception of the open levels of the parking structure, all structures must be sprinklered throughout.



Sprinkler Alarm Valve

In general "sprinklered throughout" is inclusive of all occupiable and accessible areas of buildings inclusive of specific isolated areas such as the following:

- Electric closets
- Electric rooms
- Tel/data rooms/closets
- Entry vestibules
- Concealed combustible spaces
- Data Centers/Server Room(s)
- Hotel Closets

A building that is "sprinklered throughout" may omit sprinkler protection where NFPA 13 specifically permits. Examples of such areas are as follows:

- Properly rated noncombustible mechanical shafts
- Noncombustible elevator hoistways
- Properly rated main electrical switch-gear room(s)
- Below non-combustible raised flooring

Casino, Grand Ballroom, Spa, & Retail Space

The new sprinkler systems will be provided supplied from the low zone fire pump. Sprinkler system zone control assemblies and risers will be located in distributed interior fire suppression valve rooms.

All interior conditioned spaces including gaming areas, common circulation, dining, mechanical, cash rooms, and back-of-house support will be protected by automatic wet-pipe sprinklers. See "Special Suppression Systems" section for description of MDF/IDF room protection.

Unconditioned areas such as the loading docks will be protected by automatic dry-pipe sprinkler systems.

Hotel Tower

The hotel tower sprinkler system will be supplied by the High-Pressure Zone fire pump.

Lower level tower systems supplied by the High Pressure Zone fire pump which exceed 175-psi will be provided with direct acting pressure regulating valves to reduce system pressure.

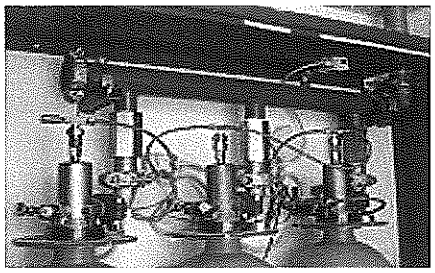
Sprinkler system zone control valves and risers will be located within distributed fire suppression valve rooms on the lower levels and within egress stairwells - as part of the combination sprinkler / standpipe system - of the hotel structure.

All interior conditioned spaces including gaming areas, common circulation, dining, ball rooms, spas, retail tenants, mechanical, and back-of-house support will be protected by automatic wet-pipe sprinklers. See "Special Suppression Systems" section for description of MDF/IDF room protection.

Unconditioned areas such as loading docks or similar will be protected by automatic dry-pipe sprinkler systems.

Parking Garage

Enclosed levels (below-grade) will be protected by automatic dry-pipe sprinkler systems. Dry-pipe valves supplying the systems will be located in fire suppression valve rooms adjacent to the underground fire service entrance locations. Assuming the garage structure is not a high rise building, levels that qualify as "open" as defined by the Building Code do not require sprinkler protection.



Clean Agent Tank Manifold

SPECIAL SUPPRESSION SYSTEMS

Mission Critical Data Equipment Rooms

The following areas will be protected as "Mission Critical" spaces:

- MDF Rooms
- IDF Rooms

Each area identified as "Mission Critical" will be protected by a total flooding clean agent fire extinguishing system (primary equipment protection) and a preaction sprinkler system (standby code-required building protection).

Preaction sprinkler systems will be single-interlock, electric release type. Clean agent systems will utilize NOVEC-1230 extinguishing agent and include primary and reserve tank manifolds.

FIRE SUPPRESSION DESIGN CRITERIA

Supplemental Owner insurance carrier requirements do not apply to the project. In general, the design will meet the requirements of the applicable State building and fire codes.

CODES AND STANDARDS

Building and Fire Codes

- Building: 2010 Building Code of New York State
- Fire: 2010 Fire Code of New York State

Applicable Design Standards

National Fire Protection Association (NFPA)

- NFPA 13 - Installation of Sprinkler Systems,
- NFPA 14 - Installation of Standpipe and Hose Systems
- NFPA 20 - Installation of Centrifugal Fire Pumps
- NFPA 24 - Installation of Private Fire Service Mains and their Appurtenances
- NFPA 11 - Low, Medium, and High Expansion Foam
- NFPA 2001 - Clean Agent Fire Extinguishing Systems

STANDPIPE SYSTEM

Total system flow: 1,000 gpm

Pressure at most remote hose outlet: 100 psi automatically via fire pump as required for a high rise building.

SPRINKLER SYSTEM

Sprinkler System Design Criteria (NFPA 13 - 2007 Edition)				
Occupancy Classification	Area Description	Design Density (gpm/sf)	Calculation Area (sf)	Hose Stream Allowance (gpm)
Light Hazard	Office Space	0.10	1500	100
	Restrooms	0.10	1500	100
	Restaurant Seating	0.10	1500	100
	Data Center	0.10	1500	100
	Classrooms	0.10	1500	100
	Conference Rooms	0.10	1500	100
Ordinary Hazard Group I	Kitchen	0.15	1500	250
	Mechanical Room	0.15	1500	250
	Electric Room	0.15	1500	250
	Parking	0.15	1500	250
Ordinary Hazard Group II	Retail Spaces	0.20	1500	250
	Loading Dock (no storage)	0.20	1950 Dry pipe system	250
Extra Hazard Group I	Cogeneration Areas	0.30	2500	500
Miscellaneous Storage (NFPA 13, Table 13.2.1)	Loading Dock - Palletized Storage, bin box and shelving storage, storage up to 12 feet in height of Class IV commodity [Rack storage ≤10 feet]	0.20	1950 Dry pipe system	250
	Document / Archive storage, file storage, shelf storage up to 12 feet in height of a Class IV commodity	0.20	1500	250

CLEAN AGENT EXTINGUISHING SYSTEM

Extinguishing Agent: NOVEC 1230

Minimum Design Concentration: 4.2 percent by volume (Class A fires) @ ambient temperature.

Maximum time to Reach Concentration: 10 seconds.

PLUMBING SYSTEMS DESCRIPTION

SUSTAINABLE DESIGN

Sustainable design is becoming integrated into building design with the increased awareness and demand by government, public and private companies. There is a broad range of sustainable approaches to reduce water, increase energy efficiency and design for human health that maximize both economic and environmental performance. The Leadership in Energy and Environmental Design (LEED) green building certification program developed by the U.S. Green Building Council (USGBC) provides a matrix for these sustainable design measures.

The project is pursuing LEED for New Construction (LEED-NC) version 3, 2009 Edition. The following LEED prerequisites and credits are directly affected by the plumbing design.

It is anticipated that all of these prerequisites and credits will be pursued.

- **WEp1, Water Use Reduction.** The amount of water used within the building is reduced by a minimum of 20% over a baseline established by the LEED rating system. This reduction in water use is achieved through a combination of design strategies which include low-flow fixtures which include the following:
  - Commercial toilets 1.28 gpf
  - Commercial urinals 0.125 gpf
  - Commercial lavatory faucets 0.5 gpm with auto-sensors
  - Commercial pre-rinse spray valves 1.6 gpm maximum
  - Residential toilets 1.28 gpf
  - Residential lavatory faucets 1.5 gpm
  - Residential kitchen faucets 1.8 gpm
  - Residential showerheads 1.75 gpm
- **WEc3, Water Use Reduction.** The amount of water used within the building is reduced even further than the prerequisite requirement of 20%. Approximately 35% water use reduction is achieved through a combination of design strategies which include low-flow fixtures listed in WEp1.
- **EAp2, Minimum Energy Performance.** The plumbing engineer will design the building to comply with the Mandatory Provisions in section 7.4, Service Water Heating of ASHRAE Standard 90.1-2007.

SITE UTILITY DISTRIBUTION

The site piping systems for potable water, sanitary sewer, storm sewer and natural gas will be extended into the building.

Potable water for the new complex will connect to the site domestic water main. The water service will extend into the new building at the Central Utility Plant. The water source shall have the ability to meet flow requirements outlined in this document.

The sanitary sewer from the new building will drain by gravity to the site sanitary network.

The storm water from the new building will drain by gravity to the site storm drainage network.

Natural gas will be extended to the building by the utility company. A new meter and regulator assembly will be provided

POTABLE COLD WATER SYSTEMS

Distribution System

An 8" potable cold water service will be extended to the building main mechanical room. Water will flow through a water meter assembly approved by the State of New York. Duplex 6" backflow preventers will be provided on the incoming water service to protect the site distribution main. The water service will then split into Hotel and Casino delivery systems.

The Hotel water system will then be piped through a triplex vertical turbine pressure booster system. Each pump shall be rated at 150 gpm, 140 ft of head. The distribution will be divided into two pressure zones. Hotel Zone No.1 will support levels 1 thru 7. Hotel Zone No.2 will support levels 8 thru 14. Potable water piping will be sized to maintain a minimum pressure of 35 to 40 psig at the furthest flush valve or shower.

The Casino water distribution will consist of cold water, hot water and hot water return piping distributed at basement level to pipe shafts. Piping will rise in the shafts up to levels 1 and 2. From there piping will be distributed horizontally at the ceiling of each level.

Potable cold water will be supplied to water closets, lavatories, urinals, showers, electric water coolers, mop receptors, sinks and domestic use equipment, employee locker rooms, and food service equipment in kitchen and service bar areas.

Hose bibbs will be provided in all public bathrooms and mechanical rooms. Non-freeze type wall hydrants will be installed at all entrance areas, the Porte Cochere, exterior terraces and the loading dock.

Valved and capped connections from the domestic cold water system will be provided for future facility tenants: 2" connections for all independently operated restaurants and 1 1/4" connections for retail tenants. If required by the Owner's lease standards, water meters will be installed by the Restaurant and Retail Tenants at connection points to the building water distribution system within the Tenant's space. All water meter will be connected to BMS.

Duplex 3 inch reduced pressure backflow preventer and meter will be provided in the Central Utility Plant for HVAC make-up water system to the cooling towers.

A 2 inch reduced pressure backflow preventer and meter will be installed for the exterior irrigation system.

POTABLE HOT WATER SYSTEM

Hot Water Generation

Potable hot water for the complex will be generated with the use of natural gas fire equipment. Four (4) generation systems are proposed as follows:

- Hotel Zone No.1 water heating system [High Zone]
- Hotel Zone No.2 water heating system [Low Zone]
- Casino and Grand Ballroom water heating system
- Laundry water heating system

Each hot water generation system will be equipped by duplex gas fired storage type hot water generators. The actual capacity of the generators will be based on the system demand and projected usage profile. Each heater shall be sized to provide 70% of the design capacity to allow for system maintenance.

- Hotel Zone No.1 water heating system shall consist of two gas fire heaters, 500 gallons storage, 2500 gallons per hour recovery each heater.
- Hotel Zone No.2 water heating system shall consist of two gas fire heaters, 500 gallons storage, 1500 gallons per hour recovery each heater.
- Podium water heating system shall consist of two gas fire heaters, 500 gallons storage, 2500 gallons per hour recovery each heater.
- Laundry water heating system shall consist of two gas fire heaters, 500 gallons storage, 750 gallons per hour recovery each heater.

All hot water generators will be located in the central utility plant. The potable hot water systems will be provided with complete supply and return piping systems and will be circulated by duplex alternating in-line centrifugal pumps to maintain temperature. Hot water for the hotel and podium will be generated and stored at 140 degrees F. Hot water for laundry will generated and stored at 160 degrees F.

Distribution System

120°F hot water will be supplied to countertop sinks, lavatories, showers, mop receptors, hand sinks, sinks and other specific equipment where required. Thermostatic mixing valves will be provided at all public lavatories and hand basins, where public has access to reduce the water temperature to 110°F.

140°F hot water will be distributed to the kitchen fixtures and equipment requiring this service. Provisions for supplying water at higher temperatures for individual pieces of equipment shall be provided by dedicated electric boosters that will be supplied with the equipment.

160°F hot water will be distributed to the laundry equipment requiring this service.

The domestic hot water system within the Hotel Tower distribution zone will be provided in a manner similar to the domestic cold water system. The hot water distribution system within the Hotel Tower will be provided with hot water recirculation loops and duplex sets of alternating in-line circulation pumps to maintain hot water temperature. Hot water circulation pumps will be located near water heaters.

STORM DRAINAGE SYSTEM

Distribution System

Storm water drainage system will be provided to convey storm water from the Hotel and Podium roof drains, area drains and all clean waste to the site storm sewer system. It is anticipated that seven (7), 12 inch outfalls are required to drain the hotel and casino roof areas, while two (2), 12 inch outfalls are required for the parking structure.

Rainwater leaders will run at the top floor to pipe chases and will be piped separately from other interior waste systems. Where possible, all storm water will be collected into a gravity main which will exit the building and connect to the site storm sewer system. The basement level area drains will drain to a storm sump equipped with duplex 100 gpm pumps, each sized at 100% of capacity. Pumps will be connected to the building emergency or standby power system.

A secondary system will be provided to control storm water ponding on the roof in the event that the primary system or portions of the primary drainage system becomes disabled. The such system will be completely independent of the primary system and will drain to daylight.

Horizontal aboveground storm drainage piping will be insulated to prevent the formation of condensation. Piping exposed to freezing conditions will be insulated and electrically heat traced.

WASTE SYSTEMS

Distribution System

A conventional (two pipe) interior waste collection systems will be provided for both the hotel and podium drainage systems. A hard piped sanitary waste and vent system will service plumbing fixtures in hotel toilet rooms, public toilet rooms and employee locker rooms, hand washing sinks in kitchen and service bar areas, floor drains in toilet rooms, mechanical rooms, and the Central Utility Plant. It is anticipated that six (6), 6 inch wastewater outfalls will exist the complex in various locations.

All sanitary drainage, waste and vent piping will be located either below floor slabs, above ceilings, in pipe chases, or in wall cavities as required. Complete accessibility will be available to all cleanouts in the piping system. Where possible, all sanitary waste will be collected into a gravity main which will exit the building and connect to the site sanitary sewer system. The basement level and other building portions that cannot drain to the site sewer system by gravity will drain to a sewage ejector equipped with duplex pumps, each sized at 100% of capacity. Each pump capacity shall be 100 gpm at 50 ft of head. Pumps will be connected to the building emergency or standby power system.

Drain outlets from the kitchen sinks, drains and equipment shall discharge to two (2) exterior grease traps. Each exterior grease trap shall have a storage capacity of 20,000 gallons. Additional grease traps may have to be provided at certain fixtures in accordance with DEP guidelines. Once the grease has been removed from the waste stream, the waste piping will be connected to the site sanitary system.

An exterior gas/oil interceptor will be provided for floor drains within the loading dock. The 6 inch outfall from the interceptor shall be connected to an exterior sewer system.

NATURAL GAS

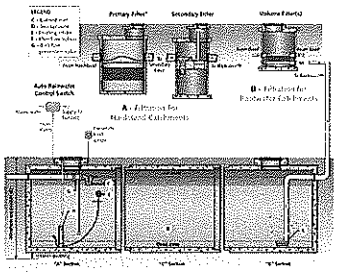
Distribution System

A new gas service will be brought to the building from the site distribution system. A pressure reducing station and meter will be provided by the utility company.

A dedicated 2psi pressure line will serve gas fired mechanical equipment in the central utility plant. A low pressure system (7 to 10" wc) will distributed to restaurant kitchens, main kitchen and domestic hot water generation equipment.

Valved and capped connections will be provided for each independently-operated restaurant. If required by the Owner, gas meters will be installed by the Restaurant Tenants at connection points to the building gas distribution system within the Tenant's space. All gas meters will be connected to BMS to allow for data collection.

RAINWATER HARVEST SYSTEM



A rainwater harvesting system shall intercept, store, treat and distribute precipitation to cooling towers and irrigation systems. Rainwater from rooftops and select paved surfaces shall be collected and transported to exterior below ground storage tank(s). Collected water shall be used only for non-potable water applications. The primary components of a rain water harvest system are as follows:

- -Collection surface
- -Transport piping and pre-filters
- -Primary water storage tank
- -Filtration, pumping and disinfection equipment
- -Distribution piping

The quality of the harvested rainwater is dependent on the type of surface it is collected from and the project location. Water harvested from green roofs, asphalt coated roofs, tar roofs or gravel roofs should be avoided because they contain contaminants that affect the operation of the rain water harvest system and degrade the quality of the collected water.

The primary storage tank(s) shall be installed outside the building and below grade where possible. Multiple tanks may be installed in parallel to permit periodic cleaning, while also keeping the system in operation. The storage system shall be sized to meet the primary objective of the project. The primary objective shall be delivering reclaimed water as makeup to cooling towers and irrigation systems. The tank(s) shall be equipped with inlet ports, overflow ports, maintenance access ports, and ports for controls. The tank(s) must also have a bypass which diverts flow to the storm sewer in the event the collection cistern is full. The location of the tank(s) shall be coordinated with site utilities and allow access for maintenance and repairs. Tanks shall be installed below frost line and shall be structurally anchored to ensure it does not shift during periods when it may be empty, and hydrostatic pressure beneath the tank has built up.

Booster pumps shall be provided in the exterior storage tank(s) to deliver harvested water to the use points at the desired pressure. A disinfection system such as ultraviolet light shall be installed downstream of the booster pumps when water is used for spray irrigation. Final filtration shall also be provided to prevent particulates from entering the distribution system and clogging flushing fixtures and other downstream equipment. Final filtration shall consist of 50 micron disposable cartridge or automatic mechanical strainer filters. Both filters and disinfection equipment will be installed in an underground vault near the cooling towers.

Local codes and ordinances will be consulted, to ensure that all regional requirements are incorporated into the system design.

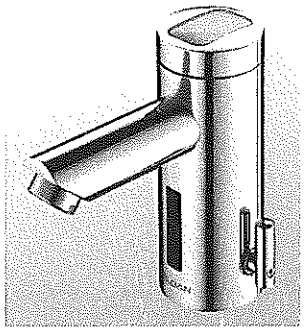
WATER AND ENERGY CONSERVATION

Water Conservation

Plumbing Fixtures

In accordance with the Energy Policy Act of 1992, plumbing fixtures shall be installed using the following maximum volumes of water:

Water closets	1.6 gallons per flush
Urinals	1.0 gallons per flush
Kitchen sinks	2.2 gallons per minute
Lavatory sinks (private)	2.2 gallons per minute
Lavatory sinks (public)	0.5 gpm
Showerheads	2.2 gallons per minute



Solar Powered Faucet

Fixtures are available on the markets that require less water. The following shall be investigated for appropriateness and applicability:

Low flow water closets	1.28 gallons per flush
Dual flush water closets	0.8 and 1.6 gallons per flush
Ultra low flow urinals	0.125 gallons per flush
Kitchen sinks	1.5 gallons per minute
Lavatory sinks (private)	1.5 gallons per minute
Showerheads	1.5-1.8 gallons per minute

Water-Efficient Equipment

- High efficiency dishwashers
- High efficiency cloth washers
- Evaluate water treatment methods to eliminate the volumes of mechanical make-up and blow-down water.

Energy Conservation

Optimize Energy Performance: Plumbing equipment contributes to overall energy use. The following methods may contribute to energy conservation:

- Reduce operating water pressures.
- Install high efficiency motors, pumps, and water heaters
- Design energy-conserving distribution systems
- Extract energy from mechanical equipment to pre-heat the building hot water systems.

PLUMBING FIXTURES AND SPECIALTIES

Water Closet - Vitreous china, commercial quality 1.28 gallons per flush water saver, wall hung siphon jet type with dual flush manual flush valve

Urinals - 0.125 gpf high efficiency, commercial quality wall-hung washout type with manual or battery operated flush valves.

Urinal - waterless, wall hung, commercial quality

Lavatories, Vitreous China, Commercial Quality, countertop or wall hung type units, with 0.5 gpm restricted flow sensor faucets. Barrier free controls for use by people with disabilities.

Service Sinks - Wall-hung, enameled cast iron or stainless steel with hose-end type faucet, complete with vacuum breakers and 3/4 inch hose thread on spout.

Mop Receptors – stainless steel with hose-end type faucet, complete with vacuum breaker and sand trap.

Mop Service Basin – rectangular molded stone basin with chrome plated wall mounted faucet with internal vacuum breaker and 3/4 inch hose thread on spout. The installation shall be completed with stainless steel corner wall guards, mop hanger, hose and hose bracket.

Shower – tiled enclosure with pressure balanced or thermostatic mixing valve and wall mounted shower head with 1.8 gpm flow restrictor. ADA compliant shower additionally shall be provided with grab bars, fold-up seat and hand held shower mounted on 30 inch slide bar.

Showers – Will be specified with restricted flow shower heads, thermostatic balanced pressure type mixing valves, and drains.

Safety Shower/Eyewash - Will be provided in hazardous areas. Water for the safety showers will be supplied from the hot and cold water system. Local mixing valves will be provided at the safety equipment.

Drinking Fountains - Stainless steel wall-hung electric water cooler, barrier free for use by people with disabilities.

Water Hammer Arresters - Will be provided to absorb hydrostatic shock pressure generated by flush valves and other quick closing equipment valves.

Backflow Preventers - Reduced pressure zone, brass construction will be provided as required.

Non-Freeze Wall Hydrants - Will be provided on exterior walls of the building at doorways and wash down areas.

Vacuum Breakers - Will be provided on all lab sinks and cup sinks, service sinks and mop receptors to prevent back siphonage of contaminated water into the domestic water system.

Trap Primers - Automatic drain trap primers will be installed in mechanical rooms and low maintenance areas.

Hose Station (Loading Area) - Brass, hot and cold mixing valve with 50 feet of hose.

PLUMBING DESIGN CRITERIA

CODES AND STANDARDS

The design of all Plumbing and Process systems must comply with the applicable codes and standards established for the project, including local and state building codes, health department codes, as well as owner-designated standards and sustainability guidelines.

Building Code of New York State, 2010 Edition

Plumbing Code of New York State, 2010 Edition

American Gas Association (AGA)

American National Standards Institute (ANSI)

American Society of Mechanical Engineer (ASME)

American Society for Sanitary Engineers (ASSE)

American Society for Testing and Materials (ASTM)

American Welding Society (AWS)

American Water Works Association (AWWA)

ADA Standards for Accessible Design (ADA)

Cast Iron Soil Pipe Institute (CSPI)

Compressed Gas Association (CGA)

Department of Public Health

Department of Environmental Protection (DEP)

National Fire Protection Association (NFPA)

National Sanitation Foundation (NSF)

Occupational Safety and Health Act (OSHA)

Plumbing and Drainage Institute (PDI)

In the absence of specific requirements located in the criteria, systems shall be designed, procured and built in accordance with International Codes, Standards, and Specifications to the extent that they are applicable to the specific type of facilities.

SITE UTILITIES

Water Service

The site water system shall be designed in accordance with the following criteria:

- Maximum velocity shall be 5 feet per second.
- Maximum pressure drop due to friction shall be 1 psi/100 feet.
- Pipe sizing shall be in accordance with Hazen Williams formula.
  - Copper: 130
  - Ductile iron: 140
  - PVC: 150
- Thrust blocks to control thrust forces created in a pipeline.
- Test system at a hydrostatic pressure of 150 pounds per square inch for one hour.
- Disinfection of the piping shall comply with AWWA Standard C601, Disinfection of Water Mains, of latest revision.
- Flushing shall be at a sufficient rate to produce a minimum velocity of 2.5 feet per second in the main.
- Chlorine for disinfection shall be applied and maintained at a minimum of 50 mg/l available chlorine.

Sanitary Waste

Pipes shall be sufficient sized to handle the total design flow from the proposed building including the future addition. The site sanitary systems shall be designed in accordance with the following criteria:

- Minimum velocity of 2 feet per second
- Maximum velocity of 10 feet per second.
- Main sewers and branches shall be designed with sewers flowing 2/3 full.
- The minimum allowed pipe size is 8 inch inside diameter.
- Manholes shall not be placed more than 400 feet apart.
- Install manholes at junction of lines, changes in direction and horizontal alignment.
- Test system in accordance with state and local requirements.

Storm Drainage

Pipes shall be sufficient sized to handle the total design flow from the current building and paved areas including the future building addition. The site storm water systems shall be designed in accordance with the following criteria:

- Minimum velocity of 3 feet per second
- Maximum velocity of 14 feet per second.
- Minimum pipe size shall be 12 inch inside diameter.
- Manholes shall not be placed more than 400 feet apart.
- Install manholes at junction of lines, changes in direction and horizontal alignment.

- Debris and sediment basins.

Test system in accordance with state and local requirements.

BUILDING SYSTEMS

Storm Drainage System

Storm water will be designed in accordance with the following criteria:

Primary Storm Water System

- Intensity: 2.8 inches/hour
- Duration: 60 minutes
- Return Period: 100 years
- Velocity: 3 ft/sec minimum

Secondary Storm Water System

- Intensity: 2.8 inches/hour
- Duration: 15 minutes
- Return Period: TBD-years
- Velocity: 3 ft/sec minimum

Domestic Cold Water

Domestic cold water will be designed in accordance with the following criteria:

- Min. Design Pressure: 30 psi residual pressure at top remote flush valve
- Max. Design Pressure: 80 psi residual pressure to any plumbing fixture
- Fluid Velocity: 5-7 feet per second
- Pressure Loss: 2-4 psi per 100 ft due to friction
- Water Quality: Potable as delivered by the Utility Company

Domestic Hot Water

Domestic hot water will be designed in accordance with the following criteria:

- Min. Design Pressure: 30 psi residual pressure at top most remote faucet
- Max. Design Pressure: 80 psi residual pressure to any plumbing fixture
- Fluid Velocity: 5-7 feet per second
- Pressure Loss: 2-4 psi per 100 ft due to friction
- Water Quality: Potable as delivered by the Utility Company
- Temperature: 120°F at each fixture or piece of equipment

Natural Gas

Natural gas will be designed in accordance with the following criteria:

- Design Pressure: 2psi at space heating boilers, 7-10 inch WC at water heating and kitchen equipment
- Fluid Velocity: 4000 feet per minute
- Pressure Loss: 0.3 inches water column for entire system due to friction
- Design Flow: Varies

REDUNDANCY, RELIABILITY, AND FUTURE EXPANSION CRITERIA

Each system must be provided with a level of redundancy. The following criteria have been applied to this design:

- Water service: One
- Water heaters: N+1
- Hot water circulators: N+1

UTILITY LOADS AND USAGES (ESTIMATES)

Water Use System	Gallons Per Day
Domestic Water	151,000
Mechanical Makeup	200,000
Irrigation	6,000
Other	
TOTAL	357,000

Waste Water System	Gallons Per Day
Sanitary Waste	110,000
Kitchen Waste	41,000
Cooling Tower Blowdown	49,000
TOTAL	200,000

Natural Gas	Cubic Feet per Hour
Building Heating Load	26,700
Service Hot Water Load	12,000
Kitchen Load	6,300
Laundry Load	600
Other	
TOTAL	45,600

HVAC SYSTEMS DESCRIPTION

HVAC SCOPE SUMMARY

HVAC scope will include:

- Central chilled water cooling plant including chillers, controls, pumps, piping, refrigerant purge system, water side economizer, water treatment, refrigerant detection and purge system etc.
- Condenser water system to serve the chiller plant including outdoor open cell type cooling towers, controls, piping, pumps, filtration, water treatment, etc.
- Central boiler plant including condensing boilers, controls, pumps, piping, and water treatment
- Cooling tower condenser heat recovery systems, plate and frame heat exchangers and domestic water distribution
- Complete air distribution system including multiple indoor and/or rooftop central station air handling units with pre and final filters, hot water heating coils, chilled water cooling coils, supply and return fans (with VFDs), and airside economizer sections. Air shall be distributed via medium and low pressure ductwork, variable air volume boxes with terminal hot water heating coils, flow measuring stations, diffusers, registers, grilles, splitters, dampers, sound attenuators, etc.
- A complete return air system including low pressure ductwork, dampers, registers, grilles, etc. Return air systems shall be a combination of plenum return and/or direct ducted return.
- Toilet and general exhaust systems including exhaust fans, ductwork, and exhaust grilles.
- Shower and locker area exhaust systems including exhaust fans, stainless steel or aluminum ductwork and grilles.
- Dishwasher unit hood exhaust systems, including exhaust fans and stainless steel ductwork.
- Carbon Monoxide detection and exhaust systems shall be employed as required in the parking structure and loading dock.
- Grease duct exhaust systems for kitchen hoods including black iron welded ductwork, access doors and high temperature insulation (fire rated chases).
- Sound attenuators on ductwork mains (supply and return).
- Gas fired boiler and domestic water heater breeching and flues.
- Complete automatic DDC temperature control system with all required appurtenances.
- Airflow, air velocity, and water flow stations.
- Insulation for duct and equipment.
- Motors, integral starters and variable frequency drives.
- Vibration isolation for all vibrating and rotating equipment.
- Equipment bases, supports and roof curbs.
- Fan coil units
- Stair pressurization system
- Elevator machine room cooling and ventilation

- MDF/IDF redundant cooling systems.
- Duct and equipment identification.
- Sleeves, inserts, hangers and miscellaneous support steel.
- Cleaning.
- Complete air and water balancing.
- System start-up.
- Commissioning.
- Instruction manuals, start-up instructions and on-site training.

LEED REQUIREMENTS

The HVAC system shall be designed and installed to meet the LEED requirements for the project. The building envelope and building systems shall be designed for improved energy performance. The project shall achieve increasing levels of energy performance above the prerequisite standard to reduce environmental impacts associated with excessive energy use.

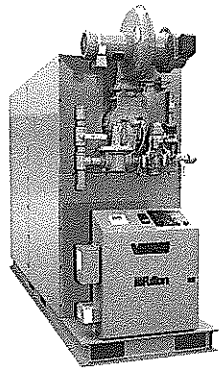
HOT WATER SYSTEM

Preliminary Loads

Casino:	11,600 MBH
Hotel:	6,610 MBH
Convention:	1,410 MBH
Food and Beverage:	1412 MBH
Club Venue:	221 MBH
Entertainment:	525 MBH
Fitness:	180 MBH
MEP:	450 MBH
Total	22,400 MBH

Equipment: (5) 5,600 MBH Condensing Boilers (N+1)
(3) 70 HP Variable speed water pumps (N+1)

The hot water heating system shall be provided via gas fired condensing boiler plant, consisting of **five** (5) 5,600 MBH (input capacity) water boilers and associated hydraulic components. The heating plant is designed to have up to three boilers online with one standby. The boiler capacity is based on the ASHRAE 99.6 percent design winter day.



Condensing Boiler

Condensing boilers allow the combustion air to remain longer in the heat exchanger allowing boilers at certain conditions to achieve up to 97 percent efficiency. Condensing boilers operate at lower water temperatures which allow additional latent heat to be extracted from the flue gases and results in water condensing within the combustion chamber and flue. The condensate needs to be collected and neutralized prior to sewer discharge due to the high acidity of the condensate.

The flue material shall be Al-29-4C to ensure longevity against corrosion. The boilers shall all be direct vented for combustion and exhaust air. Boiler manufacturer control package with be BACNET The boiler system shall be a variable primary system with two hot water pumps in parallel and one pump standby; expansion tanks; chemical treatment system; combustion air and relief air systems; automated controls; boiler breaching; and distribution piping. The boilers shall be low NOx emission conforming to state and local codes.

Hot water shall be distributed via a main piping loop connecting each building within the proposed complex. The system shall consist of a variable primary piping system. The speed of the pumps shall be controlled by variable frequency drives (VFD), one drive for each pump. These pumps shall serve as the means to convey heating hot water to the individual buildings.

- Hot water pumps shall be variable speed and shall circulate water through the piping distribution system to the loads. Differential pressure sensors (DPS) in the hot water supply piping mains shall control the variable speed pumps to maintain required pressure at the farthest independent control valves. Multiple DPS located at the ends of two piping branches shall provide an input to the BAS for control of the adjustable speed controllers. The lowest value shall govern the pump speed.
- The hot water heating system shall be designed for a 40° F temperature difference between the supply and return (150°F HWS and 110°F HWR) to reduce pipe and pump sizes and pump HP requirements.
- Hot water heating loads shall include air handling units, how water radiators, fan coil units and terminal boxes serving the casino, convention, hotel, multi-purpose, restaurants, retail spaces, offices, lobbies, circulation, back-of-house areas, and service areas.

All control valves shall be pressure independent, factory fabricated, of type, body material, and pressure class based on maximum pressure and temperature rating of piping system. The valve shall have an equal percentage characteristic and shall accurately control the flow from 0 to 100 percent full rated flow. A minimum of 5 psi shall be required to operate the valve pressure independently.

CENTRAL CHILLED WATER PLANT

It is recommended that a diversity factor be applied to the peak connected load, to take advantage of the diverse program served by the chiller plant. A 80-90 percent diversity factor is appropriate. The owner should review and approve this diversity and the associated chiller plant sizing. The current chiller sizes presented below do not take a diversity factor into account and are based on the building block loads.

Preliminary Load

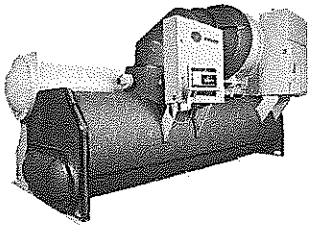
Casino =	1,105 Tons
Hotel =	521 Tons
Convention =	170 Tons
Food and Beverage =	300 Tons
Club Venue =	50 Tons
Entertainment =	54 Tons
Fitness =	40 Tons
MEP =	20 Tons
Total =	2,260 Tons

Equipment: (3) 1,130 Ton water cooled chillers for N+1 Redundancy, with unit mounted VFDs

(3) 100 HP Chilled water pumps (N+1)

(2) Plate and frame heat exchangers for water side economizer and associated condenser water pumps (N+1)

The building shall be provided chilled water via a central chiller plant. The chiller plant capacity is based on an overall estimated block load and as the design progresses this capacity shall be adjusted accordingly via an owner agreed to diversity factor. The estimated capacity of the chiller plant is 2,260 Tons (**without diversity**).



Water Cooled Chiller

Cooling for the facility incorporates three (3) high efficiency chillers where two (2) are online with one (1) back-up providing N+1 redundancy. Chillers are provided with unit or remote mounted variable frequency drives. The variable frequency drives provide capacity control and higher part load efficiencies than standard solid state starters. The chiller plant direct digital control (DDC) system shall monitor the plants overall energy input/output calculate the most efficient staging of the chillers/towers based on the building load profile.

The chillers are selected based on a minimum 0.536 KW/ton full load condition and IPLV of 0.334 KW/ton to meet the International Energy Conservation Code/ASHRAE 90.1

The complex is comprised of casino gaming, convention, food beverage, retail/bars/clubs, entertainment venue, fitness, and Hotel. The buildings are served by the central chilled water plant for cooling and dehumidification. The central chilled water piping mains shall be routed internally from the chiller room to each building zone.

- The system shall be variable primary with three (3) chilled water pumps and a common piping header, where two (2) are online and one (1) being the back-up providing N+1 redundancy.
- Chilled water pumps shall be variable speed and shall circulate water through the piping distribution system to the loads. Differential pressure sensors (DPS) in the chilled water supply lines shall control the variable speed pumps to maintain required pressure at the farthest independent control valves. Multiple DPS located at the ends of two control of the adjustable speed controllers.
- The chilled water cooling system shall be designed for a 14°F temperature difference between the supply and return (44°F CHWS and 58°F CHWR) to reduce pipe and pump sizes and pump motor/energy requirements.
- The chiller plant shall be provided with a ventilation system and a refrigerant monitoring system. The ventilation system shall consist of a makeup air and an emergency purge exhaust system. The ventilation system shall be activated to ventilate the mechanical room in the event of a refrigerant leak. The refrigerant monitoring system and ventilation system shall comply with ASHRAE Standard 15 Safety Code for Mechanical Refrigeration.

Chilled water cooling loads shall include air handling units and fan coil units serving the casino, arena, hotel, restaurants, retail spaces, offices, lobbies, circulation, back-of-house areas, and service areas.

All control valves shall be pressure independent, with the body material, and pressure class based on maximum pressure and temperature rating of piping system. The valve shall have an equal percentage characteristic and shall accurately control the flow from 0 to 100 percent full rated flow. A minimum of 5 psi shall be required to operate the valve pressure independently.

CHILLER PLANT CONDENSER WATER SYSTEM

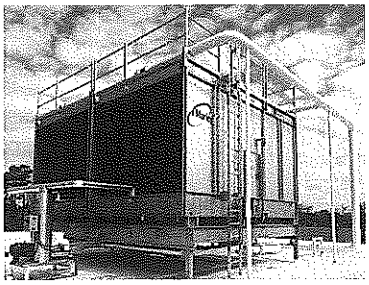
Preliminary Load: 2,260 Ton

Equipment (4) 753 Ton open cell cooling towers (N+1)

(3) 125 HP Condenser water pumps (N+1)

(2) Plate and frame heat exchanger for condenser water energy recovery "*domestic hot water*" preconditioning and winter cooling load.

Four (753 ton nominal/tower) open circuit cooling towers shall be located remotely from the chiller plant on the steel dunnage. Each cooling tower fan shall be provided with a dedicated variable frequency drive. All towers shall be active to allow increased heat transfer. Towers shall be sized to allow free-cooling based on the winter time load profile of non-airside economizer systems. Towers are not assigned to any specific chiller, yet rather manifolded together. Each tower basin shall be equipped with basin heaters for freeze protection.



Open Cell Cooling Tower

Three condenser water pumps operating in parallel shall be utilized with the third pump on stand-by. These pumps, which are located within the central plant, shall be constant speed, horizontal split case pumps that circulate condenser water through a single piping system. All pump accessories and valves shall be schedule 80.

The condenser water system shall be designed for a 10°F temperature difference between supply and return (85°F CWS and 95°F CWR).

The primary condenser water loop shall include (1) plate and frame heat exchanger, sized for the winter cooling loads (*to be determined*).

The current energy code requires heat recovery from the condenser side of water-cooled systems for preheating service hot water in large 24-hour operating facilities. To meet the intent of this requirement, a dedicated plate frame heat exchanger is located in the return condenser water side to provide energy transfer to the domestic water side to serve the domestic hot water system. Since a minimum of 85 F service water during peak conditions is required to meet the intent of the standard, the system must produce leaving condenser water temperatures slightly above 85 F. The domestic water system shall distribute two lines from the central utility plant; one the cold water main and the other the pre-heated water to serve the domestic hot water system. The preheated water shall be distributed to the remote mounted domestic hot water heaters in each building complex.

CASINO AIRSIDE SYSTEMS

Load: Casino - 350,000 CFM

Casino Support - 16,600 CFM

The estimated air handler unit quantities and sizes are based on the current mechanical room sizes (in progress) and the estimated loads at this project phase. As the design progresses the quantity and the capacity of the units shall be reviewed and adjusted.

Casino areas consist of high limit slots, plus associated gaming and poker rooms. Two casino airside concepts for review are included as part of this Schematic Design basis of design.

The concept #1 is based on energy recovery units which is required by code per New York State Energy Code since the calculated outside air rate exceeds 70 percent of the supply to the space, this is due to the New York State Mechanical code which is referencing the IMC 2006 code ventilation rates, for option #2 a variance will be required which we feel is feasible based on the latest ventilation codes which have been excepted throughout the US - we recommend this option be considered.

CASINO AIR HANDLER UNIT CONCEPT #1

The Casino shall be provided with conditioned air from multiple energy recovery air handling units. The energy recovery wheel shall be sized based on minimum outside air flow rate and unit shall be sized to meet the total calculated air-flow rates with full low pressure drop bypass of the wheels at minimum pressure drop.

Equipment: Casino - (11) 30,000 CFM - Energy Recovery Air Handler serving casino spaces with unit mounted VFDs.

Casino Support - (2) 8,300 CFM Standard modular Air Handler serving casino support spaces with unit mounted VFDs

The air handling energy recovery units shall provide conditioned air to the casino. The indoor units shall include energy recovery units consisting of the following components: Supply air stream - intake outside air intake section, MERV-7 filter, total energy wheel with 100 percent low pressure drop bypass assembly (around wheel), mixing section (return air and outside air), heating coil, chilled water coil, supply fan. The return/exhaust section consists of return fan, MERV-7 filter, mixing section to the return path to the supply air stream or the exhaust air stream through the wheel, total energy wheel and exhaust section. The unit is configured with a total energy wheel which is sized for the minimum code ventilation and a complete bypass section around the wheel assemble at low pressure drop to allow efficient energy transfer and when in economizer minimum pressure drop around the wheel.

The exhaust and bypass air dampers shall be sized for 100 percent damper configuration for economizer mode. The enthalpy wheel for the unit shall be sized for the amount of the minimum outside air per Code.

As an alternative to a conventional supply and return fan, fan array can be specified as an alternative. Fan array consists of multiple, smaller fans, as opposed to one single fan. This arrangement would add a level of redundancy as the unit can still be operational at a high percentage of full capacity if one fan fails. Other fan wall benefits include higher energy efficiency through optimized motor and fan control as well as quiet operation which eliminate the need for sound attenuators on the supply and return.

The energy recovery units provide energy saving benefits, dehumidification and free humidification of the space during winter months. Based on similar projects 10 percent reduction on the chiller plant capacity and 25 percent reduction on the heating plant capacity would be expected. Once the base option is selected further development of the calculations will be produced.

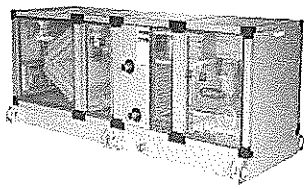
CASINO AIR HANDLER UNIT CONCEPT #2 (REQUIRES A CODE VARIANCE)

The system shall be configured with standard air handler units with 100 percent economizer capacity

Equipment: Casino - (11) 30,000 CFM Standard Air Handler serving casino spaces with unit mounted VFDs.

Casino Support - (2) 8,300 CFM Standard modular Air Handler serving casino support spaces with unit mounted VFDs

The air handling units shall consist of the following components: return fan with variable frequency drives, exhaust section, outside air intake, MERV 7 and MERV 13 filters, mixing blender, heating coil, chilled water coil and supply air fan with variable frequency drives. All systems shall have outdoor air economizer cycle to conserve energy whenever outside air conditions are favorable.



Indoor Air Handling Unit

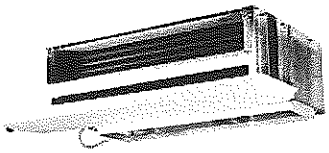
As an alternative to a conventional supply and return fan, fan array can be specified as an alternative. Fan array consists of multiple, smaller fans, as opposed to one single fan. This arrangement would add a level of redundancy as the unit can still be operational at a high percentage of full capacity if one fan fails. Other fan wall benefits include higher energy efficiency through optimized motor and fan control as well as quiet operation which eliminate the need for sound attenuators on the supply and return.

CASINO AIR DISTRIBUTION

Two (2) concepts for space level air distribution have been developed for the schematic design.

Concept #1 – Distributed VAV Control

Supply air shall be delivered from the units through medium pressure ductwork to pressure independent air terminal boxes. Air terminal units shall be variable volume type as determined by the final scheduled. The air terminal units shall be provided with DDC controls, space temperature sensors and sound attenuators (where necessary). The air distribution from the terminal boxes will be delivered through low-pressure ductwork to supply air outlets. Exhaust air and/or return air shall be through ceiling return air plenum. This scheme provides more controllability of the space temperature, air flow rates and space air distribution.



Horizontal Fan Coil

The design team will analyze select major zones served by the VAV terminal box to provide the ventilation effectiveness required to maintain the comfort level at the occupied zone. This will involve computational fluid dynamic (CFD)

studies of typical zones to allow the engineer to properly determine the minimum airflow of the box during low flow conditions based on the space conditions. Supply air temperature reset control and dehumidification measures based on the monitoring from the space mounted temperature and humidity sensors will be utilized to optimize performance.

Concept #2 – Low Pressure Zone Control

Central air handler units will be selected and provide conditioned air to specific zones on the casino floor. Supply air will be delivered from the units through low pressure ductwork to supply air outlets. The zone shall be furnished with multiple wall mounted temperature sensors that will be averaged out to vary the air-flow and temperature off the central unit serving this zone. This concept uses the central air handler as a large VAV box serving an entire zone and eliminates the requirement for terminal units (VAV boxes) and associated controls. Exhaust air and/or return air will be through ceiling exhaust/return air plenum. This scheme provides a lower first cost, less maintenance required (access to VAV boxes), but will not have the same level of controllability as with individual VAV boxes and air balancing issues shall be inherent.

For both concepts #1 and #2, to maintain the indoor design criteria with a constant minimum volume system during periods of weather with moderate outdoor dry bulb temperatures but with high relative humidity (mild/rainy), it is necessary to continue to cool the air from the AHU down to the range of the design temperature of 55 degree F saturated to remove the moisture load and then to reheat the air to a higher temperature to prevent overcooling the space.

CASINO SUPPORT AREAS

These air handling units shall consist of the following components: exhaust/return fan, exhaust section, outside air intake section, MERV 7 and MERV 13 filters, mixing blender, hot water coil, chilled water cooling coil, and supply air fan. The units shall be sequenced for variable volume flow and provided with variable frequency drives.

Air distribution shall be based on medium pressure ductwork distribution from the central air handler units to space level variable air volume boxes with or without reheat coils. Downstream of the VAV boxes low pressure ductwork to ceiling mounted diffusers.

Based on the program level plans, we have accounted for four AHU units, these units can be combined once we have finalized floor plans to allow the understanding of the location of each of the identified spaces.

Equipment:	Casino Support - (2) 20,750 CFM Standard Air Handler serving casino spaces with unit mounted VFDs.

CASINO AMENITIES AREAS

These air handling units shall consist of the following components: exhaust/return fan, exhaust section, outside air intake section, MERV 7 and MERV 13 filters, mixing blender, hot water coil, chilled water cooling coil, and supply air fan. The units shall be sequenced for variable volume flow and provided with variable frequency drives.

Air distribution shall be based on medium pressure ductwork distribution from the central air handler units to space level variable air volume boxes with or without reheat coils. Downstream of the VAV boxes low pressure ductwork to ceiling mounted diffusers.

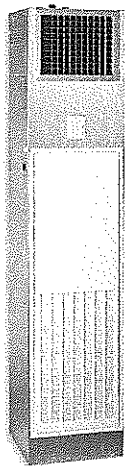
Based on the program level plans, we have accounted for four AHU units, these units can be combined once we have finalized floor plans to allow the understanding of the location of each of the identified spaces.

Equipment: Casino Support - (2) 12,000 CFM Standard Air Handler serving casino spaces with unit mounted VFDs.

HOTEL SYSTEMS

Hotel Tower and Support Spaces

The hotel rooms and hotel back of house shall be served from central variable volume energy recovery air handling units which provides conditioned air to the room level fan coil units.



Vertical Fan Coil Unit

Hotel Ventilation Load: 18,000 CFM

Equipment: (2) 9,000 CFM energy recovery unit serving Hotel rooms and support spaces with unit mounted VFDs.

The hotel ventilation system shall consist of two dedicated 100 percent make-up air units serving the ventilation requirements for the guest rooms, corridors and fitness center. The guest room toilets and shower/tube area shall be connected to a central toilet exhaust system which shall be tied to the energy recovery unit.

The energy recovery units shall consist of the following components: outside air intake section, MERV 7 and MERV 13 filters, chilled water cooling coil, face/bypass (wing coil) hot water heating coil and supply air fan. The energy recovery units' serving the hotel guest rooms shall also be equipped with a heat recovery wheel. The process of dehumidification of the outside air to meet the space dew-point shall be accomplished through chilled water coil or desiccant wheel mounted within the unit. All units shall be constant volume and sized based on ventilation Code.

50 CFM shall be supplied to each standard hotel room through low pressure duct risers and then ducted to either the fan coil unit or to a supply grille. A proportional amount shall be supplied to larger suites.

Corridors shall be supplied 0.05 cfm/sf of conditioned outside air through the MAUs.

The make-up units shall be zoned to serve a dedicated system of low pressure, sheet-metal risers that shall distribute make up air to the hotel rooms. Fire and fire/smoke dampers shall be installed within the duct system as required by building code.

The hotel guest room bathrooms shall be exhausted though central vertical exhaust risers extending from the low level to the high level mechanical. The exhaust risers shall be manifolded to one common header at the mechanical room, combining the toilet exhaust and corridor exhaust air. Each guest room bathroom shall be exhausted at a constant rate of 40 CFM.

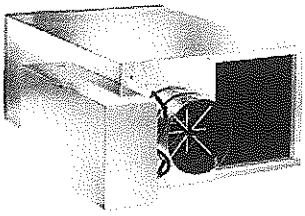
For each guest toilet room duct connection to the vertical exhaust riser (through a rated shaft) provisions shall be made to make the connection with a 22" sub-duct shall be eliminate the need to provide combination smoke/fire dampers at each shaft penetration.

The support spaces, corridors, utility rooms, maid services will be served off the hotel energy recovery unit to provide code minimum ventilation.

Hotel Guest Room Fan Coil Units

Each hotel guestroom and suite shall be served by a vertical 4 pipe fan coil unit with secondary drain condensate drain pan. The vertical fan coil units will be equipped with an ECM motor and hot and chilled water will be distributed using vertical risers located in a chase adjacent to the vertical fan coil unit. Vertical fan coil units are located within room. Access for service to the fan coil unit is typically done room side, through the return air grille.

As an alternative, horizontal 4 pipe fan coil units can be used for heating and cooling of the hotel guest rooms. Each hotel guestroom and suite shall be served by a horizontal 4 pipe fan coil unit with secondary drain condensate drain pan. Each FCU shall be equipped with an ECM motor. Hot and chilled water shall be distributed using vertical risers located in chases. The horizontal fan coil will be located above the ceiling, either in the main entry way or above the bathroom. This type of fan coil unit will require access from the room in order to service the fan coil unit.



Air Terminal Unit

Hotel Corridor Fan Coil System

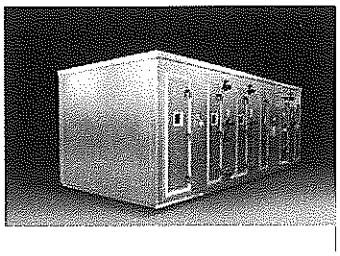
The hotel corridors shall be conditioned with limited quantity (i.e. 2 or 3) vertical fan coil units which ECM motors to condition each floor's corridor.

Hotel Guest Room Control System

The guest rooms shall be provided with a energy management and comfort control system. The system shall incorporate the AC control and lighting control. Access control, occupancy detection, mini bar access reporting, and guest services communications can be provided if desired by the owner.

The guest room control system has two monitoring options, central energy monitoring system and a standalone room level control package. The basic components of the systems are as follows:

Temperature Control – Wall mounted DDC thermostat with digital LED display shall monitor/display the space temperature and control the ceiling mounted fan coil unit. The EMC motor in conjunction with the room controller shall provide variable air-flow and temperature control, this control function shall provide room dehumidification and reduced energy consumption.



Indoor Air Handling

The central DDC energy management option will provide monitoring and control through a central network and operators workstation. The monitoring shall include the specified features listed above, data collection, monitoring of the occupancy, energy management control by adjusting the shading devices, adjusting the room temperatures and fan speed during non-occupied hours and pre-cooling before check-in time, security monitoring (door access, door ajar, panic alarm) and mini-bar inventory monitoring.

The standalone option will provide all the specified features but will not be monitored or controlled through a central operator's station.

Spa Areas

The spa areas shall be supplied from 100 percent outside air from central air handling units serving the hotel.

The spa areas shall be served by multiple horizontal 4 pipe fan coil units with secondary drain condensate drain pan. Each fan coil unit shall be equipped with an ECM motor.

Ventilation air will be distributed through low pressure duct work based on IMC 2009.

Exhaust fans shall be provided in the spa where any manicure/pedicure stations are located to better control any harsh fumes and/or odors.

Hotel Ice Machine

The ice machine rooms on each floor shall be water cooled units, fed by the building chilled water system. A chilled water riser shall be run up and down the building to all the ice rooms.

Alterative us standard air cooled compressor assemblies, this additional heat rejection load within the hotel corridors would be services by the corridor vertical fan coil units.

POOL EQUIPMENT ROOM(S)

Two pipe, chilled water, fan coil units shall be provided within each pool room to condition setpoint to 80°F. In-line exhaust fans shall be provided to ventilate the room.

POOL SUPPORT AREA

The pool support area will be heated and cooled with ceiling mounted, four pipe horizontal fan coil units. These units will be provided chilled and hot water from the level 1 mechanical room. The horizontal fan coil units will deliver air through a ducted air distribution system to ceiling diffusers. Makeup air will delivered

POOL DEHUMIDIFICATION / HEAT RECOVERY SYSTEM

To condition the pool, a packaged dehumidification systems consisting of split air or water-cooled direct-expansion (DX) air conditioning units shall be provided.

Where dehumidification units use water-cooled condensers, chilled water pumped bleed-injection circuit would be created from the chilled water return. Chilled water return would be mixed with chilled/condenser water unit outlet to maintain, setpoint to minimize plant chilled water usage. This would help maintain a load on the chiller plant and hot use chilled water supply. Where dehumidification units use air-cooled condensers, outdoor mounted units be located, on grade or on available setback roofs for heat rejection (these location will be coordinated with Mohegun Sun).

Each dehumidification system will have a supply fan, evaporator (dehumidifier) coil, condenser (reheat) coil, built in shall and tube heat exchanger for pool water heating, filter, outside air section, return air section, exhaust air section and all required built-in control , control panels, internal piping, valving, etc.

The pool water which is required to be maintained at 80 deg F is automatically circulated through the built-in shell and tube heat exchanger. When the unit is in the dehumidifying node and pool water heating is required, the heat absorbed at the humidifier coil is rejected to the pool water. Excess heat rejection is either used for air-side reheat or is rejected to the chilled water return.

When dehumidification is not required, pool water heating is accomplished via a local steam (or hot water) heat exchanger external to the dehumidification system.

HOTEL AMENITIES

Amenities spaces - Lobby, retail, VIP check-in, business center.

Load: 13,000 CFM

Equipment: (1) 13,000 CFM Air Handler serving Lobby, retail, BOH, with unit mounted VFDs.

The retail and hotel lobby shall be served by a single central air handling unit providing cooling and ventilation air to all spaces in a specified zone. The central air handler unit shall be ducted to the space and connected directly to the space mounted terminal units (VAV boxes) allowing independent temperature control in each space.

The air handling units shall consist of the following components: exhaust/return fan, outside air intake section, return air fan, MERV 7 and MERV 13 filters, mixing blender, chilled water cooling coil, hot water heating coil and supply air fan. The units shall be sequenced for variable volume flow and provided with variable frequency drives.

The terminal boxes shall be located in the ceiling plenum of the corridor adjacent to each space and shall be provided with hot water heating coils. The terminal units shall deliver air to the space through low pressure ductwork and ceiling mounted diffusers. The units shall be located based on the system loads and space programming.

The tenant retail stores shall be provided ventilation air and chilled water/hot water supply and return piping connections from the base building systems. The tenant design of the space air terminal units and connection to the base building systems shall conform to base building standards.

The tenant shall provide horizontal air terminal units sized to handle the cooling loads of each space. In general the air terminal design associated piping and low pressure ductwork distribution for all tenant spaces shall be outside this scope of work.

HOTEL BOH PODIUM

Load: 18,200 CFM

Equipment: (1) 18,200 CFM Air Handler serving BOH office space with unit mounted VFDs.

The BOH offices spaces shall be served by a single central air handling unit providing cooling and ventilation air to all spaces in a specified zone. The central air handler unit shall be ducted to the space and connected directly to the space mounted terminal units (VAV boxes) allowing independent temperature control in each space.

The air handling units shall consist of the following components: exhaust/return fan, outside air intake section, return air fan, MERV 7 and MERV 13 filters, mixing blender, chilled water cooling coil, hot water heating coil and supply air fan. The units shall be sequenced for variable volume flow and provided with variable frequency drives.

The terminal boxes shall be located in the ceiling plenum of the corridor adjacent to each space and shall be provided with hot water heating coils. The terminal units shall deliver air to the space through low pressure ductwork and ceiling mounted diffusers. The units shall be located based on the system loads and space programming.

CONVENTION CENTER

The Convention center consist of meeting rooms, ballrooms, pre-function, circulation spaces, Grand Ballroom venue and BOH spaces.

Load: 94,300 CFM

Equipment: Refer to the below individual unit sizes.

The convention center spaces shall be served by central air handling units providing cooling and ventilation air to all the specified zones. The central air handler unit shall be ducted to the space and connected directly to the space mounted terminal units (VAV boxes) allowing independent temperature control in each space.

Meeting Rooms/Ballroom

Load: 18,000 CFM

Equipment: (2) 9,000 CFM Air Handler serving both spaces with unit mounted VFDs.

These rooms shall be served by one air handling unit, providing cooling and ventilation air to all the meeting rooms in a specified zone. The central air handler unit shall be ducted to the space and connected directly to the space mounted terminal units (VAV boxes) allowing independent temperature control in each space.

The terminal boxes shall be located in the ceiling plenum of the corridor adjacent to each meeting room and shall be provided with hot water heating coils. The terminal units shall deliver air to the space through low pressure ductwork and ceiling mounted diffusers. The units shall be located based on the system loads and space programming.

The three air handling unit concepts presented in the casino portion of this report are also valid for the multi-purpose space.

PRE-FUNCTION AND BOH

Load: 8,800 CFM

Equipment: (1) 5,500 CFM Air Handler serving Pre-function space with unit mounted VFDs.

(1) 3,300 CFM Air Handler serving BOH office spaces with unit mounted VFDs.

The Pre-function and BOH offices spaces shall be served by central air handling unit providing cooling and ventilation air to all spaces in a specified zone. The central air handler unit shall be ducted to the space and connected directly to the space mounted terminal units (VAV boxes) allowing independent temperature control in each space.

The air handling units shall consist of the following components: exhaust/return fan, outside air intake section, return air fan, MERV 7 and MERV 13 filters, mixing blender, chilled water cooling coil, hot water heating coil and supply air fan. The units shall be sequenced for variable volume flow and provided with variable frequency drives.

The terminal boxes shall be located in the ceiling plenum of the corridor adjacent to each space and shall be provided with hot water heating coils. The terminal units shall deliver air to the space through low pressure ductwork and ceiling mounted diffusers. The units shall be located based on the system loads and space programming.

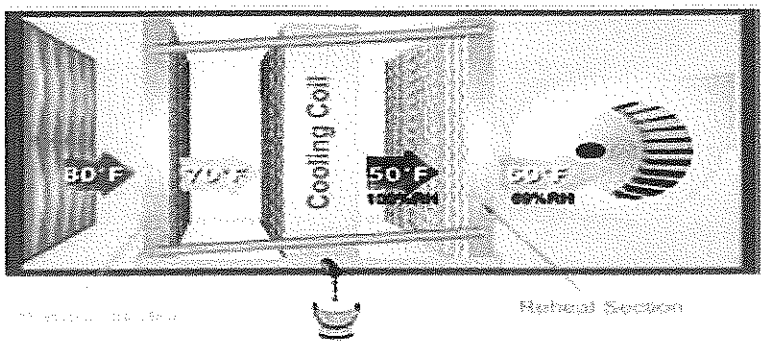
GRAND BALLROOM VENUE

The preliminary calculations indicate the required outside air per code is above 70 percent of the total supply air, based on the New York State energy code Energy recovery units are required. The below outlines the energy recovery system approach and as the design progresses we will review the requirement and revise as required.

Load: 67,500 CFM

Equipment: (2) 33,750 CFM Energy Recovery Air Handler serving Grand Ballroom venue space with unit mounted VFDs.

The air handling energy recovery units shall provide conditioned air to the Grand Ballroom venue. The indoor units shall include energy recovery units consisting of the following components: Supply air stream - intake outside air intake section, MERV-7 filter, total energy wheel with 100 percent low pressure drop bypass assembly (around wheel), mixing section (return air and outside air), heating coil, chilled water coil, supply fan. The return/exhaust section consists of return fan, MERV-7 filter, mixing section to the return path to the supply air stream or the exhaust air stream through the wheel, total energy wheel and exhaust section. The unit is configured with a total energy wheel which is sized for the space loads and a complete bypass section around the wheel assemble at low pressure drop to allow efficient energy transfer and when in economizer minimum pressure drop around the wheel.



Wrap Around Heat Pipe

The exhaust and bypass air dampers shall be sized for 100 percent damper configuration for economizer mode.

As an alternative to a conventional supply and return fan, fan array can be specified as an alternative. Fan array consists of multiple, smaller fans, as opposed to one single fan. This arrangement would add a level of redundancy as the unit can still be operational at a high percentage of full capacity if one fan fails. Other fan wall benefits include higher energy efficiency through optimized motor and fan control as well as quiet operation which eliminate the need for sound attenuators on the supply and return.

The terminal boxes shall be located in the ceiling plenum of the corridor adjacent to each space and shall be provided with hot water heating coils. The terminal units shall deliver air to the space through low pressure ductwork and ceiling mounted diffusers. The units shall be located based on the system loads and space programming.

FOOD AND BEVERAGE

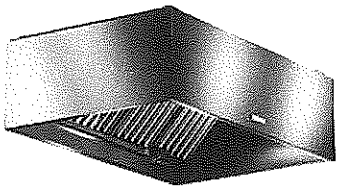
The food and beverage program consists of the following Restaurants and shops spaces:

- Buffet
- Italian (5 Star)
- Asian (5Star)
- Southern Cuisine
- Steak & Seafood (5 Star)
- Casual Grab & Go wings, pizza, burger bar)
- Coffee Bar / Smoothies
- VIP Section - The Grapevine
- VIP Room - House of Smoke
- Bars

The program does not defined Owner or tenant restaurants or shops, the below outlines the scope of work for owner occupied the tenant occupied spaces (all restaurants assumed to be owner occupied for now).

Owner Restaurant

Each restaurant shall be served by its own dedicated chilled water air handling unit(s) located in one of the mechanical rooms. Air handling units shall be variable volume type with variable frequency drives and shall be able to be zoned for dining areas, , bar areas, storage areas, etc. as required by VAV terminal units with hot water reheat coils. This air handling unit shall also provide 20 percent of the kitchen exhaust requirement in order to keep the restaurant seating areas negative with respect to the kitchen. A separate 100 percent outdoor air make-up air unit shall also be provide as required for the kitchen exhaust systems and shall be sized for 80 percent of the kitchen exhaust requirement. Main supply and return ductwork shall be provided from the air handling unit(s) to within the respective restaurant space. Continuation of the supply and return ductwork and installation of VAV air terminal units, hot water reheat coils, diffusers, grilles and controls shall be performed as each restaurant space is developed.



Kitchen Exhaust Hood

The air handling units serving the restaurant seating area shall consist of the following components: exhaust/return fan, outside air intake section, return air fan, MERV 7 and MERV 13 filters, mixing blender, chilled water cooling coil, hot water heating coil and supply fan. The units shall be sequenced for variable volume flow and provided with variable frequency drives.

The make-up air unit serving the kitchen shall consist of the following components: outside air intake section, MERV 7 and MERV 13 filters, chilled water cooling coil, IFB - hot water heating coil and supply fan. The units shall be sequenced for variable volume flow and provided with variable frequency drives.

Each kitchen grease hood and dishwasher shall have a corresponding dedicated roof mounted exhaust fan. The final quantities of fans shall be determined as the kitchen space programming progresses.

Each restaurant and cooking kitchen shall be provided with its own independent kitchen hood grease exhaust duct system(s) and corresponding make-up air duct sized to meet the requirements of each hood. The kitchen hood exhaust system(s) shall meet all local code requirements. Each kitchen hood exhaust system shall consist of a welded 16 gauge steel exhaust duct system, or a UL approved pre-manufactured grease exhaust duct system, enclosed within a 2 hour fire rated enclosure to the point it exits the building.

Each restaurant and cooking kitchen shall be provided with a dedicated dishwasher exhaust duct constructed of 304 stainless steel.

Chilled water piping shall be provided to each restaurant space to serve spot air conditioning equipment and water cooled restaurant equipment as required for each restaurant.

Hot water piping shall be provided to each restaurant space for heat coils and other local heating equipment.

BUFFET SYSTEMS

Buffet/Kitchen

Equipment: (1) 24,000 CFM Air Handler Unit
(1) 18,000 CFM Hood Exhaust Fan
(1) 15,000 CFM Make up Air

The buffet shall be served by its own dedicated chilled water air handling unit located in one of the mechanical rooms. Air handling units shall be variable volume type with variable frequency drives and shall be able to be zoned for buffet areas and kitchen areas, as required by VAV terminal units with hot water reheat coils. The air handling units shall also provide the make-up air required for the kitchen exhaust systems (refer to exhaust system paragraph). . Continuation of the supply and return ductwork and installation of VAV air terminal units, hot water reheat coils, diffusers, grilles and controls shall be provided.

Italian Restaurant/Kitchen

Equipment: (1) 12,800 CFM Air Handler Unit
(1) 6,000 CFM Hood Exhaust Fan
(1) 4,800 CFM Make up Air

Asian Restaurant/Kitchen

Equipment: (1) 11,400 CFM Air Handler Unit
(1) 10,000 CFM Hood Exhaust Fan
(1) 8,000 CFM Make up Air

Southern Cuisine Restaurant/Kitchen

Equipment: (1) 10,600 CFM Air Handler Unit
(1) 8,000 CFM Hood Exhaust Fan
(1) 6,400 CFM Make up Air

Steak and Seafood Restaurant/Kitchen

Equipment: (1) 6,800 CFM Air Handler Unit
(1) 5,000 CFM Hood Exhaust Fan
(1) 4,000 CFM Make up Air

Casual Grab & Go wings, pizza, burger bar

Equipment: (1) 5,400 CFM Air Handler Unit
(1) 2,500 CFM Hood Exhaust Fan
(1) 2,000 CFM Make up Air

Coffee Bar / Smoothies

This shop shall be provided with ventilation air through the house systems and chilled and hot water connections. Tenant to provide space mounted fan coil units. No hood is assumed.

Equipment: (1) 500 CFM fan coil unit

VIP Section - The Grapevine

The program does not define the use of this space; we have assumed this is a wine storage and distribution.

Equipment: (1) 1,400 CFM fan coil unit

(1) 600 CFM cassette type dehumidification AHU

VIP Room - House of Smoke

The program does not define the use of this space; we have assumed this is a smoke shop.

Equipment: (1) 500 CFM fan coil unit

(1) 500 CFM smoke eater assembly

Bars

Equipment: (1) 13,500 CFM Air Handler Unit

(1) 4,500 CFM Exhaust Fan

Club Venues

The club venues consist of High Energy Club (2 levels) and Jazz and Dance Club.

Load: 22,000 CFM

Equipment: (1) 12,000 CFM Air Handler serving the High Energy Club with unit mounted VFDs.

(1) 10,000 CFM Air Handler serving the Jazz and Dance Club with unit mounted VFDs.

The air handling units shall consist of the following components: exhaust/return fan, outside air intake section, return air fan, MERV 7 and MERV 13 filters, mixing blender, chilled water cooling coil, hot water heating coil and supply air fan. The units shall be sequenced for variable volume flow and provided with variable frequency drives.

The terminal boxes shall be located in the ceiling plenum of the corridor adjacent to each space and shall be provided with hot water heating coils. The terminal units shall deliver air to the space through low pressure ductwork and ceiling mounted diffusers. The units shall be located based on the system loads and space programming.

ENTERTAINMENT, RETAIL & OTHER PUBLIC AMENITIES

The program defines the spaces as Leasable Area in Casino (Wine, Cigar, Commissary, newspaper, etc), Support Areas in Casino, and Public Circulation in Casino.

The space program configuration on the plan has not been defined at this stage, the blow outlines the capacity and proposed systems, as the design progresses modifications will be make.

Equipment: Leasable Area in Casino - (Multiple) fan coil units totaling 5,700 CFM

Support Areas in Casino - (1) 5,600 CFM central air handler unit or multiple Fan coil units

Public Circulation in Casino - (1) 9,600 CFM central air handler unit

Spa & Fitness at Hotel - shell only

The Spa and Fitness is defined as shell only and no fit-out, we have included the loads at the central plant for both chilled water and hot water systems. The tenant criteria needs to be defined for the project, which the design team will develop and work with the client. The assumed criteria: Base building provides the minimum ventilation per code the tenant space, capped and valved chilled and hot water connections, tenant provides the space level terminal units (Fan coil units).

ENTRANCE LOBBIES

All main entrance lobbies within the building complex shall be designed with dedicated units to create a positive pressure to offset infiltration.

The entrance presents a condition where condensation could develop based on the outdoor conditions. The design shall provide for a level of de-humidification of the air to maintain the dew-point below the condensation level to remove the opportunity of condensation accruing on the floors or exterior glass. This shall be accomplished through standard chilled water coils with internal face and bypass assembly. The main egress/entrance doors are recommended to be configured with vestibules to allow the mechanical system to provide a controllable air barrier to stop the infiltration of high levels of moisture (grains/lb) from entering the lobbies.

The vestibule air handler units shall consist of outside air intake section, return air fan, MERV 7 and MERV 13 filters, face and bypass chilled water cooling coil, hot water heating coil, and supply air fan. The units shall be sequenced for variable air volume and provided with dedicated variable frequency drives.

The supply air shall be delivered via low pressure ductwork to ceiling mounted VAV boxes. The return air shall be delivered via ceiling mounted VAV boxes located on the entrance to the occupied space. The supply and return air shall be tracked to maintain a positive pressure to offset infiltration during high pedestrian traffic.

HOTEL STAIRWELL PRESSURIZATION

Equipment: (2) 7,000 CFM Supply fans with VFDs.

Each pressurized stairwell shall be provided with a means to introduce air at every other floor of the stairway and to relieve air at the top of the stairway as presented within the airflow riser diagrams.

Air supplied to the stairway shall be accomplished by using individually zoned supply air fans and stairwell relief shall be accomplished via barometric damper operation.

All stairwells and smoke-proof enclosures which require pressurization shall have all associated horizontal egress connectors pressurized. This shall be completed by pressurization fans providing outdoor air evenly throughout the horizontal egress corridors.

ELEVATOR HOIST WAYS AND MACHINE ROOMS SYSTEM

Each elevator control room shall be provided with an independent chilled water fan coil unit(s) to protect against overheating of the elevator equipment. These systems shall be capable of maintaining space temperatures within an acceptable range established by the elevator equipment manufacturer. Each fan coil unit shall also be connected to the domestic water systems for emergency cooling in the event of chilled water system failure. Each fan coil unit and associated pump shall be connected to the emergency power system.

All elevator hoistways shall be provided with a means for venting smoke and hot gas to the outside air. Vents for said hoistways shall be located near the top of the hoistway and shall open either directly to the outer air or shall be routed through non-combustible ducts to the outside air. Vent sizes shall vary depending upon the size and quantity of elevator cars and the size of the hoistway. Automatic control dampers shall be installed in vents and controlled at the fire alarm panel. Vents that run horizontally shall be pitched 17 degrees continuously from the hoistway to the exterior openings.

GARAGE VENTILATION SYSTEM

A garage ventilation system shall be required for the bottom floor of the garage since it is located below grade (final determination is required). All other floors of the garage are open to the atmosphere on all sides and therefore shall not require ventilation. The equipment listed below shall only serve on level of the garage.

Equipment: (6) 20,900 CFM exhaust fan with VFD serving underground parking

The garage ventilation system shall be designed to provide exhaust air in quantities sufficient to control local levels of carbon monoxide within code required levels.

Exhaust air shall be collected throughout the aforementioned levels of the structure via vertical, dedicated, exhaust air shafts. These shafts can be constructed of either concrete block or sheet metal. All fans shall be equipped with variable frequency drives and have emergency power connections. All fans are intended to be mounted tight to structure on the particular parking level that they serve.

Make-up air to the parking levels shall be accomplished via passive openings within the exterior walls of the structure.

A carbon monoxide (CO) sensing system shall be installed throughout the garage to monitor CO levels. The BAS system shall monitor all points and signal the DDC front end upon the alarm of any sensor. Specific "CO" control zones shall be defined to prevent the entire exhaust system from energizing upon the alarm of one point within the system.

The design team to review the basement level parking total open area as the program develops to determine if the free area meets the intent of natural ventilation.

LOADING DOCK VENTILATION SYSTEM

The loading dock is located outside the building shell, but with a first floor overhang creating three sided enclosure, at this stage we will carry a exhaust ventilation system for the loading dock. The equipment listed below shall serve the loading dock space

Equipment: (1) 3,000 CFM exhaust fan with VFD

The loading dock ventilation system shall be designed to provide exhaust air in quantities sufficient to control local levels of carbon monoxide within code required levels. All fans shall be equipped with variable frequency drives and have emergency power connections.

Make-up air to the loading shall be accomplished via the open wall end.

A carbon monoxide (CO) sensing system shall be installed throughout the loading dock to monitor CO levels. The BAS system shall monitor all points and signal the DDC front end upon the alarm of any sensor. Specific "CO" control zones shall be defined to prevent the entire exhaust system from energizing upon the alarm of one point within the system.

COMPUTER AND TEL/DATA ROOMS

Each computer control room shall be provided with CRAC units (N+1) with DX and chilled water coil unit(s) to protect against overheating of the equipment. These systems shall be capable of maintaining space temperatures within an acceptable range. Each unit shall also be connected to the emergency power system in the event of system failure.

All IDF- IT rooms shall be provided with a dedicated DX split system and transfer exhaust fans as a backup system.

TRANSFORMER ROOMS

Transformer rooms shall be served by a single central air handler unit providing cooling and ventilation air to all transformer rooms specified in the spaces. The central air handler unit shall be ducted to the space with a plenum. Fire dampers shall be installed where the duct penetrate the walls.

The unit shall be provided with exhaust/return fan, outside air intake section, MERV 7 filters, chilled water cooling coil, and supply air fan. The units shall be sequenced for constant volume flow and provided with economizer to take the advantages of the free cooling.

CONDENSATE WASTE AND CONTROL

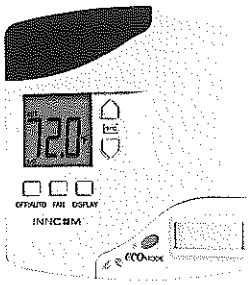
Condensate from cooling coils of air handlers, fan coil units, etc. shall be collected and discharged to the storm drainage system. Equipment shall be drained by means of an indirect connection.

Any cooling device (fan coil unit) which is located above a ceiling or within an attic space shall be provided with an additional water tight pan of corrosion resistant metal that shall be installed beneath the cooling coil to catch over flow condensate due to a clogged primary drain. This additional drain pan shall be provided with a drain pipe. The pipe shall be drained by means of an indirect connection to the storm drainage system.

AUTOMATIC TEMPERATURE CONTROL SYSTEM

A "Computerized Energy Management System (EMS)" shall be provided by Siemens, Johnson or approved equal. The system shall include all computer software and hardware, operator input/output devices, remote processing units, automation sensors and controls, wiring, piping, installation supervision and labor, calibration, adjustments and checkout necessary for a complete and fully operational system.

Software programs to include optimization program for start/stop of air systems, pumps, run time, trend logging, temperature readouts, equipment monitoring and control and economizer cycles.



The system shall be complete including all valves; dampers; sensors; pressure, temperature gauges; control panels both local and central; pilot lights, alarms and lead-lag switches; and all other devices required to obtain the desired control sequences. All wiring required for these systems shall be included and all chilled water control valves shall be two-way type.

An air monitoring system (by Airxpert Systems, Inc. or approved equal) shall monitor CO, CO2 and VOCs within the space. The air monitoring systems shall be used by the BMS to adjust outdoor air intakes to reflect actual occupancy.

The Casino population shall be monitored by the building automation system through environmental monitoring system (i.e. Aircuity). This system resolves the deficiencies of traditional Demand Control Ventilation (DCV) by implementing a multiplexed air sampling system with centralized sensors. This system provides consistently accurate measurement of CO2 and other airborne contaminants and uses this information to ensure that proper ventilation is maintained. When appropriate, ventilation can be turned down automatically, which enables significant energy savings.

The following control schemes shall be considered for the hot water and chilled water plant to provide an energy efficient system:

- Advanced chiller controls to allow efficient operation at part load conditions.
- Cooling tower fan speed control.
- Condenser water temperature reset.
- Hot water and Chilled water pumps with variable frequency drives to allow variable system flow.
- Pressure Independent Control Valves

HVAC DESIGN CRITERIA

PROJECT LOCATION

The proposed building is located in New Windsor, NY

CODE, STANDARDS

The following proposed design criteria shall be utilized for the project unless directed otherwise.

- The New York State Building Code 2010 Edition with local amendments.
- International Energy Conservation of New York State Code (IECC) 2010
- The New York State Mechanical Code 2010
- Underwriters Laboratories (UL)
- The National Fire Protection Association (NFPA)
- American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE)
- American Society for Testing and Materials (ASTM)
- American National Standards Institutes (ANSI)
- Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)
- American Society of Mechanical Engineers (ASME)
- Air Conditioning and Refrigeration Institute (ARI)
- Occupational Safety and Hazards Association (OSHA)
- ANSI/ASME B31.1 Code for Pressure Piping, Boiler and Pressure Vessel
- American National Standard for Public Swimming Pools
- American National Standard/NSF 50-2000

PROJECT SPECIFIC CRITERIA

Climate

The HVAC systems design shall be based on the following climatic factors: (Temperatures based on ASHRAE 0.4 percent for Albany, NY.)

- Summer: 89°F db and 73 °F wb
- Winter: -1.9°F

Space Conditions

Indoor Design Temperatures:

Occupied areas in general (includes casino, restaurants, retail, lobbies, BOH areas):

- Summer: 75° F
- Winter: 70° F

Kitchen Work Areas:

- Summer: 78° F
- Winter: 70° F

Guest Rooms:

- Summer 75 degrees F.
- Winter 72 degrees F.

Janitor's Closets and Laundry Chute Rooms

- Heat and ventilated
- Winter 72 degrees F.

Mechanical and Electrical Rooms

- Cooled and heated as required

Parking Garage

- Tempered to 15°F below design outdoor air temperatures.
- No heating.

Other Areas:

- Heating and ventilation as required.

Relative Humidity (RH) shall be controlled for casino spaces.

Outdoor Air Ventilation Rates

The ventilation rates are based on New York State Mechanical Code 2010

- Casino - 30 cfm per person
- BOH areas - 15 cfm per person
- Guest Rooms - 30 cfm per room
- Restaurants, food courts, cinema theaters, bar - 20 cfm per person
- Malls - 0.20 cfm per square foot
- Retail - 0.30 cfm per square

- Meeting Rooms - 15 cfm per person
- Multi-Purpose - 15 cfm per person
- Fitness - 20 cfm per person
- Pool - 0.5 cfm per square foot
- Corridor - 0.06 cfm per square foot
- Lobby - 15 cfm per person
- Spa - 20 cfm per person
- Parking Garage - 1.5 cfm/sf
- Toilet Rooms - 75 cfm per water closet or urinal
- Hotel Bathroom/Toilet Exhaust - 35 cfm per room

Design Occupancy

The following design occupancies shall be used for the design of the HVAC systems and are based on New York State Mechanical Code 2010:

- Lobbies: 30 people per 1,000 sf.
- Restaurant: 70 people per 1,000 sf.
- Bars: 100 persons per 1,000 sf.
- Admin/Office Areas: 7 persons per 1,000 sf.
- Hotel Rooms: Ventilation per bedroom
- Casino: 120 persons per 1,000 sf.
- Retail: Ventilation per sf.
- Meeting Rooms: 120 people per 1000 sf.
- Nightclub: 100 persons per 1,000 sf.
- Multi-Purpose: 120 persons per 1,000 sf
- Fitness: 30 people per 1,000 sf.
- BOH & Office: 7 people per 1,000 sf.
- Spa: 30 people per 1,000 sf

Lighting and Equipment Loads

The following lighting and equipment loads shall be used as a minimum for calculating the air conditioning system capacities:

<u>Casino</u>

- Lights 2 watts / sf
- Equipment 8 watts / sf

BOH areas & Offices

- Lights 1.0 watts / sf
- Equipment 1.5 watts / sf

Restaurants and food courts with identified kitchens

- Lights 1.4 watts / sf
- Equipment 1.5 watts / sf

Restaurants and food courts with unidentified kitchens

- Lights 1.4 watts / sf
- Equipment 5.0 watts / sf

Retail

- Lights 1.7 watts / sf
- Equipment 2 watts / sf

Meeting Rooms

- Lights 1.3 watts / sf
- Equipment 3 watts / sf

Guest rooms

- Lights 1.0 watts / sf
- Equipment 0.5 watt / sf

Multi-Purpose - Meeting Rooms

- Lights 1.3 watts / sf
- Equipment 3.0 watt / sf

Spa

- Lights 1.1 watts / sf
- Equipment 1.5 watts / sf

Fitness Center

- Lights 1.1 watts / sf
- Equipment 3 watts / sf

Pool

- Lights 5 watts / sf
- Equipment 0.5 watts / sf

Corridors

- Lights 0.5 watts/sf

Lobbies

- Lights 1.3 watts / sf
- Equipment 0.5 watts / sf

Kitchen

- Lights 1.2 watts / sf
- Equipment 10 watts / sf

Bar

- Lights 1.4 watts / sf
- Equipment 2 watts / sf

IDF/Elec./ Closet

- Equipment 35 watts / sf

Computer Rooms:

- Power Density 50-100 watts / sf

MECHANICAL EXHAUST VENTILATION

Ventilation shall be provided by exhaust fans discharging to atmosphere for the following areas:

- Toilets and locker rooms
- Kitchens (hood and dishwasher exhaust)
- Mechanical equipment rooms
- Storage areas
- Electric rooms
- Engineering, maintenance and theater shops
- Laundry and dryers
- Special areas such as paint and carpenter shops

NOISE CONTROL

The HVAC systems shall be designed to meet the background noise criteria indicated below. These values are in accordance with ASHRAE guidelines.

- BOH Areas NC-40
- Ballroom NC-35
- Casino areas NC-40
- Circulation/ Lobbies NC-45

- Exhibit Halls NC-40
- Food Court NC-35
- Hotel Rooms NC-35
- Kitchen NC-45
- Lobbies/ Registration NC-45
- Lounges/Bar NC-50
- Meeting Rooms NC-35
- Museum NC-30
- Offices NC-35
- Restaurant Dining NC-35
- Retail NC-40
- Retail Atrium NC-45
- Theater NC-25
- Storage NC-40
- Service Areas NC-50
- Utilities Rooms NC-50

Sound attenuators, acoustic duct lining or duct lagging with drywall shall be specified as required to achieve the above noise levels.

ELECTRICAL SYSTEMS DESCRIPTION

SUSTAINABLE DESIGN

Sustainable design is becoming integrated into building design with the increased awareness and demand by government, public and private companies. There is a broad range of sustainable approaches to reduce water, increase energy efficiency and design for human health that maximize both economic and environmental performance. The Leadership in Energy and Environmental Design (LEED) green building certification program developed by the U.S. Green Building Council (USGBC) provides a metric for these sustainable design measures.

The following LEED prerequisites and credits are directly affected by the electrical design and may be pursued as design progresses.

- SSc8, Light Pollution Reduction. The reduction of light trespass from the building and site reduces the negative impact on nocturnal environments. The lighting for interior spaces shall have occupancy sensors and/or be time controlled to reduce nonemergency perimeter lighting during after-hours as defined as between 11 p.m. and 5 a.m.
- The electrical engineer will ensure that the exterior lighting is designed to comply with the Mandatory Provisions in section 9.4, Lighting of ASHRAE Standard 90.1-2007.
- Exterior lighting fixtures shall be specified as full cut-off to eliminate light trespass into the sky. The layout and selection of the exterior lighting fixtures shall minimize the light trespass at the LEED site boundary, not exceeding the horizontal and vertical footcandles established by the LEED rating system.
- **EAp2, Minimum Energy Performance.** The electrical engineer will design the building to comply with the Mandatory Provisions in section 8.4, Power and 9.4, Lighting of ASHRAE Standard 90.1-2007.
- **EAc1, Optimize Energy Performance.** Using the performance path, the energy performance of the design is compared to a baseline building performance per Appendix G of ASHRAE Standard 90.1-2007 and points are awarded based on the percentage of improvement. Energy efficient improvements in the project will include reduced lighting power density, and sensors. The electrical designer will coordinate with the energy modeler to incorporate these measures into the project's energy model to capture these energy savings.
- **EQc6.1, Controllability of Systems - Lighting.** The electrical engineer will work with the architect and others on the project team to design for controllability of lighting which enables building occupants to adjust lighting levels to meet their task needs as well as personal preferences. This often includes room lighting controls, task lighting and in some cases lighting built into furniture. This credit requires controllability for a minimum of 90 percent of the building occupants to promote not only energy efficiency, but also for their comfort, productivity and well-being.

UTILITY COMPANY INTERFACE

Utility Service

The property is located in the Central Hudson Gas and Electric Corporation's Newburgh Division.

A reliability analysis and technical review is currently underway to determine which service option provides the best alternative for the development.

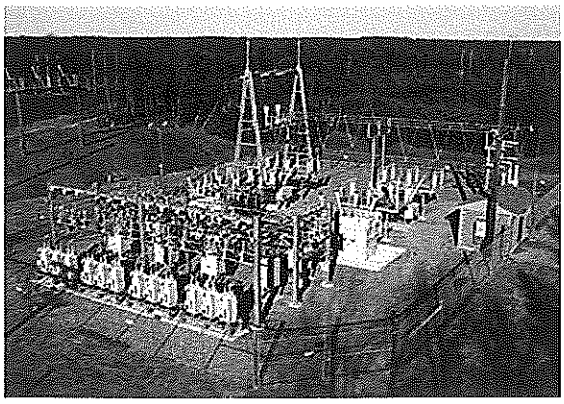
The service configuration would consist of two dedicated feeders from the Utility at 13.2 kV. The Utility feeders would originate from separate substations to provide redundant protection against transformer or bus failure at a single utility substation. The feeders would be routed to a lineup located within the main electrical distribution center.

NORMAL POWER

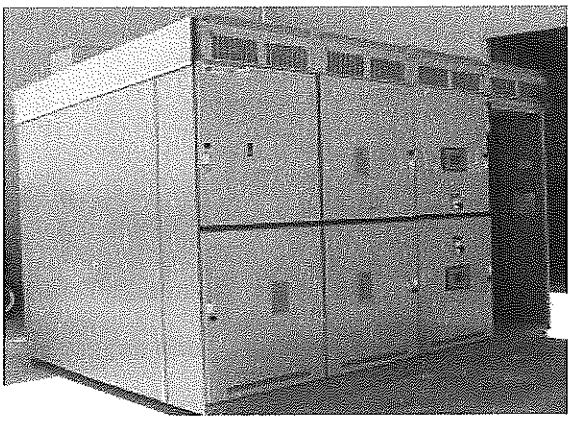
The resort will be served from 13.2 kV three phase, distribution switchgear located in the central utility plant. The switchgear will distribute (underground in concrete encased ductbanks) 13.2 kV power to substations located throughout the resort. Substations serving casino operations and the Central Utility Plant will be configured with redundant transformers in a double ended arrangement. Substations serving hotel and non-gaming functions will be single ended.

Central Utility Plant

The central utility plant (CUP) will be fed from the main electrical distribution center for the resort. The service entrance 13.2 kV switchgear and main electrical distribution center will be located at the building perimeter and feed substations for the chiller plant. The CUP will also be fed with standby generator power to provide cooling of critical power systems such as UPS power for gaming systems in the casino. The substations for the chiller plant will be double ended switchgear with crosstie similar in configuration as the substation for the casino.



Typical Utility Substation



Typical Customer Station Switchgear

Kitchens

Kitchens and resort operated restaurants will be equipped with dedicated panelboards for the equipment and functions of the program.

Restaurants/Retail

Independently operated restaurants and retail areas will be arranged with a dedicated sub metered feeder to a panelboard in the space.

Hotel

The hotel and supporting spaces will be served from a substation consisting of primary circuit breaker, transformer, and secondary switchboard. Power will be distributed to satellite electric closets on each floor via busway. Each closet will then serve two sub-satellite electric closets on each level of the hotel. Branch circuits will be served from closets to guestrooms and other loads. Refer to the hotel riser diagram for an illustration of the system. The function rooms will be configured for flexibility with three phase 208/120 power available via specialty receptacles or plug in busway.

Casino

The facility will be served from a double ended substation in the adjacent to the casino space. The substation will be configured with primary circuit breakers, transformers, and drawout switchgear. Four electric closets located around the perimeter of the casino will provide the distribution equipment for power to HVAC, lighting, and equipment throughout the space. Refer to the one line diagram and riser diagrams for illustration of the distribution system.

Parking Garage

The parking garage will be equipped with a substation to provide power to the lighting, ventilation, and elevators in the parking garage. The substation will also be configured to provide power to future retail in the parking garage. The substation will consist of a primary circuit breaker, transformer, and secondary switchboard.

Exterior Recreation (Future)

The recreation area is a planned future development component of the resort. The main service and distribution includes capacity for the recreation area. The 13.2 kV feeder serving the parking garage will be tapped in the future for a small substation to service the recreation area. The future substation would consist of a primary device, transformer, and secondary switchboard.

Kitchens

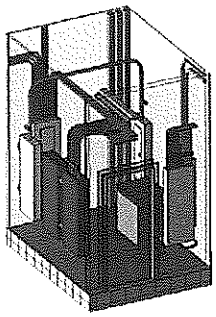
Kitchens and resort operated restaurants will be equipped with dedicated panelboards for the equipment and functions of the program.

Restaurants/Retail

Independently operated restaurants and retail areas will be arranged with a dedicated sub metered feeder to a panelboard in the space.

DISTRIBUTION

The main electrical room(s) of each building will distribute normal and standby power to distributed electrical rooms at 480/277 Volts. The room will include the building main switchgear or switchboard mentioned above, standby distribution gear, automatic transfer switches, distribution panels, dry type transformers, lighting panelboard, and power panelboards.



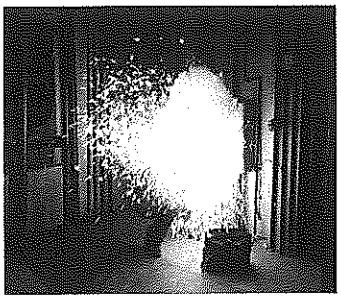
Typical Distributed Electrical Room

The distributed electrical rooms will be located on each level or zone to serve local branch circuit requirements and remote power panelboards. 480 Volts will be stepped down to 208/120 Volts via dry type transformers to 208/120 Volt panelboards. Distributed electrical rooms will include 480/277 Volt power panels, lighting panels, lighting control components, dry type transformers, 208/120 Volt power panels, and other miscellaneous electrical equipment.

DISTRIBUTION EQUIPMENT

Building Main Switchgear/Switchboard

Building Main Switchgear: The main building distribution switchgear for gaming functions will be metal enclosed drawout type power circuit breaker switchgear configured in a double ended configuration. The drawout switchgear configuration provides a higher level of reliability and permits maintenance of the switchgear without a complete shutdown. The main circuit breaker will be equipped with electronic trip unit, surge protection device and multifunction digital metering. Each of the feeder breakers will be equipped with full function electronic trip units including power monitoring. The power meters and trip units will be provided with an interface to the building management system and central power monitoring station.



Arc Flash Event

The switchgear bus will be copper and fully rated for the prospective available fault currents.

Switchgear and switchboards will be configured with a "virtual main" feature to help manage potential arc flash hazards. The virtual main consists of a primary vacuum circuit breaker with a relay that is programmed to trip upon a fault on the secondary of the transformer. A set of current transformers is provided between the transformer secondary and low voltage main circuit breaker. The arrangement includes a UPS to provide control power to the primary circuit breaker and relay.

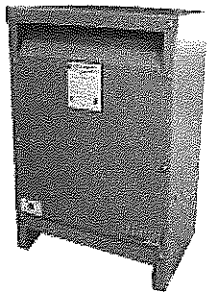
The hotel and parking garage buildings will be equipped with main switchboards. The switchboards will consist of individually mounted insulated case main circuit breakers. The main circuit breaker will be equipped with electronic trip unit, surge protection device and multifunction digital metering. The feeder circuit breakers will be group mounted when appropriate. Each of the feeder breakers will be equipped

with full function electronic trip units including power monitoring. The power meters and trip units will be provided with an interface to the building management system and central power monitoring station.

The switchboard construction in the hotel and parking garage provides a more economical electrical distribution method for less critical areas of the resort.

Transformers

Substation transformers will be VPI dry type transformers with 115 degrees C rise. Double ended transformers (in the casinos and Central Utility Plant) will be equipped with cooling fans to utilize the fan cooled ratings during emergency operation (loss of transformer).



Dry Type Transformer

Transformers will meet the efficiency requirements defined by NEMA TP-1. Transformers will have 220 C rated insulation. Transformer will be UL listed and meet requirements of latest NEMA and ANSI standards.

Vibration Isolation: All transformers, whether hung from the structure or floor mounted, will be provided with vibration isolation devices. Devices will be spring rubber hangers (Mason Type HS or equal) for trapeze mounting or super W pads for floor mounted Dry Type Transformer.

DISTRIBUTION SYSTEMS VOLTAGE AND STARTER CRITERIA

The nominal distribution system Voltages will be as follows:

- 480V, 3 phase for equipment (mechanical, plumbing, other large loads)
- 277V, 1 phase for lighting, normal and emergency in commercial spaces
- 120V, 1 phase for lighting, normal and emergency in Hotel spaces
- 208V, 3 phase for miscellaneous equipment loads as required
- 120V, 1 phase for convenience power in casino, hotel, offices, general areas, etc.
- 120V, 1 phase for other miscellaneous systems (fire alarm, communications, etc.)

Motor Voltages

- Less than 1/2 120 Volts, single phase
- 1/2 and larger 480 Volts, three phase

Motor Starter Types

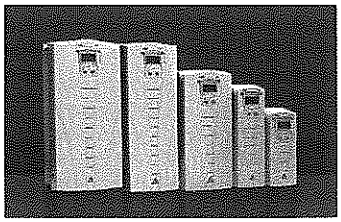
- 1/4 and below Thermal overload switch
- 1/3 to 25 VFD or Combination circuit breaker and full Voltage magnetic starter.
- Above 25 VFD or Combination circuit breaker and reduced Voltage starter.

Variable Frequency Drives (VFD)

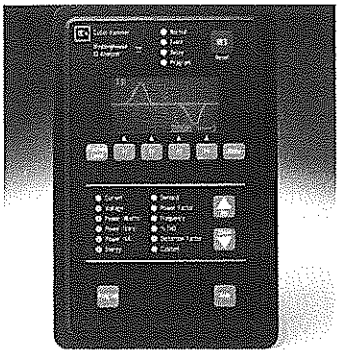
- VFDs will be provided for equipment identified by Division 23. VFDs will be IGBT type drives. The design will include dV/dt filters and line reactors to mitigate harmonics. 18 pulse drives or harmonic trap filters will be utilized for large drives to mitigate the impact of harmonic distortion.
- VFDs will be manufactured by ABB, Yaskawa, or Eaton.

Central Metering

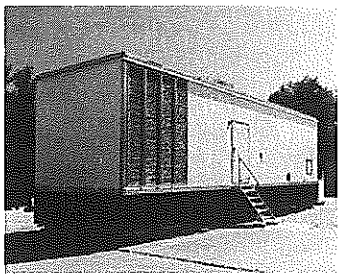
The resort will be provided with a power monitoring systems. Normal and Standby Switchgear, switchboards, UPS systems, and ATS's will be equipped with interface to the power monitoring system. Each switchgear and switchboard digital meter and circuit breaker will be connected to an Ethernet port for connection to the power monitoring system. UPS systems and ATS's will also be integrated into the power monitoring system. The system will be configured to allow the building operators to monitor the power usage for maintenance and energy management.



Variable Frequency Drives (VFD)



Digital Multi Meter



Standby Power

STANDBY AND EMERGENCY POWER

The resort will be equipped with three 2000kW diesel power generators. The generators will be paralleled via 13.2kV switchgear and connected to the resort's 13.2kV distribution system. The connections will be arranged for possible demand response and closed transition to permit soft loading during testing and maintenance.

The generator paralleling switchgear will include priority circuits to the resorts emergency and legally required systems. The circuits will be routed to dedicated "emergency power" substations where the 13.2kV is stepped down to 480/277 Volts and the power is segregated into emergency and legally required systems. Optional standby systems will be served through the resorts 13.2 kV power system with a load shed sequence. The system shall feed with two emergency power step-down substations.

The generators will be installed at building exterior in sound attenuating enclosures. The generators will be provided with fuel from an underground tank sized to provide 24 hours of fuel.

Emergency Power (NFPA 70, Article 700)

The emergency power will serve the resort's emergency lighting, fire alarm systems, and other systems essential for safety to human life. Emergency distribution for the buildings will be located in a room adjacent to each main electrical room. The emergency distribution will be fed from a dedicated automatic transfer switch in each main emergency electric room. Overcurrent devices will be identified with manufacturer, type, rating and settings to provide a selectively coordinated system. Emergency power distribution equipment will be installed in dedicated rooms with 2 hour fire separation.

Legally Required Power (NFPA 70, Article 701)

The legally required power will serve the building's equipment required to be served from a standby power system. This equipment includes elevators, smoke control systems, and other equipment required by applicable codes to be served from a standby power source. The legally required power distribution equipment will be served from a dedicated automatic transfer switch located in each main emergency electric room. Overcurrent devices will be identified with manufacturer, type, rating and settings to provide a selectively coordinated system. Legally required power distribution equipment will be installed in dedicated rooms with 2 hour fire separation. The equipment may be installed with emergency power distribution equipment.

Optional Standby (NFPA 70, Article 702)

Loads served from this system include required mechanical systems, gaming systems, and equipment identified during programming. The standby power will be distributed through the resort's normal power system. Non critical loads will be load shed to match the available generator capacity.

Generator Capacity

At the writing of this report, the final capacity of the system has not been selected. For concept the generators will be 6000 kW (7200 kVA) with a 13.2 kV, 3 phase, output. The generators will be arranged in an N+1 arrangement for a total of three (3) 2000 kW generators. The Generators will comply with Federal, State and Local emissions requirements.

The final rating of the generator plant will be determined by the reliability of the utility services to the resort and the anticipated demand load of critical functions in the resort. The chiller plant, gaming functions, and selected loads are planned to be provided with standby power.

The following loads (in both Stages) are defined as critical functions and are anticipated to be served from the Standby Power System

- Casino Functions
- Chilled Water Plant/Heating Plant
- Additional Selected Functions
- Security Systems
- IDF/MDF Rooms (including cooling)
- Food Storage

The following loads are proposed to be load shed during a complete loss of electric utility pending availability of standby power:

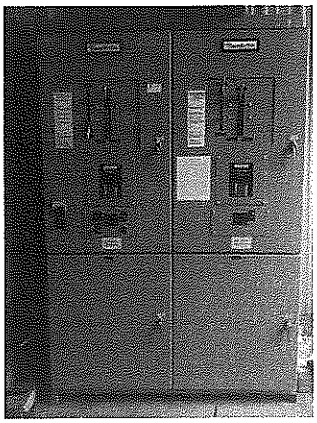
- Hotel and Hospitality

- Restaurants
- Parking Garage
- Convention Area
- Recreation Area

The generators will contain a radiator airflow cooled load bank sized at 50 percent of the generator rating. The load bank will provide a dedicated load to facilitate testing.

Emergency Step-down Substations

Each emergency step down substation will consist of a primary circuit breaker, 13.2 kV-480/277 Volt transformer, and secondary switchboard. Refer to the one line diagram for an illustration of the emergency distribution scheme. The secondary switchboard will include separate sections for fire pump, emergency, and legally required loads. Circuit breakers will be insulated case or molded case circuit breakers with electronic trip functions. Each circuit breaker will be equipped with power monitoring functions and integrated into the resort's power monitoring system.

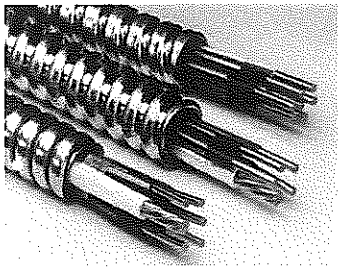


Automatic Transfer Switches

Transfer Switches

Separate transfer switches for Emergency, Legally Required, and the Hotel's Optional Standby will be provided to segregate loads. Each transfer switch will be fed from a dedicated circuit breaker in the emergency step down substation.

The transfer switches will be open transition with bypass isolation. The transfer switch withstand ratings will be selected with consideration given to the upstream overcurrent protective device clearing times. The transfer switch used for emergency power and legally required power will be selected with 18 or 30 cycles rating to allow for selectively coordinated overcurrent protective devices.



MC Cable

Gaming UPS

The gaming areas of the casino are critical to the function of the resort. All casino power serving slot machines and slot machine support systems will be served from a centralized uninterruptible power system (UPS). The UPS will be a modular system arranged in an N+1 configuration to provide UPS power throughout the casino. To provide segregation and protection against catastrophic failure, the load will be split and two central UPS systems will be provided for the casino. The dual UPS systems will be located in Rooms adjacent to the Casino main electric room.

Multiple manufacturers offer UPS systems exceeding 95 percent efficiency. The UPS systems will be specified as a high efficiency system.

ELECTRICAL BRANCH CIRCUIT WIRING

Branch circuits will consist of insulated copper conductors in raceway.

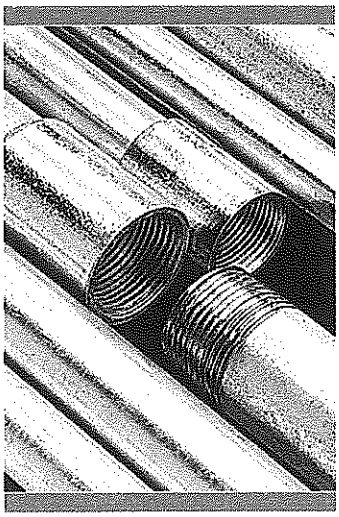
A minimum of 20-ampere branch circuits will be provided for lighting and power.

The minimum size wire for standard 120 volt, 20 ampere circuits *receptacles will be #12 AWG.*

All lighting and power circuits will be provided with dedicated neutrals and insulated ground conductors.

Receptacles with integral 5 mA ground fault protection will be provided in the following areas or as required by code or program:

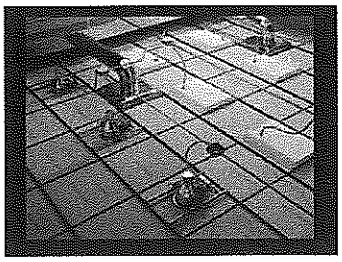
- Restrooms
- Roof
- Exterior outlets.
- Wet Locations
- Where located within 6 foot radius of water supply, such as sinks.
- Vending machines
- Kitchens



Rigid Steel Conduit

Casino Branch Circuits

The casinos will be arranged for branch circuit distribution in the raised floor system with a modular wiring system utlizing power distribution units. These units will be distributed throughout the floor to provide branch circuit density with the ability to serve a maximum designed slot density of 1 slot /26sqft. Each modular hub will be equipped with plug and play connectors to provide UPS backed branch circuits for both slot machines and fiber-optic network hubs and normal (non UPS) power to lighted gaming signage.



Wiring to Light Fixtures

Hotel Branch Circuits

The hotel rooms will be provided with 120 Volt, 20A duplex receptacles placed to allow convenient connection of light fixtures, television, clock radio, guest work area, and misellenous appliances. The bathroom will have a 120 Volt, 20A GFI duplex receptacle at the vanity. A minimum of three branch circuits will be provided for each hotel room with the following distribution:

- Bathroom vanity receptacle
- Light fixtures and receptacles
- Fan coil unit

- Larger rooms and suites will be provided with additional branch circuits.
- Each hotel room will have an integrated control unit for control of permanently installed lighting fixtures and switched receptacles. The system will also be used to control the fan coil units via an integrated digital thermostat with a modular interface to the central electronic lock system. The room light fixtures will have an option of control through the central electronic lock system as well. The system will be similar to the Johnson Controls Modular Room Control (MRC) Series.
- The hotel lobby and circulation areas will have wall mounted 120 Volt, 20A duplex receptacles on 30 foot center around the perimeter. Four receptacles per circuit.

BRANCH CIRCUITRY (ALL BUILDINGS)

The power distribution system design will limit voltage drop on feeders to 2 percent and voltage drop on branch circuits to 3 percent. Feeders and branch circuits will be upsized as required. Feeders and branch circuits will consist of insulated copper conductors in raceway. Wiring methods will be concealed where possible.

Feeders and branch circuit wiring will be concealed wherever possible. Wiring method applications include:

Rigid Steel Conduit (RGS)

- Up to 10' AFF in mechanical areas.
- Exposed exterior locations.
- Ductbank turn-ups into equipment or above grade.
- Other areas subject to physical abuse.

Schedule 40 PVC

- Concrete encased raceway in slab, in ductbank or under slab.

PVC Coated Raceway

- Within 10 feet radius of the lab waste neutralization system.
- Within 10 feet radius of the purified water system.

Electrical Metallic Tubing (EMT)

- Mechanical areas over 10 inches AFF.
- Other interior exposed areas.
- Set screw fittings

Metal-clad (MC) cable

Multi-wire cable assemblies including MC cable will be provided throughout the development as described below:

- Modular wiring systems for casino slot pedestal power.
- Wiring to receptacles and lighting fixtures after first junction point in each space. (provide EMT to the first receptacle or fixture, MC cable is permitted after the first device.)

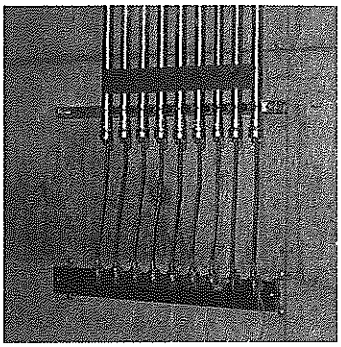
- Fixture whips to lighting fixtures and modular furniture systems.

WIRING METHODS

Application	Raceway	Conductors
Service Entrance; underground	Concrete encased PVC	XHHW, copper
Feeders: outdoor, underground	Concrete encased PVC	XHHW, copper
Feeders; Outdoor, aboveground	Rigid Steel conduit	XHHW or THHN copper
Feeders; Indoors concealed	Rigid Steel Conduit, IMC or EMT	THHN-THWN copper conductors
Feeders; indoors exposed	RSC, IMC, or EMT	THHN-THWN copper conductors
Branch Circuits	EMT, MC cable	THHN-THWN copper conductors
Emergency and Legally Required Feeders	2 hour fire rated enclosure or fire rated cable assembly	
Legally Required branch circuits to smoke control equipment		MI Cable

GROUNDING (ALL BUILDINGS)

The building grounding electrode system will consist of all code required grounding electrodes bonded together including metal underground water pipes, metal frame of building or structure, concrete encased electrodes and ground rods.



Ground Bus

The grounding will consist of a ground ring around the perimeter of each new building. A 4/0 AWG bare copper ground conductor under a minimum of 2 foot of cover bonded to each ground rod around the building perimeter. The ground rods will be copper clad steel rods 3/4" diameter x 10' long with top 1'-0" below grade. Ground rods will also be bonded to the building steel.

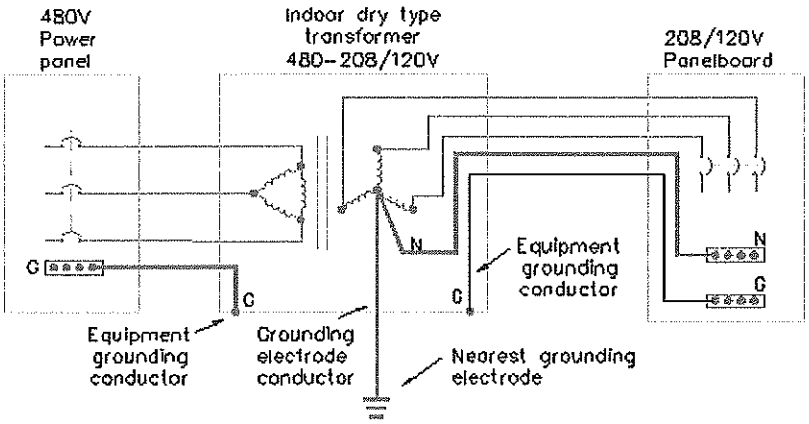
Additional ground rods may be required for the lightning protection system. Ground rods will be provided at no more than 60 foot intervals around the perimeter of the building.

Each building main electrical room will be provided with a connection to the grounding electrode system for bonding the neutral conductor at the transformer secondary overcurrent protective device. The grounding electrode system will also be extended to ground buses located in distributed electrical rooms for supplemental grounding and bonding of separately derived systems.

A separate connection to the grounding electrode system will be extended to ground buses located in the main communication and intermediate distributed communication rooms.

All underground connections and connections to structural steel will be welded connections. Above ground exposed connections will be bolted connections.

All feeders and branch circuits will have an insulated equipment grounding conductor.



Typical Ground Connection

LIGHTING

Introduction

The lighting design for much of the resort will be developed by a Lighting Designer. At this point in time, the concepts are under development. As the design progresses, additional details will be available for review. As a minimum, the lighting systems (luminaires, placement, and controls) used will be selected to satisfy the prescribed visual, environmental, and energy requirement while also eliminating light trespass from the building and site. In addition to designing for task requirements, lighting systems will be designed to create pleasant aesthetic and psychological impressions in finished spaces. The design will comply with or surpass ASHRAE/IESNA Standard 90.1-2007. Commercial specification grade luminaires will be used throughout the building. Also, new advanced, energy-efficient, lighting technologies and designs will be considered towards the design when appropriate.

Lighting for back of house areas and the CUP will be primarily energy efficient fluorescent fixtures. Fixture selection and application will be performed to optimize light levels and energy efficiency.

LED and compact fluorescent fixtures will be utilized where possible for efficiency and life /low maintenance.

The parking garage will be equipped with either purpose designed LED or high efficiency fluorescent lighting system consisting of fluorescent parking garage fixtures with T5HO lamps.

The buildings are anticipated to be highlighted with architectural accent lighting. HID or LED sources will be considered for exterior architectural accent lighting.

Exterior parking lot lighting will be coordinated with the architectural design and the civil engineer. Fluorescent, Metal Halide, and LED systems will be evaluated for uniformity of light and energy efficiency.

Lighting Controls

Lighting controls will be provided throughout the facility. A networked lighting control system is anticipated for the casino areas and will be developed with the Lighting Designer in future phases of the design. Occupancy sensors will be provided in back of house areas. Restaurants, meeting rooms, ballrooms, pre function areas, lobbies and some common areas will be provided with automatic lighting controls. The lighting will be arranged to provide a layered effect to provide "house lights" for setup/takedown, cleaning, etc when spaces are not occupied.

The automatic lighting control concepts will be developed with the Lighting Designer in future phases of the design. adnTA lighting control system will be provided throughout the facility with specific functions unique to areas such as the casinos. The building lighting control will be provided by occupancy sensors and photocells for daylight harvesting in select areas. The controls will be automated wherever possible for the maximum reduction of energy consumption.

Daylighting

For daylighting to fully recognize energy savings and become a true sustainability strategy, automatic daylighting controls are needed. These controls switch or dim or reduce lighting automatically and maintain a target light level. The more usable daylight falls on the task plane, the less electric light is needed. Daylighting controls will be utilized where reasonable throughout the project. Common areas and parking garages are likely areas for daylighting opportunities.

Daylight harvesting strategies have been demonstrated to produce 35-40 percent energy savings in office spaces according to the New Buildings Institute. For this reason, the ASHRAE Advanced Energy Design Guides and Advanced Buildings Benchmark encourage daylight harvesting controls.,

Daylighting control in parking garages will be used to turn off lights when suitable footcandle levels are maintained in the parking garage. The parking garage daylighting scheme will be zoned to ensure suitable light levels.

For continuous occupied space automatic controls that constantly adjust the electric lighting in response to the available daylight should be used. The best type makes use of dimmable ballasts controlled by photo-sensors operating fluorescent lamps. Past studies have shown that on/off controls tend to annoy those working in the space and occupants may not bother to use manual lighting controls to turn off lights when enough daylight is available.

Fluorescent dimming ballasts allow energy savings of nearly 85 percent at 10 percent lighting. Energy consumed and light level change is a linear and nearly directly proportional relationship as lights are dimmed. Energy consumption decreases continuously as the lights are dimmed with maximum energy savings at minimum illumination.

Daylighting schemes where variable lighting is determined to be important will utilize fluorescent dimming ballasts with 0-10V control.

Emergency Lighting

An emergency lighting system will be provided throughout the resort to allow the safe evacuation of the building in the event of a loss of the normal lighting power. Emergency lighting will be integrated into the lighting design by providing sufficient light levels utilizing elements and fixtures of the lighting system and connecting them to an emergency power source. Flood lights or dedicated emergency lighting may be provided where architectural features and intent do not provide suitable light levels for egress lighting.

Exit signs and emergency path of egress lighting will be provided in accordance with applicable codes in exit routes, exit stairways, exit passageways, open plan office spaces, electric rooms, and mechanical rooms.

LIGHTNING PROTECTION

The building will be equipped with a lightning protection system to safeguard persons and property from hazards arising from exposure to lightning. The system will include air terminals, bonding of roof mounted metal equipment and structures, and down conductors terminating at ground rods with connection to the grounding electrode system and electrical surge and transient suppression for low voltage and power systems.

The system will consist of the following:

- Lightning rods at the roof structures interconnected.
- Equipment within six feet of conductors shall be connected to the lightning protection system.
- Connections to the lightning protection system will be provided at each antenna location.
- Down conductors will be provided around the perimeter of the building at no more than 100 feet on center.
- The System will have a UL Master Label
- Major electrical equipment
- The following table lists the major electrical distribution equipment required for the current architectural programming.

Equipment Tag	Description	Characteristics	Location
MVSG	Medium Voltage Switchgear	15kV, metal clad switchgear with drawout vacuum interrupter circuit breakers, automatic transfer for utility source selection, utility primary metering and distribution feeders.	CUP
C-USS	Substation	1500/2000kVA, 13,200-480V, double ended Substation with double crosstie and virtual main transformer. Drawout power circuit breaker switchgear, 480/277V, 3 phase, 4 wire, 65kAIC, main-tie-tie-main arrangement.	Casino Ground level
CP-USS-2	Substation	1500/2000kVA, 13,200-4160V, double ended Substation with double crosstie and virtual main transformer. Drawout power circuit breaker switchgear, 480/277V, 3 phase, 4 wire, 65kAIC, main-tie-tie-main arrangement.	CUP
CP-USS-1	Substation	1500/2000kVA, 13,200-480V, double ended Substation with double crosstie and virtual main transformer. Drawout power circuit breaker switchgear, 480/277V, 3 phase, 4 wire, 65kAIC, main-tie-tie-main arrangement.	CUP
X-USS	Substation	750kVA, 13,200-480V. Power circuit breaker switchgear, 480/277V, 3 phase, 4 wire, 65kAIC.	Exterior Recreation
H-USS	Substation	2000/2666kVA, 13,200-480V, Substation with RMU alternate primary feeds . Drawout power circuit breaker switchgear, 480/277V, 3 phase, 4 wire, 65kAIC.	Hotel
PK-USS	Substation	500kVA, 13,200-480V. Power circuit breaker switchgear, 480/277V, 3 phase, 4 wire, 65kAIC.	Parking Garage
CV-USS	Substation	500kVA, 13,200-480V. Power circuit breaker switchgear, 480/277V, 3 phase, 4 wire, 65kAIC.	Convention
CE-USS, C-LR- USS	Substation	500kVA, 13,200-480V. Power circuit breaker switchgear, 480/277V, 3 phase, 4 wire, 65kAIC.	Casino Ground level
HE-USS, H-LR-USS	Substation	500kVA, 13,200-480V. Power circuit breaker switchgear, 480/277V, 3 phase, 4 wire, 65kAIC.	Hotel
GEN-1,2,3	Diesel Engine Generator Sets	2000 KW Gen-set. 13.2 KV, with Paralleling gear and 10 Medium voltage vacuum circuit breakers.	CUP
UPS-1	Uninterruptable Power Supply	1500 KW, 3-500kW UPS System, 480V, 3p, 3w input and output, static bypass, maintenance bypass, 10 minutes battery	Casino Ground level
UPS-2	Uninterruptable Power Supply	1500 KW, 3-500kW UPS System, 480V, 3p, 3w input and output, static bypass, maintenance bypass, 10 minutes battery	Casino Ground level

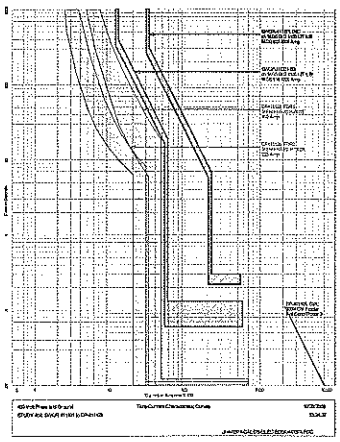
MISCELLANEOUS ELECTRICAL SYSTEMS

Electric Heat Tracing

Electric heat tracing system will be provided for freeze protection of exterior piping systems as required. The heat tracing system will include alarm points reporting back to the BMS.

Required Electrical Studies

The electrical design will include a short circuit and coordination study to identify overcurrent protection devices which will provide a selectively coordinated system for the emergency systems in the building. The design will also include a preliminary arc flash hazard analysis to identify potential arc flash hazards and to develop strategies to mitigate the hazards.



Time Current Curve

In order to provide a baseline database for operation and maintenance of the building, the project specifications will require the following studies to be performed by the installing contractor. All electrical studies will be performed by a registered professional engineer and submitted for review and approval by the electrical engineer and Owner prior to releasing any equipment and shall include the following:

Short circuit: Study shall be conducted at all busses in the system. Study shall be performed for both utility, generator and transition mode. Study shall assume full contribution from all motor loads. A full report shall be provided showing fault currents in all configurations and associated X/R ratio.

Coordination: Study shall provide all settings for programmable trip units and adjustable breakers. Study shall include copies of all TC curves used and graphic and text data indicating proper coordination.

Arc Flash: Study shall indicate working distance for all panels. Study shall include all labeling required per NFPA 70E. Labels will be required in electronic format and installation of labels will be included as a requirement of the specification

ELECTRICAL DESIGN CRITERIA

CODES AND STANDARDS

The design of all Electrical systems must comply with the applicable codes as referenced by the Building Code. The electrical systems will be designed in accordance with the following local and national codes

Codes

Materials, equipment and systems shall meet the pertinent requirements of the Massachusetts State Building Codes and all other authorities having jurisdiction. The following list includes current applicable codes:

- International Building Code with amendments)
- 2010 National Fire Alarm Code (NFPA 72) as referenced by ICC.
- 2014 National Electrical Code (NFPA 70) with amendments)
- International Energy Conservation Code (IECC) with amendments or ASHRAE 90.1-2007

Standards and References

- NFPA, National Fire Protection Association
- 9th Edition Handbook of the Illuminating Engineering Society of North America (IES, NA)

ELECTRICAL POWER CRITERIA

The electrical distribution system will be designed to meet the following design load densities calculated on W/sq. ft. basis (Lighting Power densities will be further developed with the Green Engineer as the design develops:

- General lighting @ 1-2 w/sf
- Restaurant/Kitchen Lighting 1.4 w/sf
- Restaurant/Kitchen Power 25 w/sf
- Retail Lighting 1.4 w/sf
- Retail Power 4 w/sf
- General Power @ 2.0 w/sf
- Casino Power @ 25 w/sf Capacity/ 10 w/sf anticipated demand (8 w/sf for slot machines, 2 w/sf display lighting)
- Casino Lighting @ 2 w/sf
- Mechanical Systems @ 8 w/sf
- Hotel Rooms (lighting and power) @ 3 w/sf

Emergency Systems (NFPA 70, Article 700)

- Egress Lighting @ 0.25 w/sf
- Fire Alarm System @ 0.1 w/sf

Legally Required Systems (NFPA 70, Article 701):

- Smoke Control Systems
- Elevators
- Miscellaneous

Optional Standby Systems (NFPA 70, Article 702):

- The optional standby system is currently sized to accommodate full operation of the central plant, gaming, and selected functions.

Estimated Load Summary

Stage	Space Type	Area (sft)	Demand Load (kVA)	Load Density (VA/sft)
	Casino	82,500	1140.0	13.8
	Casino Support	32,700	125.3	3.8
	Casino Amenities	18,817	104.3	5.5
	Hotel Tower	209,887	584.3	2.8
	Hotel Amenities	8,900	36.6	4.1
	Hotel Support in Podium	16,455	103.7	6.3
	Convention Spaces	47,000	258.0	5.5
	Outdoor Amenities	n/a	694.8	N/A
	Food and Beverage	47,080	418.0	8.9
	Entertainment/Retail	32,360	129.4	4.0
	Spa and Fitness	6,000	95.0	15.8
	CUP/MEP	15,000	2927.7	195.2
	BOH Circulation	-	0.0	N/A
Subtotal		516,699	6617.1	12.8
Total		516,699	6617.1	12.8
Total with 30 percent Future		-	8602.3	N/A

LIGHTING

The ASHRAE 90.1-2007 allowable lighting power densities are listed below. At a minimum these values will be met, with the total building lighting power density not exceeding the code allotted densities.

Below is an example. Edit the information below to suit the project.

ASHRAE 90.1 2007	
AREAS	**LPD (W/ft^2)**
Office-Enclosed	1.1
Office-Open Plan	1.1
Conference - Meeting - Multipurpose	1.3
Lobby	1.3
Lounge/Recreation	1.2
Restrooms	0.9
Corridor/Transition	0.5
Stairs - Active	0.6
Storage - Active	0.8
Electrical/Mechanical	1.5
Workshop	1.9

Lighting Levels

The lighting levels will be determined by the lighting designer. For back of house areas, illumination levels will be selected according to the method described in the 9th Edition Handbook of the Illuminating Engineering Society of North America (IES, NA). IES divides tasks into categories based on object size and contrast. It should be noted that final illuminance may deviate from these recommended values due to other lighting design criteria.

Average Footcandles		
Area	FC Range at Task Area	Weighted FC Avg.
Offices	45-55	30-40
Open Seating Areas	45-55	30-40
Conference Rooms	25-35	25-35
Seminar Room	10-20	10-20
Corridors, Storage, Restrooms, Stairways	5-10	

Calculations

Vanderweil highly recommends scheduling meetings with Owner End-users to ensure that all lighting requirements will be met. Upon receipt and approval of this document, all room criteria documents (if any) that define foot-candle requirements for all spaces will be coordinated and implemented.

Compliance

Lighting calculation results that have lighting target values that vary within 15 percent or more of the target criterion shall be considered acceptable. Where special architectural and/or interiors and/or user situations limit luminaire placement, then excesses up to 25 percent over target value may be considered acceptable.

Light Loss Factor

In most typical spaces, that utilize "normal output" ballasts for fluorescent lamps, a total light loss factor (TLLF) of 0.75 (which includes Ballast Factor (BF) loss, Luminaire Dirt Depreciation (LDD), Lamp Lumen Depreciation (LLD), and Room Surface Dirt Depreciation (RSDD)) will be used for most interior illuminance calculations. A LLF of 0.85 will be utilized in clean room environments. Specific illumination levels are room average illuminances (unless otherwise noted).

Reflectance

Reflectance values will be calculated with 80/50/20 (ceiling/wall/floor) for all general spaces.

Emergency Lighting

The following emergency egress lighting illumination values will be met.

Minimum Maintained Foot-Candle Illumination	
Area	Recommended Average Foot-Candle
Path of Egress	1 FC minimum
Exterior Exit Discharge	1 FC minimum
Exterior Exit Discharge	1 FC minimum
Stair	10 FC minimum

LIGHTNING PROTECTION

The lightning protection system will conform to NFPA 70, NFPA 780, UL 96, UL 96A, and LPI-175. The system will have a UL Master Label.

TECHNOLOGY AND SECURITY SYSTEMS DESCRIPTION

SITE UTILITY DISTRIBUTION

The telephone and cable companies require service pathways to the project. Two geographically diverse pathways are to be provided from different utility pole lines or utility service feed locations. New paths and raceway are required for both service paths. The site/civil drawings will show the route and requirements for these new feeds. Multiple ducts are required for each feed path to support the telephone connectivity and Cable Company feeds, while providing raceway for alternate/future providers.

Two utility demarcation rooms are required, one for each of the two service pathways. Each demarcation room is to be approximately 120 square feet. From this new demarcation room, raceway and feed cables are required to feed the Main Distribution Frame room, ("MDF"), and the secondary MDF that serves the hotel.

TECHNOLOGY INFRASTRUCTURE DESIGN CONCEPTS AND DETAILED REQUIREMENTS

The technology infrastructure consists of the structured cabling system, associated raceways and spaces. This document describes the components, systems and configurations that make up the technology infrastructure.

The technology infrastructure portion of the project does not include the electronic components such as the telephone system, network switching, servers other than those required to operate the security and surveillance systems, POS and/or other operational systems.

Code Minimum

The cabling and associated items are to comply with the relevant codes, specifically with regard to cable rating, grounding, and bonding. Plenum rated cabling is to be used for all interior cabling.

Utility Feeds to the Project

Copper and fiber optic service cabling are anticipated from the telephone company. Coaxial and/or fiber optic service cabling is anticipated from the cable company. These services are to be terminated in the demarcation rooms, grounded per code, and extended to the main and secondary MDF rooms.

Data/Network Connectivity & Circuits

Specific service orders will be generated by the Owner/Operator to each of the relevant service providers. This action is necessary to initiate the actual provisioning of facilities and circuits for the site.

Technology and Security System Space Requirements

Main Distribution Frame - MDF (IT Computer Room)

The MDF rooms will house critical switchgear/servers for the voice and data network, gaming servers, audio/visual servers, entrance facilities equipment (phone/television), and other server / switch based equipment. All walls shall go deck-to-deck. The ceiling height should be at least 9'-6" (prefer 10') from finished VCT floor or sealed concrete. Typical MDF room characteristics are addressed below:

- Approximately 1,200 square feet in size, and rectangular in shape.
- Does not require a raised floor system, or a drop ceiling.
- Have doors should with a minimum of 6 feet in width (double doors) if possible.
- Redundant CRAC units with humidity control.
- Connected to the Telecommunications Grounding System.
- Equipped with a UPS designated for supporting the equipment associated with the MDF and IDF equipment. This UPS will be exclusively for the MDF and IDF equipment and shall not be utilized for other systems. This UPS will need approximately 15 minutes of battery time during power interruption.
- Have no water or plumbing distribution piping routed through or above the MDF. The MDF should not have any water related areas (coffee/break rooms, restrooms, etc.) above the rooms' footprint. If there are areas above with water distribution that cannot be avoided, drip pans will be required.
- Lighting to meet a required 50-foot candles measured from 3 feet of floor surface.
- A clean agent FM-200 fire suppression system. In addition, a pre-action system is required for backup to the FM-200 system.
- Above rack basket tray system. The ladder rack shall be 18 inches wide and be located directly above the rack layout.
- Two levels of cable tray in the MDF.
- First level of tray shall be mounted 84 inches AFF supported by the racks. These ladder racks shall be utilized for distributing fiber and copper connectivity only. The second level of tray shall be mounted at 96 inches AFF and shall by supported by all-thread rods from ceiling deck, or support brackets from the ladder rack at 84 inches. This ladder rack level shall support power cabling only.
- Power cabling for individual racks will be routed from a power panel location in the MDF, through this ladder rack system with a flexible whip.
- Designated power receptacles for each cabinet shall be mounted on the tray, at the rear side of the racks, directly above the cabinet it is designated to serve.
- Have at least one wall with fire rated plywood for wall mounted equipment. Cable tray will connect the wall field to the ladder rack system for the cabinet/relay racks.

Surveillance Head End Room

The security head end room will be approximately 1,200 square feet and will house the recording and management functions. Power, cooling and fire suppression systems are required for this space.

- All walls shall go deck-to-deck. The ceiling height should be at least 9'-6" (prefer 10 feet) from finished VCT floor or sealed concrete.
- The security head-end room will not require a raised floor system.
- The security head-end room will not require a drop ceiling tile system.
- The doors should be a minimum of 6 feet in width (double doors) if possible.
- The security head-end room will require redundant CRAC units with humidity control.

- The security head-end room will be connected to the telecommunications grounding system built in accordance to the TIA/EIA 607 Standard for Commercial Building Grounding and Bonding. An eight-lug grounding bar, attached to the main ground bus via a 6-awg copper cable, provided by the general contractor will be required. Depending on the layout, there may be a requirement for at least two grounding bus bars in the room.
- The security head-end room will require a UPS designated for supporting the equipment associated with the security head-end room equipment. This UPS will need approximately 15 minutes of battery time during power interruption. Backup emergency power is required for the contents of this room.
- There should be no water or plumbing distribution piping routed through or above the security head-end room. The security head-end room should not have any water related areas (coffee/break rooms, restrooms, etc.), above the rooms' footprint. If there are areas above with water distribution that cannot be avoided, drip pans will be required.
- The security head-end room should have lighting to meet a required 50-foot candles measured from 3 feet of floor surface.
- The security head-end room will require a clean agent FM-200 fire suppression system. In addition, a pre-action system may be required for backup to the FM-200 system.
- The security head-end room will require above rack cable tray system. The tray shall be 18 inches wide and be located directly above the rack layout.
- There shall be two levels of cable ladder rack in the security head-end room.
- The MDF will have at least one wall with fire rated plywood for wall mounted equipment. Ladder rack will connect the wall field to the ladder rack system for the cabinet/relay racks.

Security Command Center

The security monitoring room will house custom security furniture designed by the contractor and Owner and/or Operator security Chief. The actual size of this room is not yet determined.

- Receptacles will need to be on emergency power.
- Additional cooling beyond typical scenarios will be required, due to multiple monitors and PC stations located in the room.

Security Devices and Locations

- Provide CCTV cameras throughout the exterior, parking garage, gaming, back-of-house, elevator lobby, elevator cars, and as required in common areas.
- Provide access control and intrusion detection as required to comply with Owner and/or Operator policy as well legislated compliance requirements. Hotel guestroom locking is to be a simple standalone door mounted system, separate from the access control system.
- Provide intrusion detection for areas that are zoned separately within the access control system.
- Provide emergency blue phones in the outdoor parking, indoor parking and other areas as identified during the detailed design phase.

Technology Rooms - IDFs

The IDF rooms located throughout the gaming spaces, back of house areas, and on each hotel floor will provide the horizontal distribution point for the horizontal voice/data, audio-visual equipment, security distribution equipment, and associated cabling for each respective floor. IDF rooms will be approximately 100 square feet, housing cable terminations, interfaces and common equipment. IDF rooms are to be located to provide maximum station cable lengths of not more than 250 total cable feet. IDF rooms are required at the perimeter of the gaming floors to provide connectivity to the gaming positions/equipment.

- Each IDF will require a 7x24 HVAC. The HVAC systems in the IDFs should be on emergency generator. The cooling unit shall be ceiling fed and not take up space within the room.
- All walls should be covered with ¾ inch plywood and painted with flame retardant paint.
- Each IDF will require sleeves/fire stop systems above the cable tray for horizontal cable distribution. 18 inches cable tray shall be provided for at least 20' leaving the IDF.
- Hotel IDF rooms are to be vertically aligned and equipped with three 4 inches EMT sleeves. Other IDFs are to have two 3 inches EMT runs to the serving MDF room.
- A pre-action sprinkler system is required.
- Each IDF will require multiple L6-30R receptacles.

Backbone Distribution

Backbone distribution cabling will be installed from the demarcation room to the primary and secondary MDF, and onto each IDF.

Voice Backbone

Voice backbone cabling will be minimal since the majority of the telecommunications will be delivered through Voice over Internet Protocol, ("VoIP"). A limited voice cabling system is required to support connectivity for special systems including:

- Fire Alarm Control Panel
- Elevator emergency communications
- Security system alarm reporting
- Specialty systems, to be defined.

Data/Network Backbone

Data backbone cabling will consist of single mode OS2 and multimode OM-4 fiber optic cabling. Each IDF will be cabled with a minimum of 6 strands of single mode and 212 strands of multimode cable from the main MDF room or the hotel MDF room, as appropriate. The two MDF rooms are to be connected with 24 strands of single mode and 48 strands of multimode fiber optic cable.

Video Backbone

Video distribution will occur over a hard-line trunking system and RG-6 drop cabling. Amplifiers and splitters are required to provide sufficient signal level at each outlet. The amplifiers and splitters will be distributed throughout the project and located within MDF and IDF rooms.

Station Cabling, Materials and Standard Configurations

The structure cabling system will consist of Category 6 plenum rated station cable with Category 6 patch panels, jacks and patch cords. Separate cable colors are to be used for voice, data, gaming, wireless and other major systems. Each major system is to have its cables terminated on separate, color coded, patch panels, to simplify connectivity management.

A 20 year extended application warranty is to be provided for the entire cabling system.

Wireless Location Cabling

Two Category 6 cables will be installed to each wireless access point location. 20 feet of slack cable will be coiled and secured at each access point location. Patch Cables, Station, and Closet

Wireless Access Points are to be placed on 75' radius throughout the project.

Wireless Access Points will be installed by the Owner and/or Operator selected system provider, after the majority of the construction has been completed.

Two patch cords are to be provided for each installed cable. The color of the patch cords is to match the color of the station cable. The actual length of the user and closet location patch cables will be defined during the project DD phase.

Specific Cabling Configurations

Below is a summary of specific design criteria applicable for various room types. The room types given are a representative listing of what might be expected for a facility of this type.

ADMINISTRATION (BOH) OFFICES

Low Voltage

Two Cat-6 cables at each outlet location, typically at the desks in closed and open work areas, dedicated printer locations and as required for AV systems.

Ballrooms (Low Voltage)

Cabling Pathways

- Min 1 inch conduit will be routed underground to any location requiring communications that cannot be reached from a wall.
- A separate IDF room may be required for this space. The room will be designed to match the standards and specifications located in section 1 of this document.
- The room will be connected to the main building network backbone via a minimum of two 4 inch conduits with a pull box located every 100 feet.
- Multiple strand fiber cabling from IT/Data room and Audio/Visual head-end.
- Podium(s) will get (2) Cat-6 for network and (1) Cat-6 for phone at each station. Audio and video control panel.

- (1) Cat-6 for wall phone in IDF and electrical rooms.
- Each POS station will have (2) cat-6 for network and (1) cat-6 phone (for rolling bars).

Casino (Low Voltage)

If accessible floor is available, cabling is to be run below the raised floor. Where accessible floor is not available, cabling is to be routed through the ceiling and/or through conduit below or in the floor.

J-Hooks or other suitable cable management product to be used under the raised floor for routing to zone boxes

All cabling shall be routed to the nearest IDF closet unless otherwise noted. No copper cabling shall exceed 295' from termination within IDF closet to device location.

Cages and Total Rewards

- Each POS station will have (2) cat-6 for network and (1) cat-6 phone.
- (2) Cat-6 for printers/fax.
- (2) Cat-6 player tracking.
- (2) cat-6 for any additional system requiring data connections.

Surveillance (CCTV) Cameras and Alarms

- (1) Cat-6 for data and (1) 16/2 pwr.
- (1) 20/2 conductor for squeeze alarms.

Door access system.

(1) Standard security cable bundle from security controller in IDF room to each device as specified by system equipment. See surveillance documentation for exact requirements

- Door card reader
- Door strike
- Maglock

(1) Cat-6 to main (master) key box (RS 432 serial from main box to slave boxes (Max 3 boxes) if located within cage.

Each window to get (4) Cat 6 and (8) electrical outlets

Gaming - Slot Machines

The slot floor will be managed with a fiber zone distribution box solution consisting of approx 50 boxes. Cabling to each slot floor zone box consist of minimum of (1) 48 strand MM armored cable. Each zone box will feed (8) slot banks.

Cabling to each bank will consist of minimum of (1) 6 strand MM duplex armored) fiber cable. The armored fiber cable may be bid as an alternate to un-armored cable.

A network switch, provided and installed by the owner's IT department, will be placed within the bank. The connection of the cabling to the slot machines will be performed by a slot tech. This division of labor is to be noted in the specifications and on the appropriate detail drawings. A Cat-6 patch cord will connect each slot machine to the slot bank switch. Patch cords provided by Wiring Vendor, installation by Owners.

Fiber Cabling shall be terminated with LC connectors with an additional 3' service loop within the slot pedestal.

Gaming - Table Games

Pit stands. Cabling to each pit stand will consist of minimum of 4 Cat-6 cables. (White)

- Alternate (1) 6 strand OM3 MM duplex 50/125 armored cable
- Network switch, provided by the owner's IT department, will be placed within the pit stand. The switch will be powered via local ups or a central system, if available. The switch will be mounted on a shelf within the pit stand. Cabling shall be installed in an organized manner to avoid cluttering an easy change out for maintenance equipment failure. The final specific cabling of the pit and adjacent connections is to be finalized by the Owner. Options include feeding the pit location with fiber to a local switch and/or feeding copper drops from the serving wiring closet.

Elevators, Public and Service (Low Voltage)

Provide, install and terminate (1) Cat-6 for wall phone. In elevator equipment rooms.

Provide and install (1) category 6 cable per elevator to the appropriate elevator machine room from the nearest IDF for the elevator cab telephone. Terminate to wall mounted punch-down block and add Cat-6 cable from block to traveling harness for connection to elevator.

Provide and install (2) Cat-6 and/or (1) RG6 cable per elevator to the appropriate elevator machine room from the nearest IDF for marketing video. Terminate to wall mounted CATV Tap and add Cat-6 and/or coax to traveling harness for connection to elevator.

Provide and install (1) category 6 cable to each elevator machine room for card access.

Provide and install (1) category 6 and (1) 16/2 conductor cable to the appropriate elevator machine room for elevator car surveillance. Terminate to wall mounted punch-down block and add (1) Cat-6 and (1) 16/2 power conductor cable from block to traveling harness for connection to elevator.

Employee Dining Room, Lockers, and Back of House (Low Voltage)

- (1) Cat-6 for employer card swipe (turnstiles).
- (2) Cat-6 for (2) employee kiosk.
- (2) Cat-6 for (2) Internet stations and typical desks, work areas, etc.
- (2) Cat-6 cables and or coax to each LCD or plasma (specified by system selection) for TV's .
- (4) Cat-6 for 2 POS locations.(Dependent upon employee meal policy.)

Hotel Corridor/Stairways (Low Voltage)

- Provide (1) Cat-6 to each wireless access points in corridors for shared guest internet access.
- Provide speakers in corridors connected to main sound system.
- Provide (1) Cat-6 to each wall phones in elevator vestibules.
- Provide (1) Cat-6 to each wall phones in mechanical rooms.
- Provide (2) Cat-6 to each Time Clock.

Hotel Guestrooms

Guestroom cabling will be coordinated with the specific requirements and layouts of the spaces. The distribution of connectivity within the hotel may be based on a traditional copper-to-IDF configuration, a passive optical LAN, or distributed switching environment. Typical room connectivity includes:

- (1) Cat-6 to wall phone
- (1) Cat-6 to Bathroom wall phone
- (1) Cat-6 to IP mini bar
- (1) Cat-6 to phone at desk location
- (1) Cat-6 to night stand
- (2) Cat-6 to TV location for IP TV, note the guestroom video distribution system is to be defined, but will likely be based on an IP video distribution system.

Meeting Rooms (Low Voltage)

- (2) Cat-6 per jack per meeting room wall.
- (2) Cat-6 for printer/fax.
- Conference room table.
  - Coordinate with furniture selection for custom data and communications port placement.
  - Min. (6) Cat-6 for network and (2) phone.
  - J-box location in table for video conferencing equipment control.
- (2) Cat-6 per for wireless antennae.
- (2) Cat-6 cables and or coax for A/V (DVP and cable) to TV/screen.
- Power & data is to be under the table.

Pre-Function Rooms (Low Voltage)

- (2) cat-6 for network and for phone at desk locations.
- Surveillance (CCTV) Cameras.
  - (1) Cat-6 for data and (1) 16/2 pwr.
- (2) Cat-6 cables and or coax (specified by system selection) for A/V.

Receiving Dock (Low Voltage)

Each office will have (2) cat-6 for network and phone.

(1) Cat-6 to wall phone(s).

Surveillance (CCTV) Cameras

- (1) Cat-6 for data and (1) 16/2 pwr.
- Door Access
  - (1) Cat-6 or multi conductor cabling from security controller in IDF room to each device as specified by system equipment. See surveillance documentation for exact requirements.
  - Door card reader.
  - Door strike.
- (2) Cat-6 cables and or coax (specified by system selection) for TV's (if required).
- 14/2 conductor to each speaker zone for paging and music.
- (1) Cat-6 or serial conductor to microphone.

Restaurants and Bars (Low Voltage)

Cabling pathways

- Minimum 1 inch conduit will be routed underground to any location requiring communications that cannot be reached from a wall.
- Two 2 inch conduit to be routed from the MDF to the common wiring location within the space.

Cabling infrastructure:

- If outside vendor then the POS system must match the main building's POS system to eliminate any communications problem.
- (2) Cat-6 cables will provide an ISDN connection from the MDF if a separate vendor network is needed.
- 50/125 Multimode OM3 fiber and or (25) pair copper from MDF may be needed if separate PBX is required.
- (1) Cat-6 each for 2 wall phones located in kitchen.
- Entry podium will get (2) stations with (2) Cat-6 for POS network and phone at each station. (1) Cat-6 for player rewards if offered.
- Audio and or lighting control may be located at podium (coordinate with A/V engineer).
- All POS register stations will get (2) Cat-6 for data and (1) Cat-6 for phone.
- Each waitress station will get (2) Cat-6 for each screen and printer station.
- Each POS kitchen display screen (KDS) or thermal printer will get (2) Cat-6 per unit.
- (1) Cat-6 for each wireless device for seating if required.
- (1) Cat-6 for menu board/display.

Surveillance (CCTV) Cameras

- (1) Cat-6 for data and (1) 16/2 for power.
- (1) 20/2 conductor for squeeze alarms.

Audio/Visual

- (2) Cat-6 cables and or coax for A/V (DVP and cable) at TV locations.

Retail Shops (Low Voltage)

- Retail spaces will be treated as shell areas and provided with two 2 inch EMT raceways to the main MDF room.

Surveillance Room (Low Voltage)

- Each station will have two Cat-6 from surveillance switch room for PC and (1) Cat-6 for keyboard (1) Cat-6 for phone.
- Coax cabling from switch room for desktop or wall field monitors.
- Two Cat-6 for printer/fax.
- Serial and Cat-6 cabling for security key boxes.
- Each administrator's office station will have 2 x (2) cat-6 for network and (1) cat-6 phone.

Wiring Closet Termination Standards

Voice Cabling Termination

- Voice cabling: the limited voice cables are to be terminated on wall mounted 110 blocks for simple connection to the voice riser cable. Where possible, voice cables are to be run to the MDF for connection to the carrier services.

Data Cable Terminations

- Data cabling, for data devices and VoIP telephones are to terminate at RJ-45 patch panels.

Wireless Outlet Terminations

- Wireless access point cables are to terminate in dedicated, color identified, patch panels.

Jack and Faceplate Color and Configuration

- Colors and finishes are to be defined during the DD phase.

Public Address System

No dedicated public address system is required.

Master Clock System

No master clock system is required.

Raceway and Support Systems

Where provided, cabling is to be installed in basket tray or conduit. Where such raceway is not shown, J-hooks are to be provided at four foot intervals to provide cable support.

Where cables are installed under the raised floor, they are to be installed in conduit, or in small basket tray.

Telecommunication Grounding System

A uniform telecommunications grounding and bonding system shall be provided in accordance with EIA/TIA-607, Grounding and Bonding Requirements for Telecommunications n Commercial Buildings. This system shall be designed in conjunction with the electrical power grounding system.

The telecommunications grounding backbone shall consist of solid copper bus bars and copper conductors interconnected with the building grounding system at the service entrance equipment.

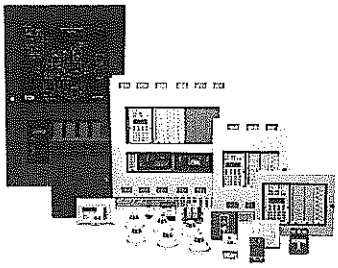
Bonding conductors shall be #6 AWG copper conductors, green in color or marked appropriately, and installed in continuous lengths.

The telecommunications ground busbars shall be a minimum of 1/4-inch thick, solid copper bar, electro tin plated, and insulated from their supports.

FIRE ALARM SYSTEMS DESCRIPTION

GENERAL SYSTEM ARCHITECTURE

The fire alarm system head-end fire alarm control unit and backbone technology (FACU) will be addressable, multiplex signal type.



Fire Alarm Equipment

Peer-to-peer communication between FACUs will be via supervised network connectivity. Primary command and control of the completed FACU network will be from the Stage II fire command center.

Coordinated emergency voice evacuation messaging (pre-recorded or manual page capable) will be transmitted via the network backbone and processed by distributed digital tone generators and amplifiers.

Pathway Class (A, B, C, D, E, X) and Survivability (Level 0, 1, 2, 3) for circuits will be designated based upon functional importance, evacuation zone arrangement and risk of failure.

Alarm, trouble and supervisory signals will be transmitted to a remote supervising station via Digital Alarm Communicator Transmitter or Radio Alarm Transmitter.

FIRE ALARM SYSTEMS

Grand Ballroom, Casino, Spa & Retail

Head-end / backbone:

Networked addressable control units; FACUs and terminal cabinets located in emergency electric equipment rooms and remote annunciator(s) in readily accessible locations. Retail tenants will be provided with dedicated terminal cabinets for connection to the backbone.

Manual Initiating Devices:

- Manual pull stations at each exit from each floor.
- Other approved locations as directed by the local fire official.

Smoke Detection (Partial Coverage):

- Electrical equipment rooms.
- Local at each fire alarm control unit / remote power supply / remote amplifiers
- Locations necessary for required fire safety functions such as elevator recall, AHU control, smoke damper actuation, etc.

Occupant Notification:

- Emergency voice evacuation messaging and synchronized visual strobes.

Suppression System Actuation:

- Supervised, dedicated releasing control units, initiating devices and alarms for MDF/IDF suppression systems.
- Supervision of commercial cooking hood fire extinguishing systems.

Anticipated Fire Safety Functions:

- Elevator recall.
- HVAC system control.
- Door release.
- Control of entertainment sound systems and lighting.

Hotel Tower

Head-end / backbone:

- Networked addressable control units; FACUs located in Fire Command Center, emergency electric equipment rooms and remote annunciator(s) in readily accessible locations. Retail tenants will be provided with dedicated terminal cabinets for connection to the backbone.

Manual Initiating Devices:

- Manual pull stations at each exit from each floor.
- Other approved locations as directed by the local fire official.

Smoke Detection:

- Hotel guest rooms (with local sounder-bases).
- Hotel corridors and common spaces.
- Electrical equipment rooms.
- Local at each fire alarm control unit / remote power supply / remote amplifiers
- Locations necessary for required fire safety functions such as stair pressurization, elevator recall, AHU control, smoke damper actuation, etc.

Occupant Notification:

- Emergency voice evacuation messaging and synchronized visual strobes.

Suppression System Actuation:

- Supervised, dedicated releasing control units, initiating devices and alarms for MDF/IDF suppression systems.
- Supervision of commercial cooking hood fire extinguishing systems.

Anticipated Fire Safety Functions:

- Elevator recall.
- Stairwell pressurization systems.

- Fire Command Center Interfaces
- HVAC system control.
- Door release.
- Control of entertainment sound systems and lighting.

Parking Garage

Head-end / backbone:

- Networked addressable control units; FACUs located in emergency electric equipment rooms and remote annunciator(s) in readily accessible locations.
- Supervised conventional devices will be used in unconditioned areas open to the outdoors.

Manual Initiating Devices:

- Manual pull stations at each exit from each floor.
- Other approved locations as directed by the local fire official.

Smoke Detection (Partial Coverage):

- Electrical equipment rooms.
- Local at each fire alarm control unit / remote power supply / remote amplifiers
- Locations necessary for required fire safety functions such as elevator recall, AHU control, smoke damper actuation, etc.
- Conventional heat detectors supervised via addressable monitor modules in unconditioned areas.

Occupant Notification:

- Audible horns and synchronized visual strobes.

Suppression System Actuation:

- None.

Anticipated Fire Safety Functions:

- Elevator recall.

FIRE COMMAND CENTER

The (Stage II) fire command center must be enclosed in 1-hr fire resistive rated construction with an area no less than 96 square feet (least dimension no less than 8 ft) and contain the following features:

- The emergency voice/alarm communication system control unit.
- The fire department communications system.
- Fire detection and alarm system annunciator.
- Annunciator unit visually indicating the location of the elevators and whether they are operational.
- Status indicators and controls for air distribution systems.

- The fire-fighter's control panel required by section 909.16 for smoke control systems installed in the building.
- Controls for unlocking stairway doors simultaneously.
- Sprinkler valve and water flow detector display panels.
- Emergency and standby power status indicators.
- A telephone for fire department use with controlled access to the public telephone system.
- Fire pump status indicators.
- Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, fire-fighting equipment and fire department access and the location of fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions.
- Work table.
- Generator supervision devices, manual start and transfer features.
- Elevator fire recall switch in accordance with ASME A17.1.
- Elevator emergency or standby power selector switch(es), where emergency or standby power is provided.
- Public address system

EMERGENCY RESPONDER COMMUNICATION SYSTEM

The Stage I and Stage II structures will be provided with an FCC certified Class B Bi-directional UHF Amplifier(s) for use by emergency responder communications.

FIRE ALARM DESIGN CRITERIA

CODES AND STANDARDS

Building and Fire Codes

Building: 2010 Building Code of New York State

Fire: 2010 Fire Code of New York State

Applicable Design Standards

National Fire Protection Association (NFPA)

- NFPA 70 - National Electric Code
- NFPA 72 - National Fire Alarm Code

PATHWAY PERFORMANCE

Pathway Cass Designations

- Signaling Line Circuits: Class A
- Notification Appliance Circuits: Class A
- Supervision Circuits: Class B
- Network Communication: Class X

Pathway Survivability

Level 3 Network communication and emergency evacuation circuits that cross multiple evacuation zones.

Level 2 Note Used.

Level 1 All other circuits.

OCCUPANT NOTIFICATION

Visible Characteristics

Visible devices will be spaced in accordance with NFPA 72 section 7.5.4.1.1. Generally a 15 cd unit will cover a 20' x 20' area a 30 cd unit will cover a 28' x 28' area, a 60 cd unit will cover a 40' x 40' area and a 110 cd unit will cover a 54' x 54' area. Visible devices will be located no more than 15 ft from the end of the corridor with a separation no greater than 100 ft between appliances. Where there is an interruption of the concentrated viewing path, such as a fire door, an elevation change, or any other obstruction, the area will be considered as a separate corridor. For corridors greater than 20' wide, the spacing allocation for rooms will be applied. NFPA 72 section 7.4.2.

Audible Characteristics

Audible alarm notification appliances will be provided throughout. Audible alarm notification appliances shall provide a sound pressure level in accordance with NFPA 72. Where the average ambient noise is greater than 105 dBA, visible alarm notification appliances shall be provided in accordance with NFPA 72 and audible alarm notification appliances shall not be required.

To ensure that audible public mode signals are clearly heard, they shall have a sound level at least 15 dB above the average ambient sound level or 5 dB above the maximum sound level having a duration of at least 60 seconds, whichever is greater, measured 5 ft above the floor in the area required to be served by the system using the A-weighted scale (dBA). Sleeping areas signals shall be minimum 75 dBA.

The NFPA average sound levels are listed below.

Table A.7.4.2 Average Ambient Sound Level According to Location

Location	Average Ambient Sound Level (dBA)
Business occupancies	55
Educational occupancies	45
Industrial occupancies	80
Mechanical rooms	85
Storage occupancies	30

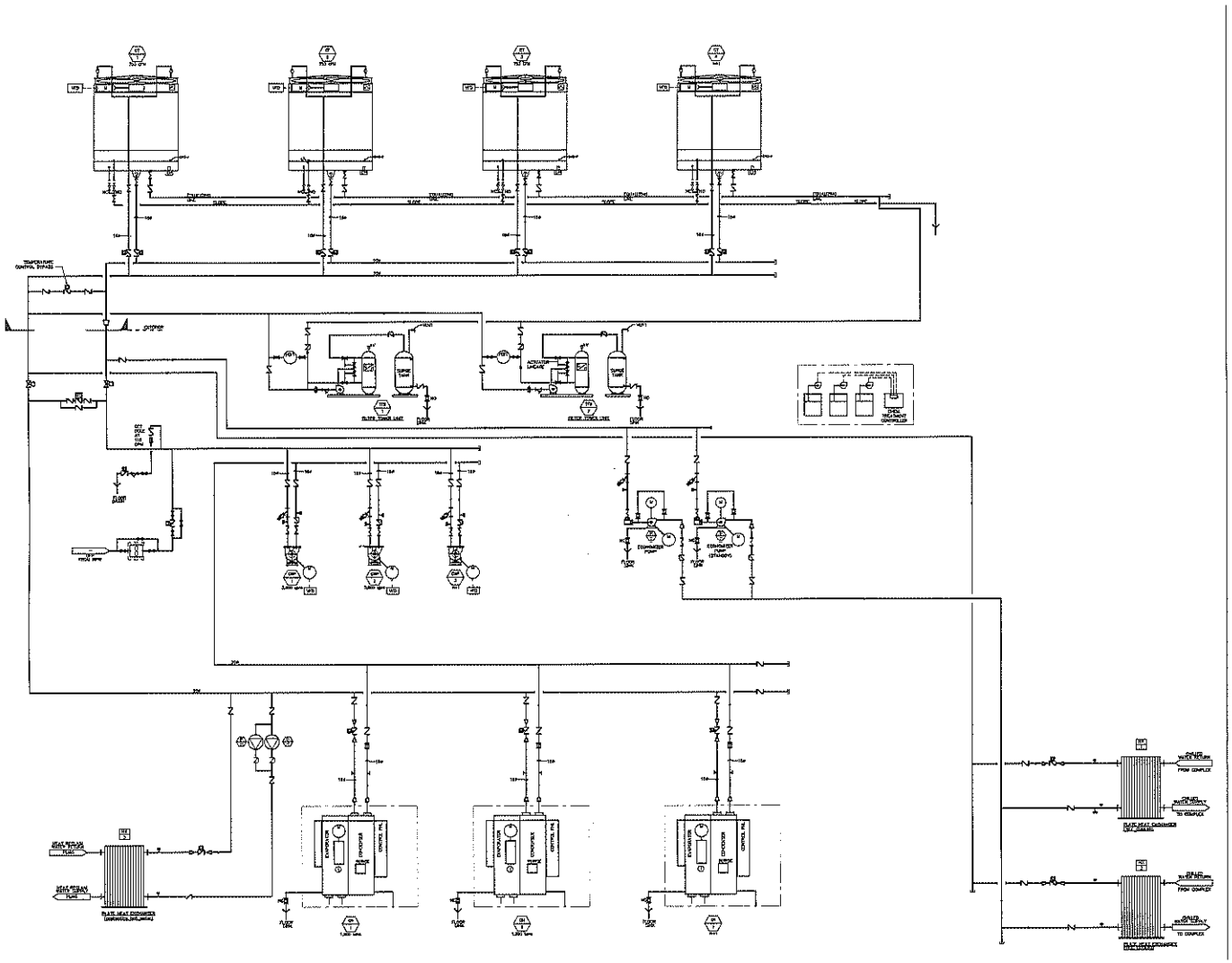
EMERGENCY VOICE EVACUATION

Minimum delineation of paging zones:

- Elevator groups.
- Exit stairways.
- Each floor.

Voice messaging shall be intelligible with the defined acoustically distinguishable spaces (ADS) with the exception of the following:

- Private bathrooms, shower rooms, saunas and similar.
- Mechanical, electrical, elevator equipment rooms.
- Elevator cars.
- Individual offices.
- Kitchens.
- Storage rooms and closets.
- Rooms or spaces where intelligibility cannot be reasonably predicted.



M801 CONDENSER WATER ONE LINE DIAGRAM

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

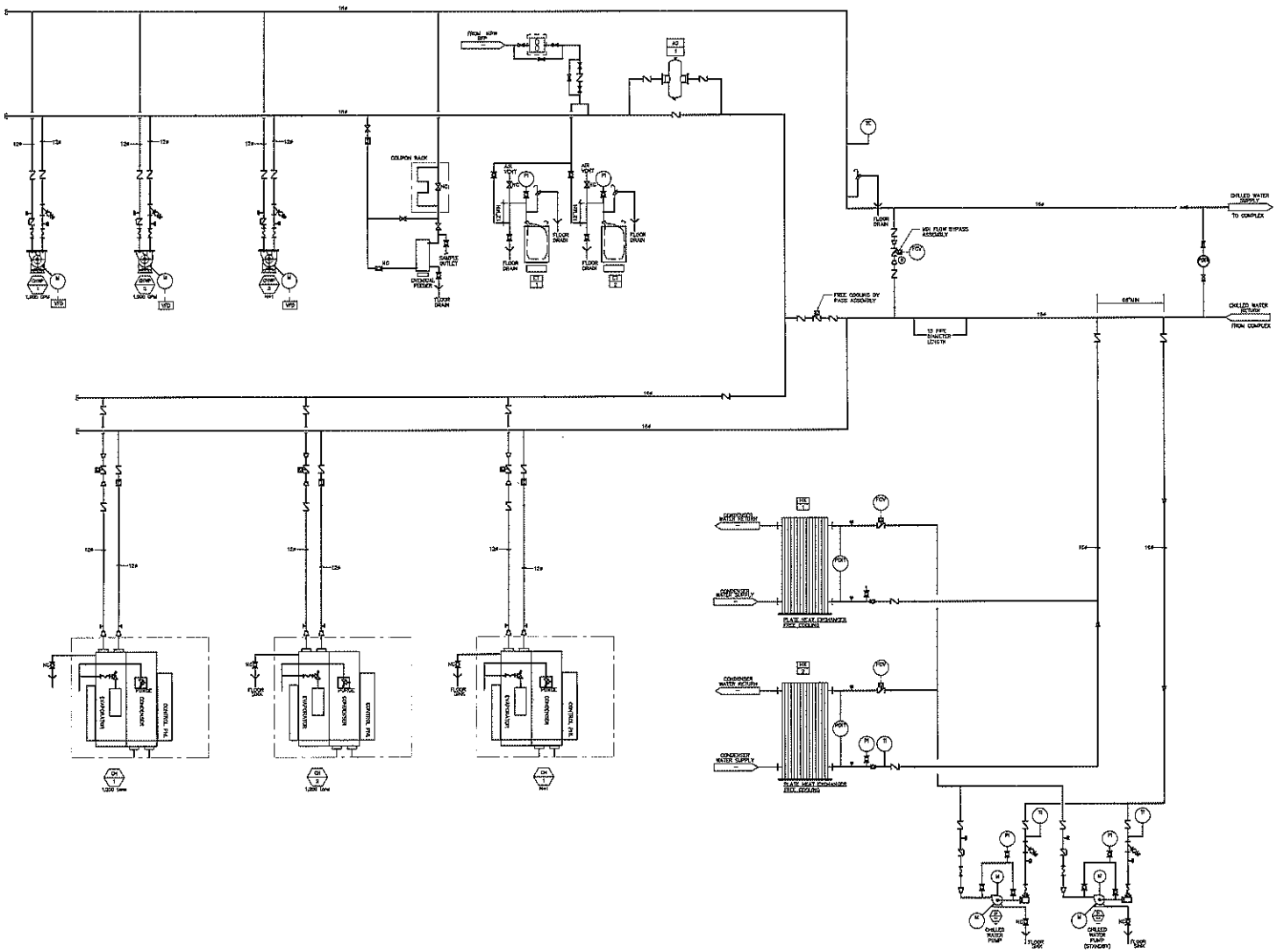
DATE:

June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO



M802 CHILLED WATER ONE LINE DIAGRAM

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

--

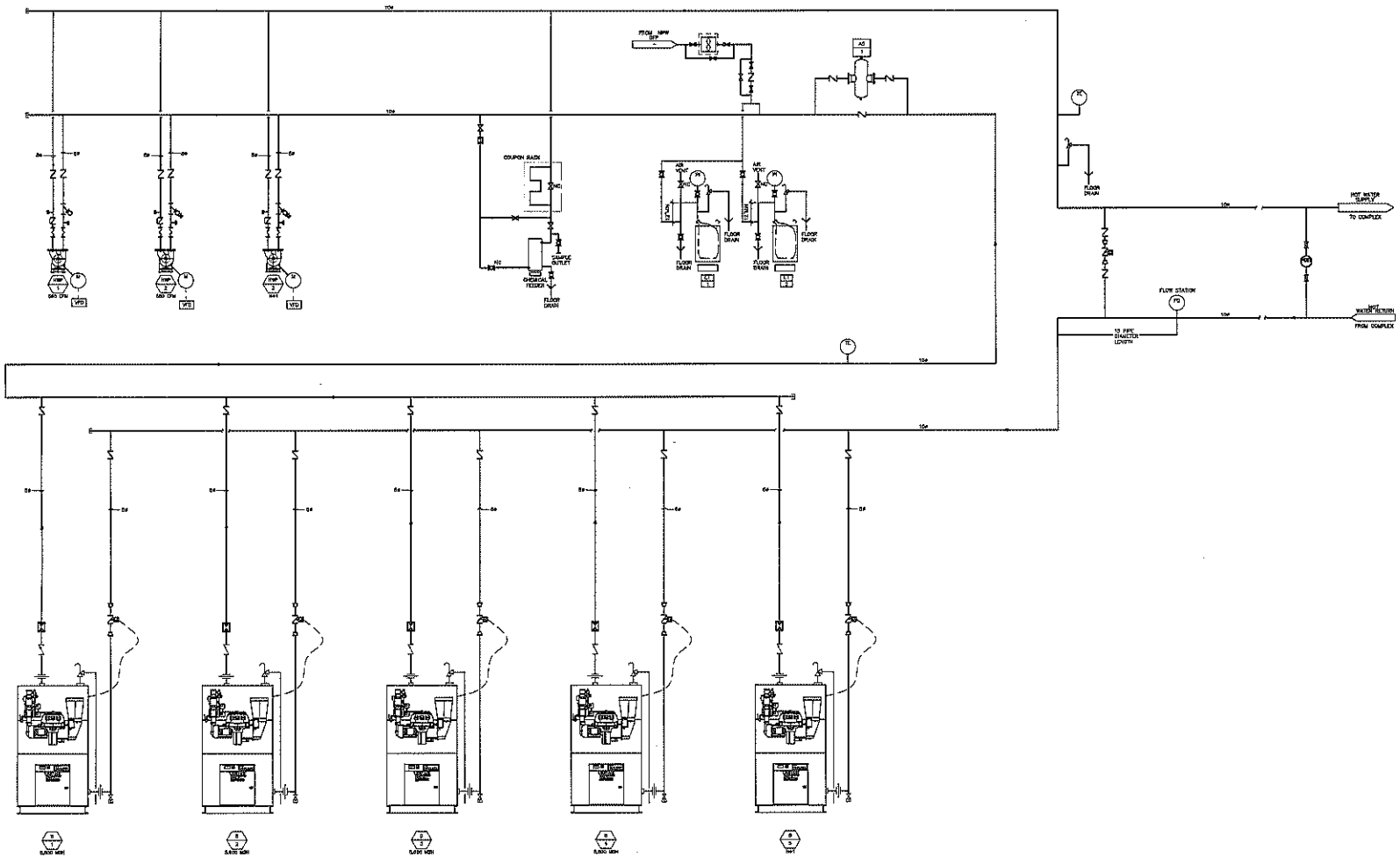
DATE:

June 30, 2014

NORTH

at 24" x 36"

The Grand Hudson HOTEL & CASINO



M803 HEATING HOT WATER ONE LINE DIAGRAM

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

--

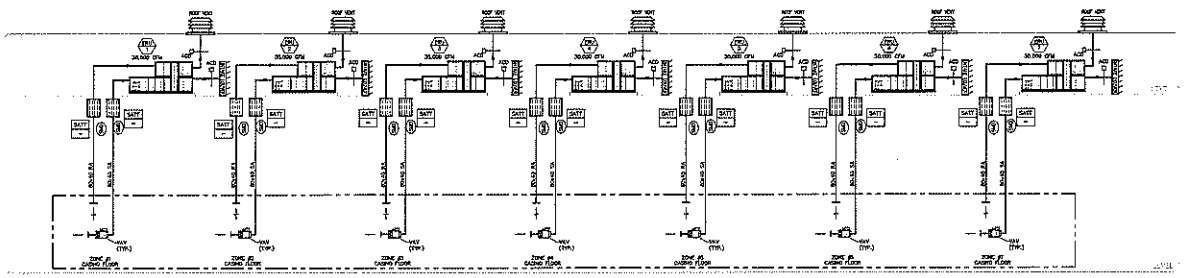
DATE:

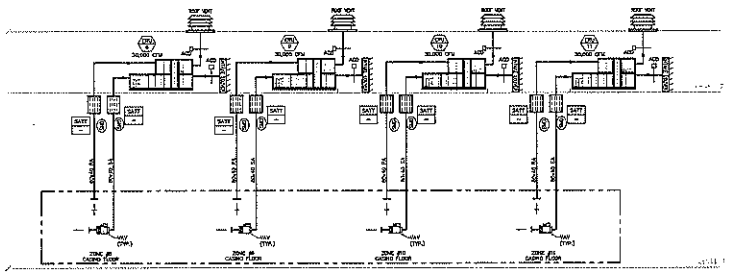
June 30, 2014

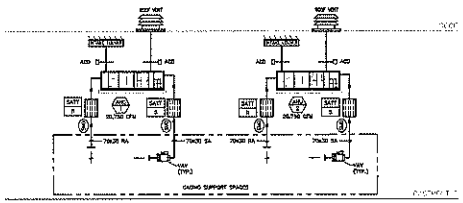
NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO







M804 AIRSIDE ONE LINE DIAGRAM

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

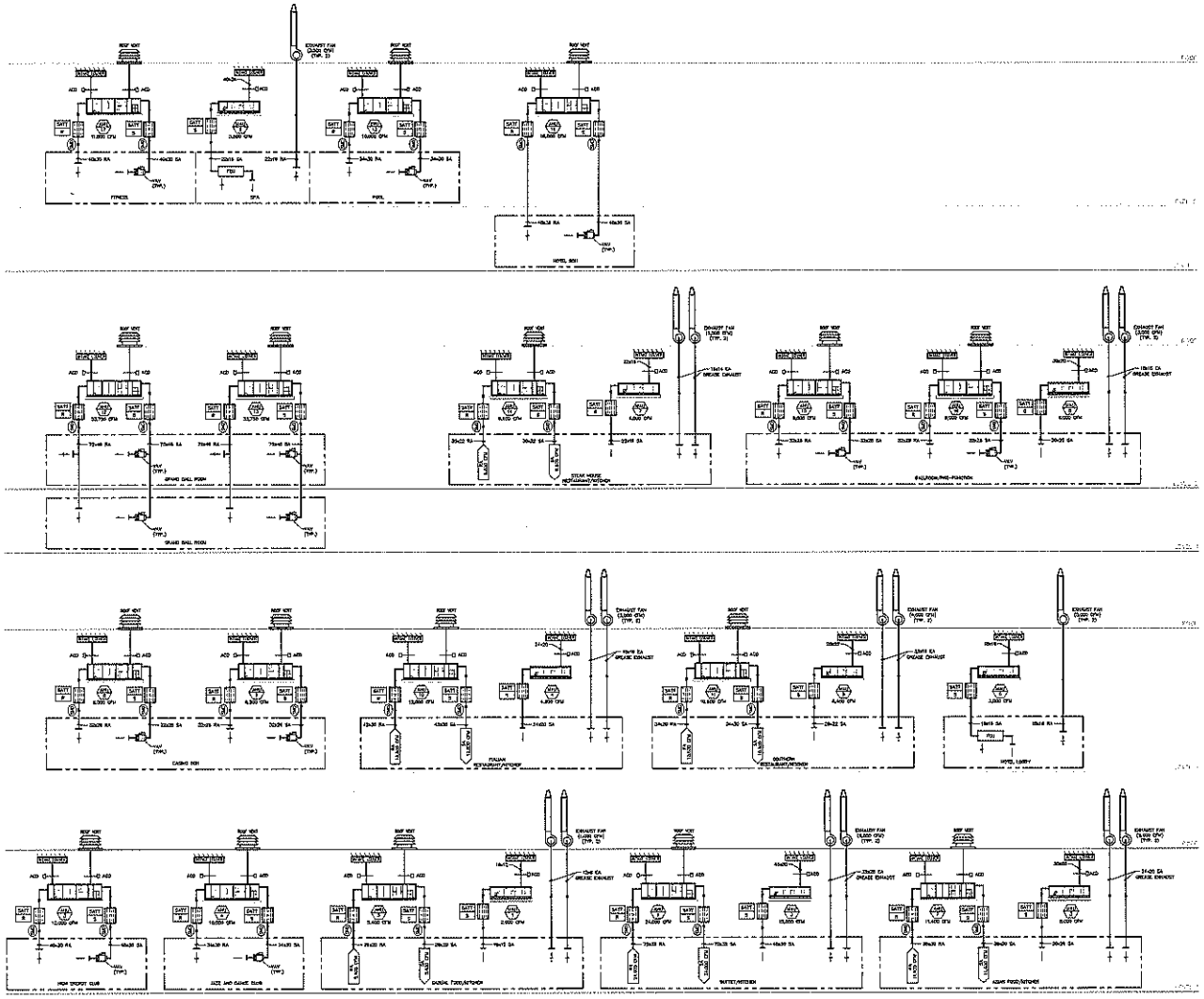
DATE:

June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO



M805 AIRSIDE ONE LINE DIAGRAM SHEET 2

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

DATE:

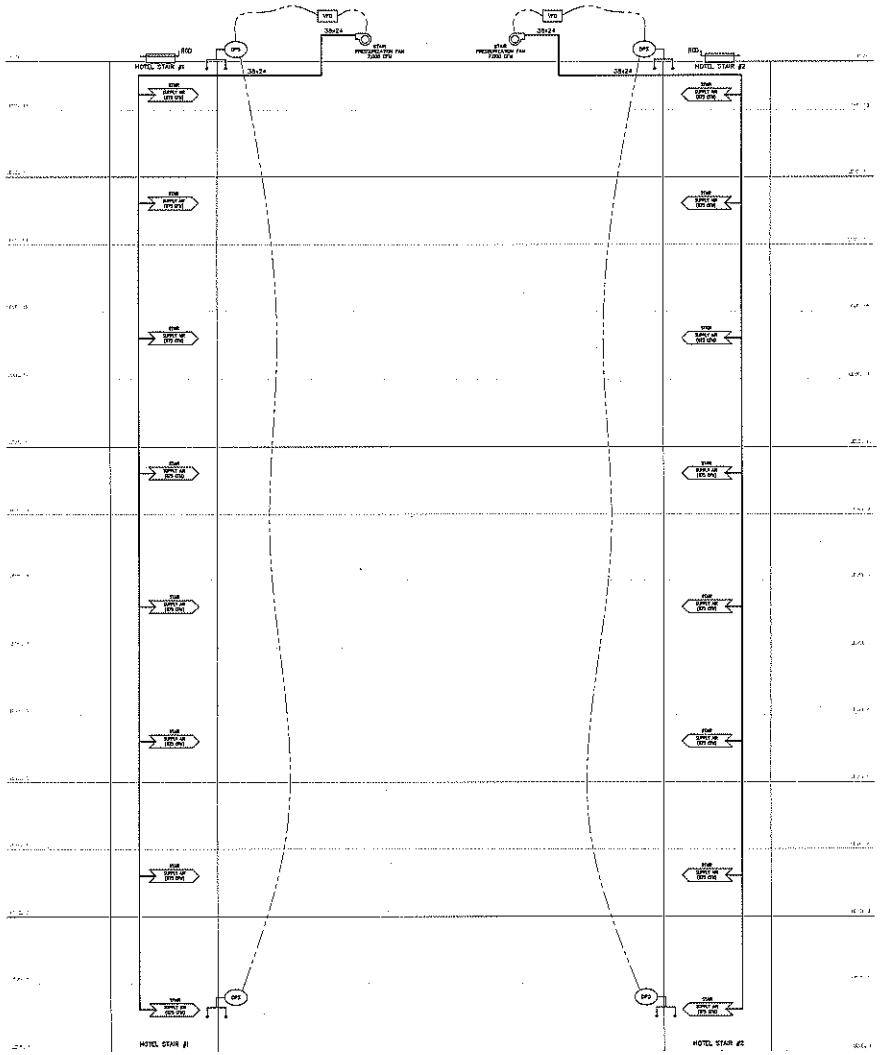
June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'

at 24" x 36"

The Grand Hudson HOTEL & CASINO



M806 LIFE SAFETY ONE LINE DIAGRAM

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

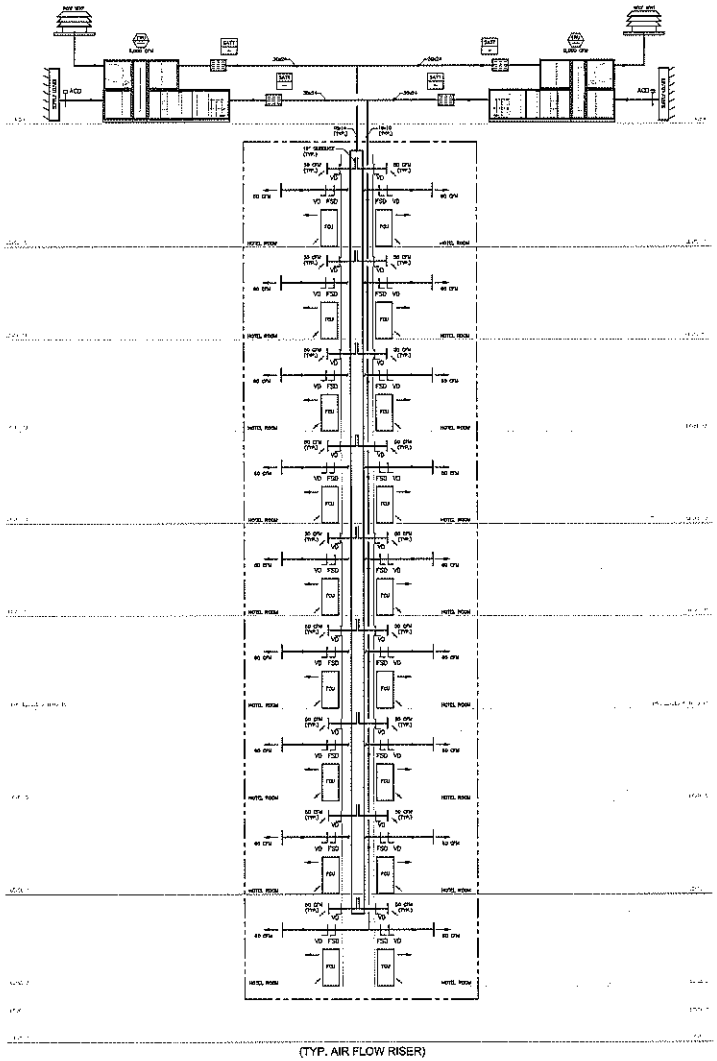
DATE:

June 30, 2014

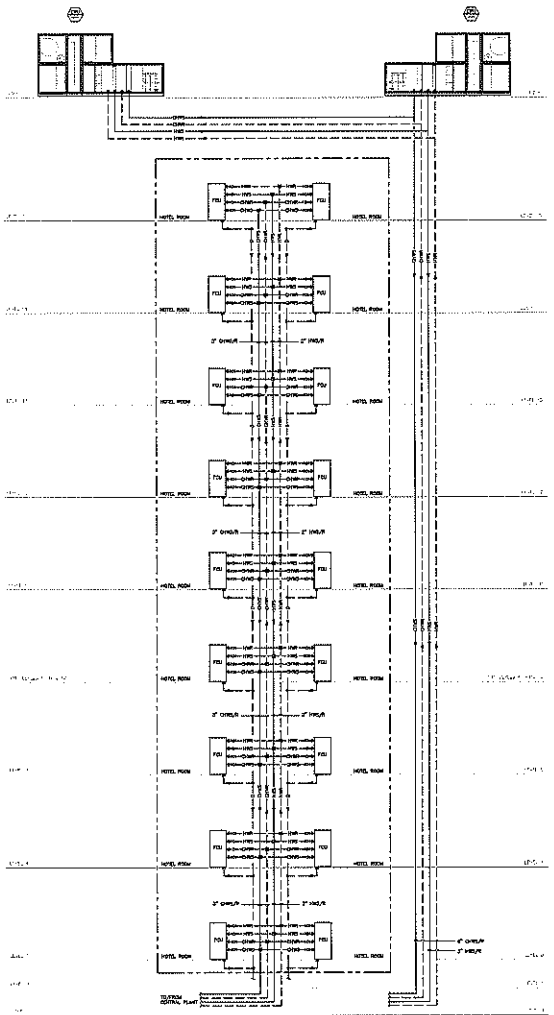
NORTH

at 24" x 36"

The Grand Hudson HOTEL & CASINO



(TYP. AIR FLOW RISER)



(TYP. WATER FLOW RISER)

M807 HOTEL ONE LINE DIAGRAM

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
(See below)

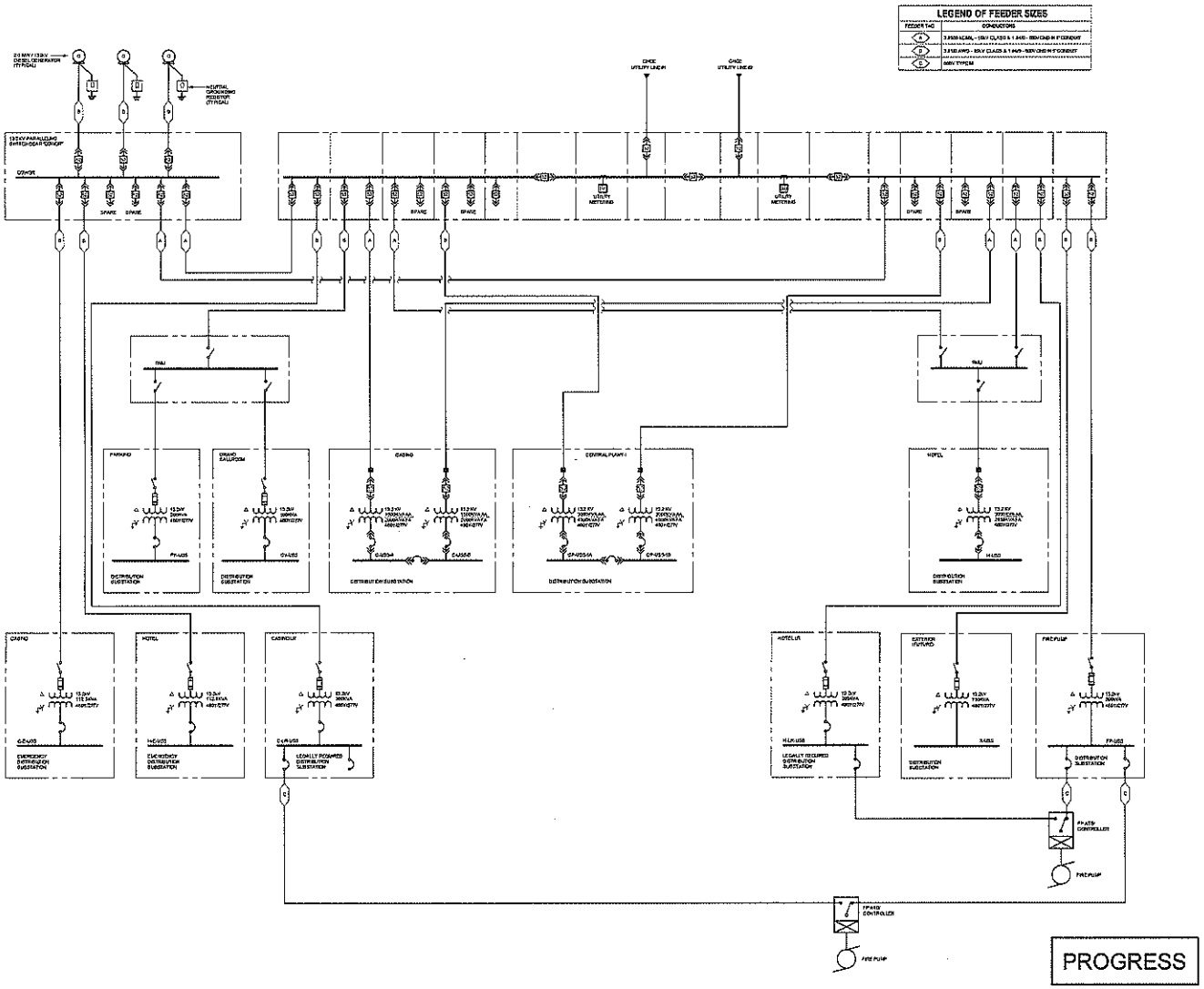
EXHIBIT NO:
-

DATE:
June 30, 2014

NORTH

0 5' 20' 40'
1"=20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO



PROGRESS

E500 ELECTRICAL MEDIUM VOLTAGE ONE LINE DIAGRAM

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
(See below)

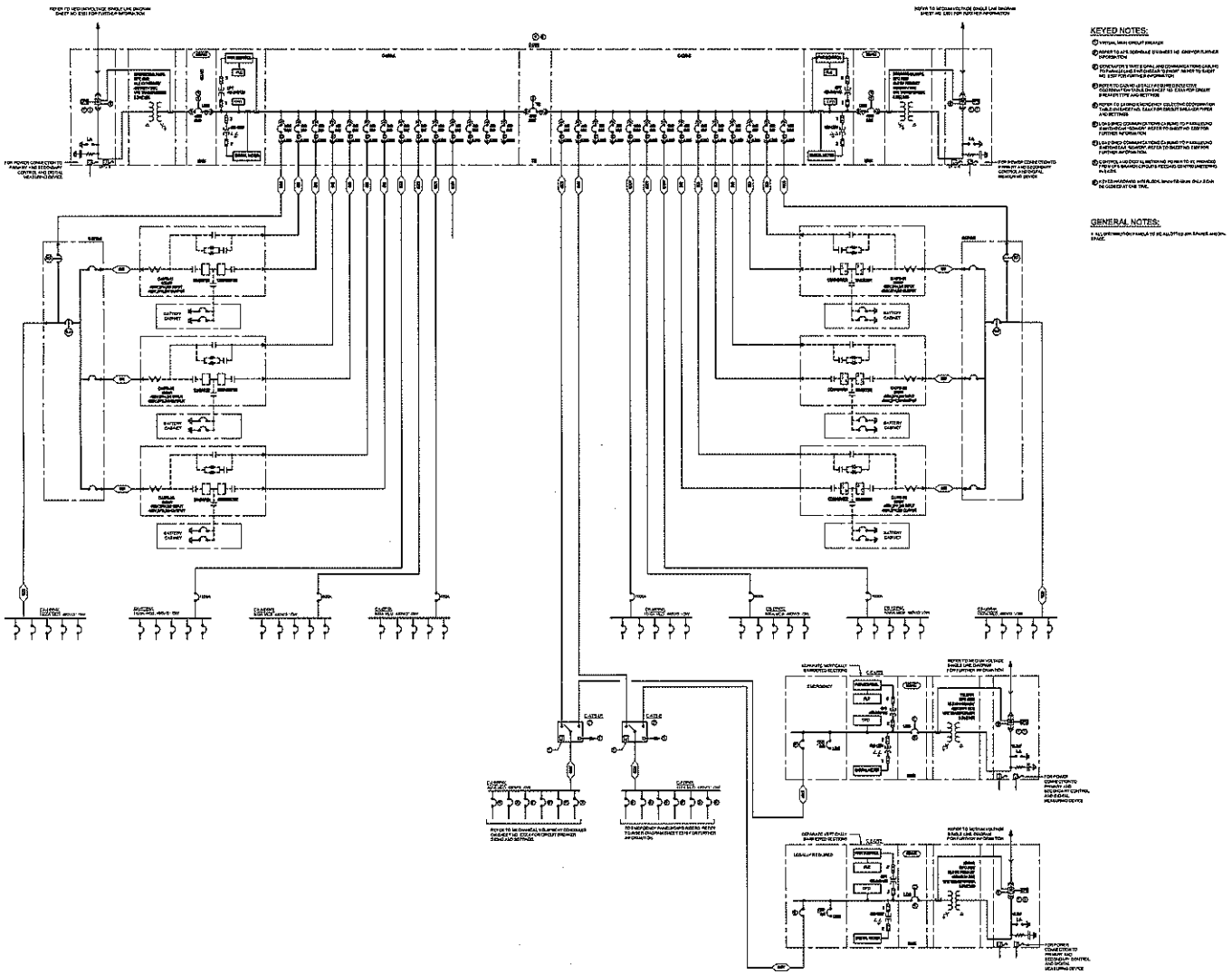
EXHIBIT NO:
--

DATE:
June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO



E501 CASINO ONE LINE DIAGRAM

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

DATE:

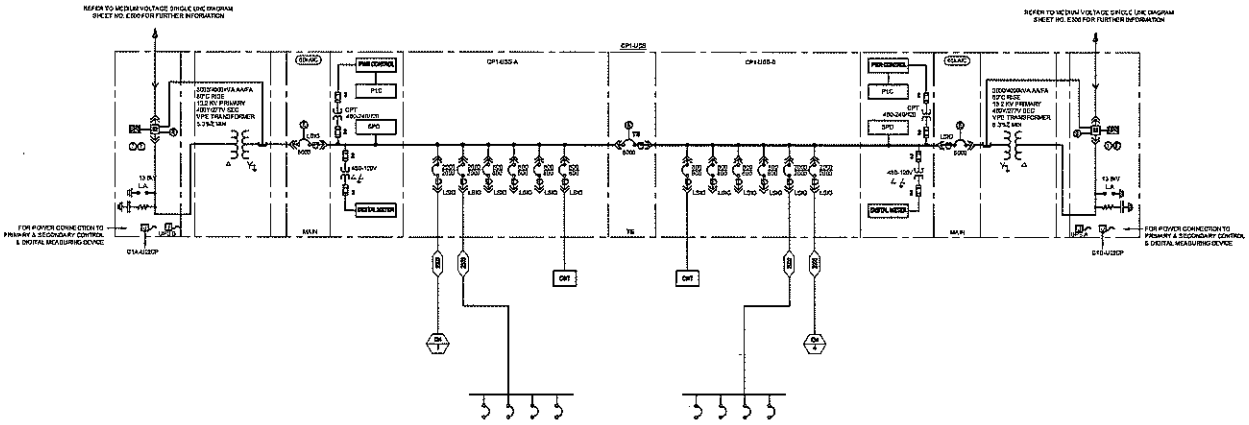
June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'

at 24" x 36"

The Grand Hudson HOTEL & CASINO



KEYED NOTES:

1. VIRTUAL MAIN CIRCUIT BREAKER
2. LOAD SHED COMMUNICATIONS CABLING TO PARALLELING SWITCHGEAR "NEWARK"

GENERAL NOTES:

1. ALL DISTRIBUTION PANELS TO BE ALLOTTED 20% SPARES AND 20% SPACE.

E502 CENTRAL PLANT ONE LINE DIAGRAM

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

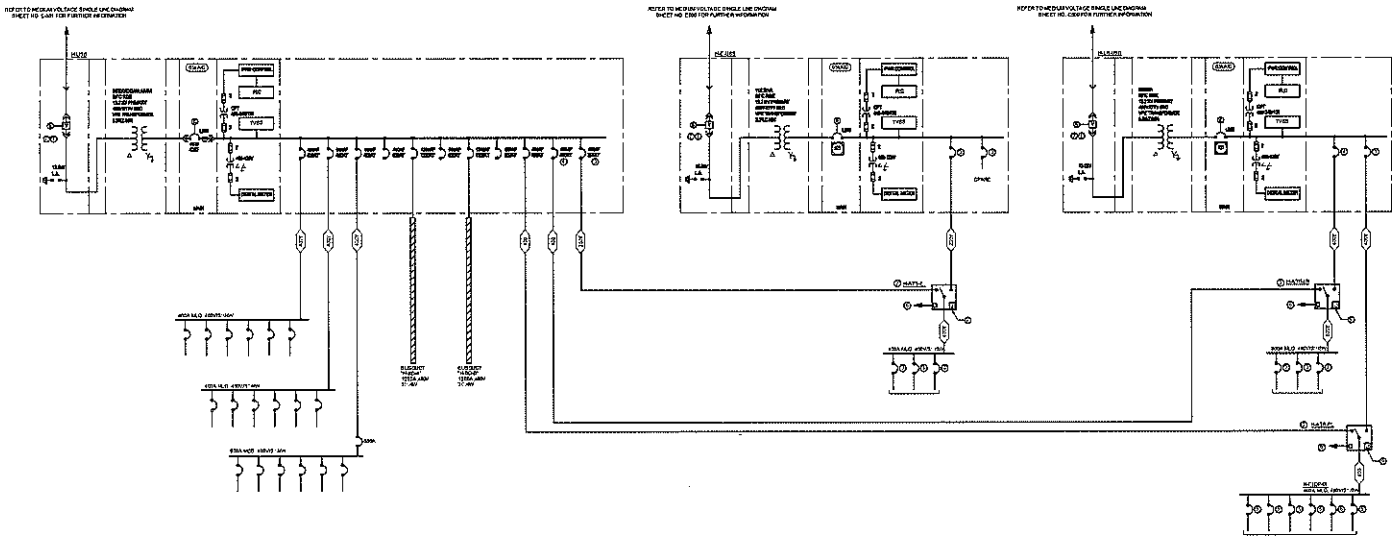
DATE:

June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO



KEYED NOTES:

GENERAL NOTES:

E503 HOTEL ONE LINE DIAGRAM

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

DATE:

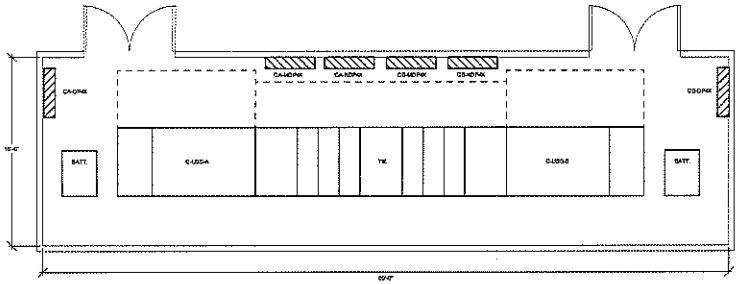
June 30, 2014

NORTH

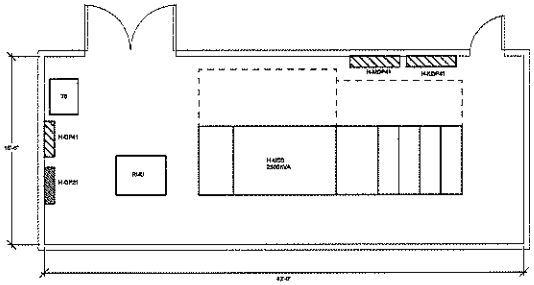
0 5' 20' 40'
1" = 20'

at 24" x 36"

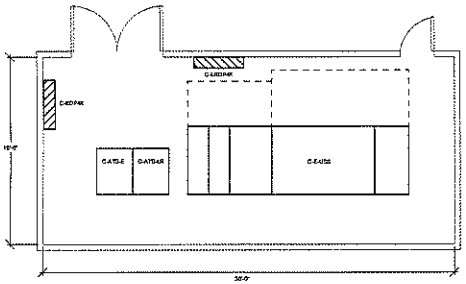
The Grand Hudson HOTEL & CASINO



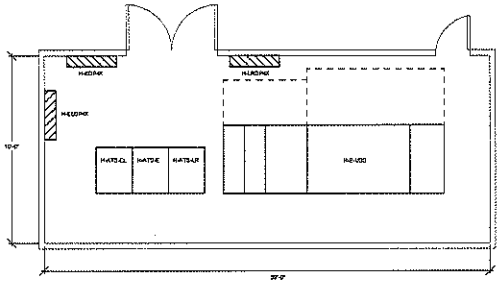
CASINO MAIN ELECTRIC ROOM - "C-USS"
SCALE: 1/4"=1'0"



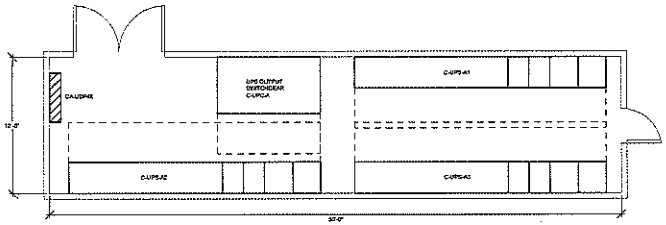
HOTEL MAIN ELECTRIC ROOM - "H-USS"
SCALE: 1/4"=1'0"



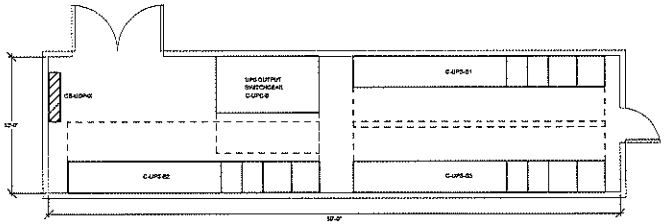
CASINO EMERGENCY ELECTRIC ROOM - "C-E-USS"
SCALE: 1/4"=1'0"



HOTEL EMERGENCY ELECTRIC ROOM - "H-E-USS"
SCALE: 1/4"=1'0"



CASINO UPS "C-UPS-A"
SCALE: 1/4"=1'0"



CASINO UPS "C-UPS-B"
SCALE: 1/4"=1'0"

E601 ELECTRICAL ROOM LAYOUTS CASINO & HOTEL

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
(See below)

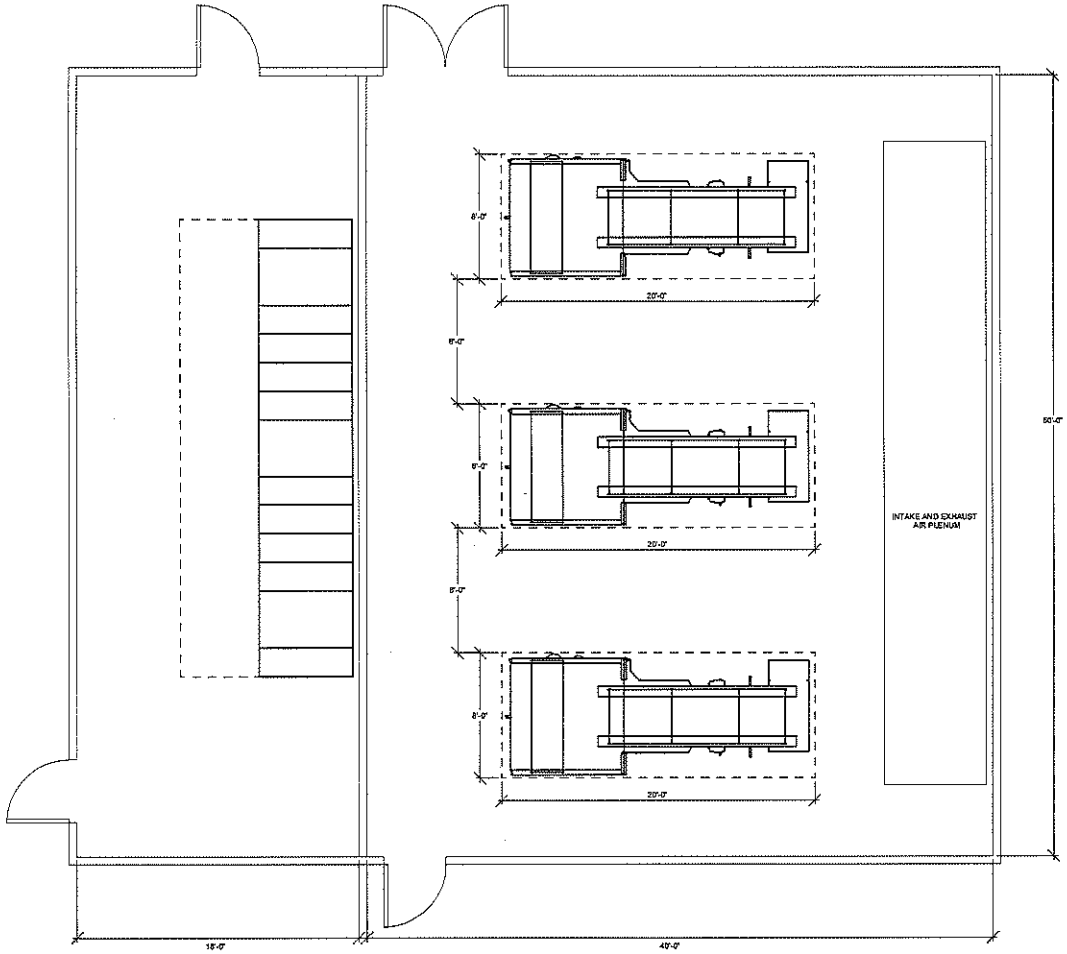
EXHIBIT NO:
-

DATE:
June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO



GENERATOR ELECTRIC ROOM
SCALE: 1/4"=1'-0"

E602 ELECTRICAL GENERATOR ROOM LAYOUT

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
(See below)

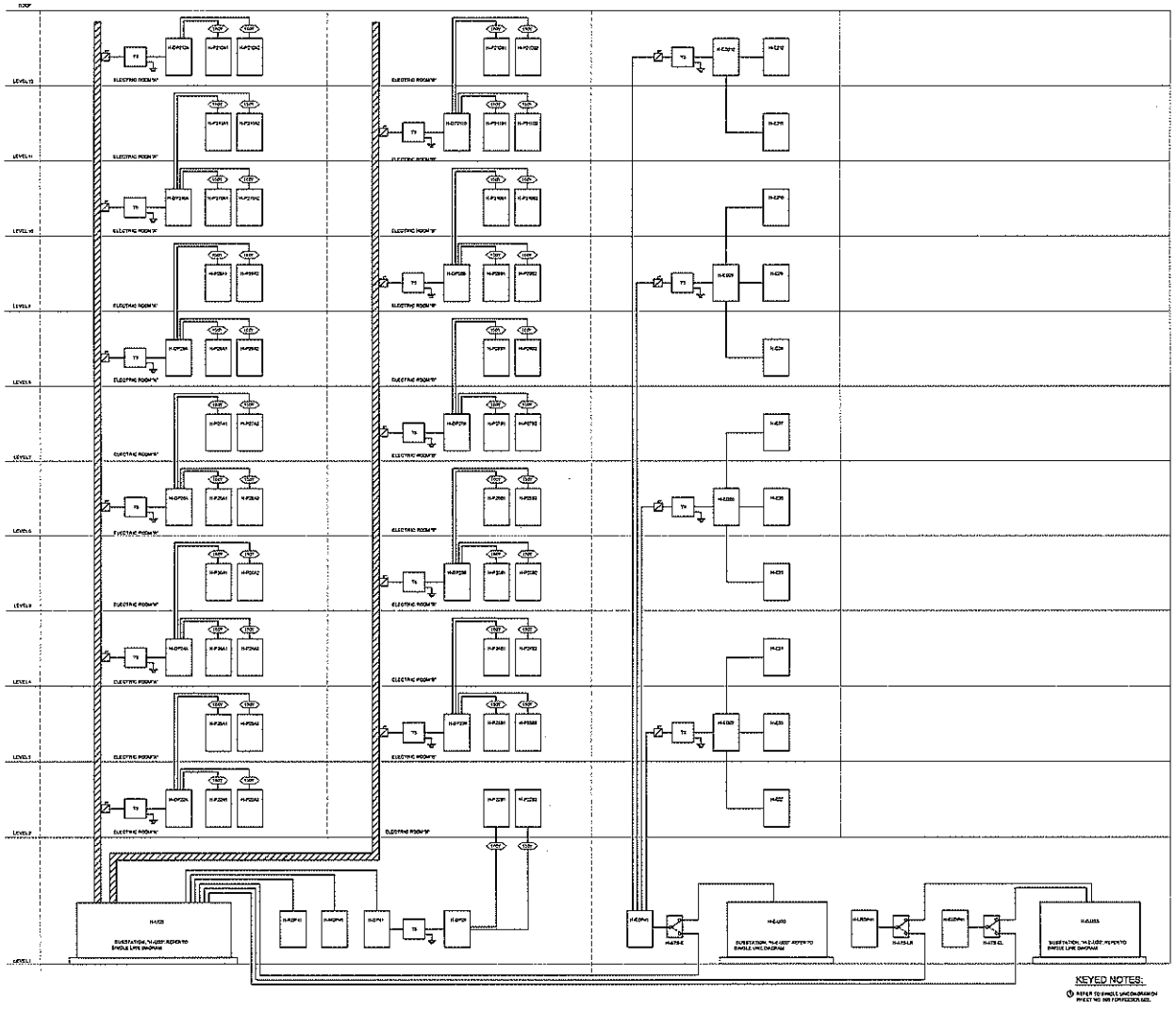
EXHIBIT NO:
-

DATE:
June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO



KEYED NOTES:

E803 HOTEL RISER DIAGRAM

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
(See below)

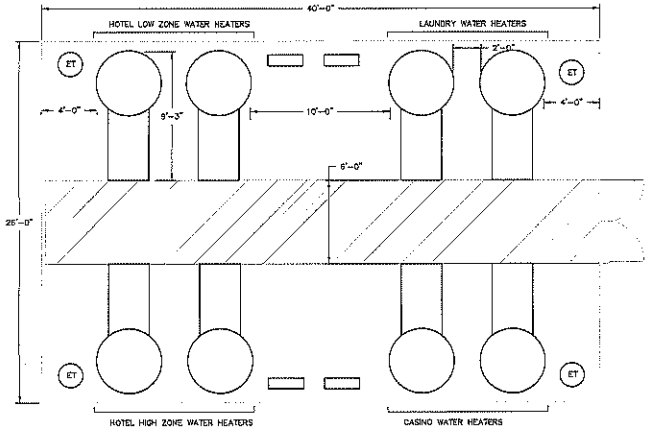
EXHIBIT NO:
-

DATE:
June 30, 2014

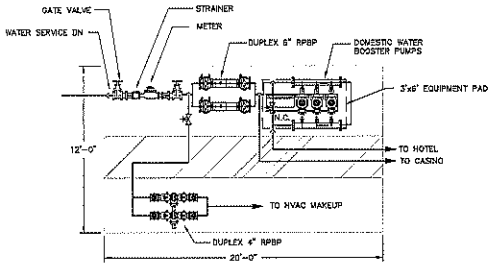
NORTH

1" = 20'
at 24" x 36"

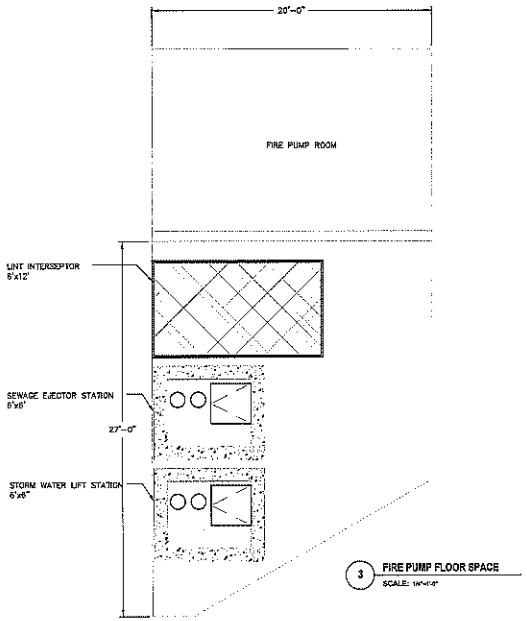
The Grand Hudson HOTEL & CASINO



1 HOT WATER GENERATION FLOOR SPACE
SCALE: 1/4"=1'-0"



2 WATER ROOM FLOOR SPACE
SCALE: 1/4"=1'-0"



3 FIRE PUMP FLOOR SPACE
SCALE: 1/4"=1'-0"

P401 PLUMBING PART PLANS

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
(See below)

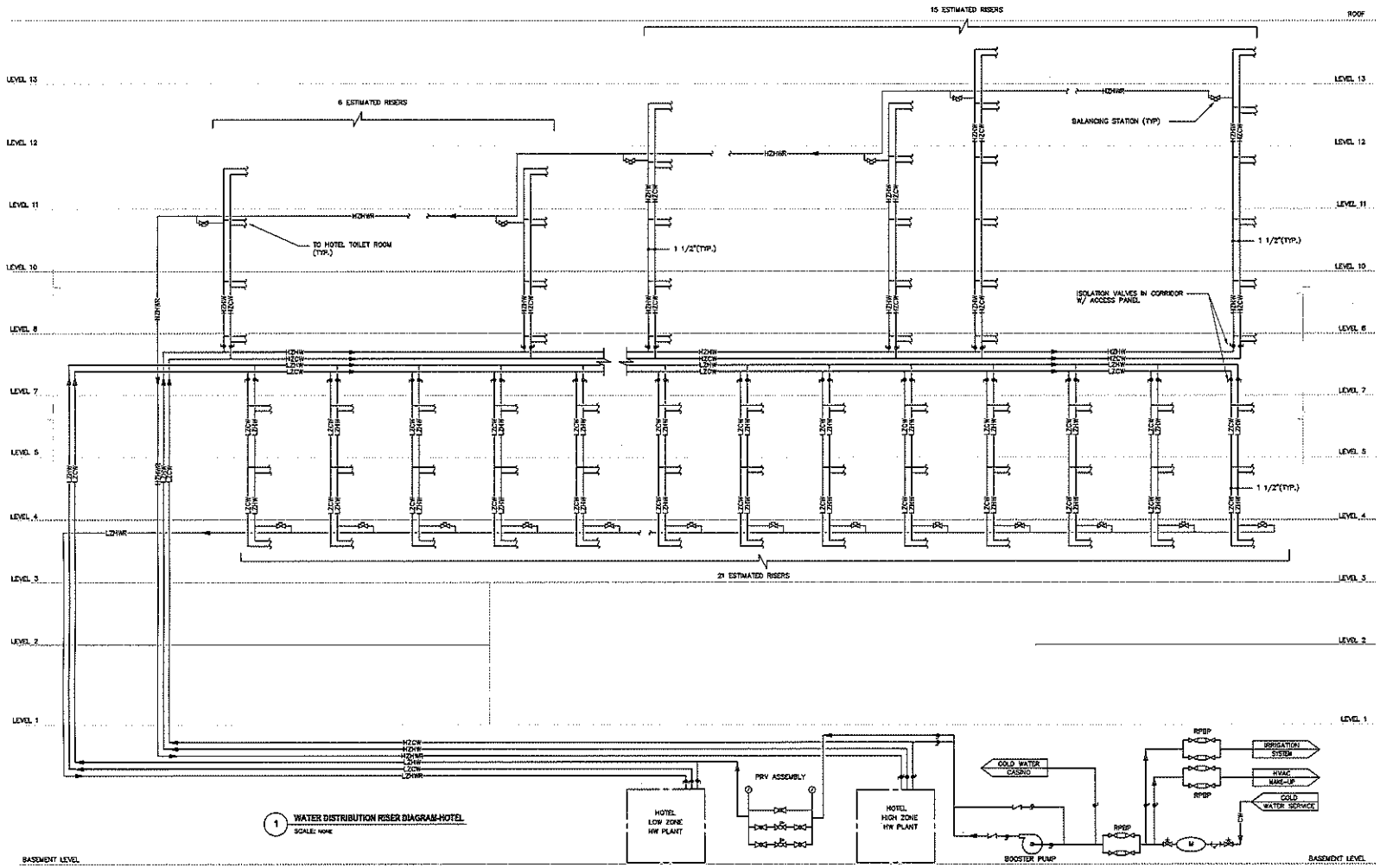
EXHIBIT NO:
-

DATE:
June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO



P501 PLUMBING WATER DISTRIBUTION RISER DIAGRAM-HOTEL

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

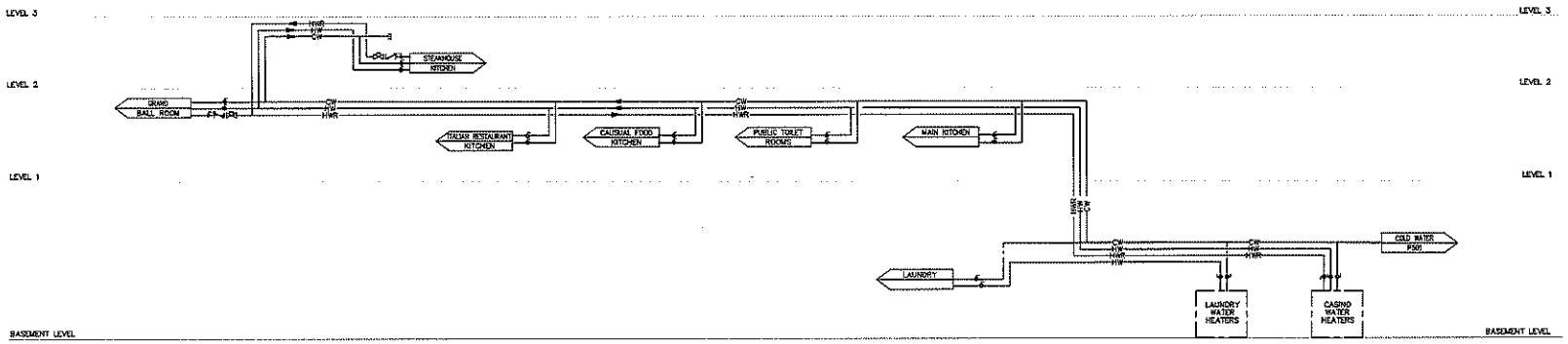
DATE:

June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO



P502 PLUMBING WATER DISTRIBUTION RISER DIAGRAM-CASINO

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

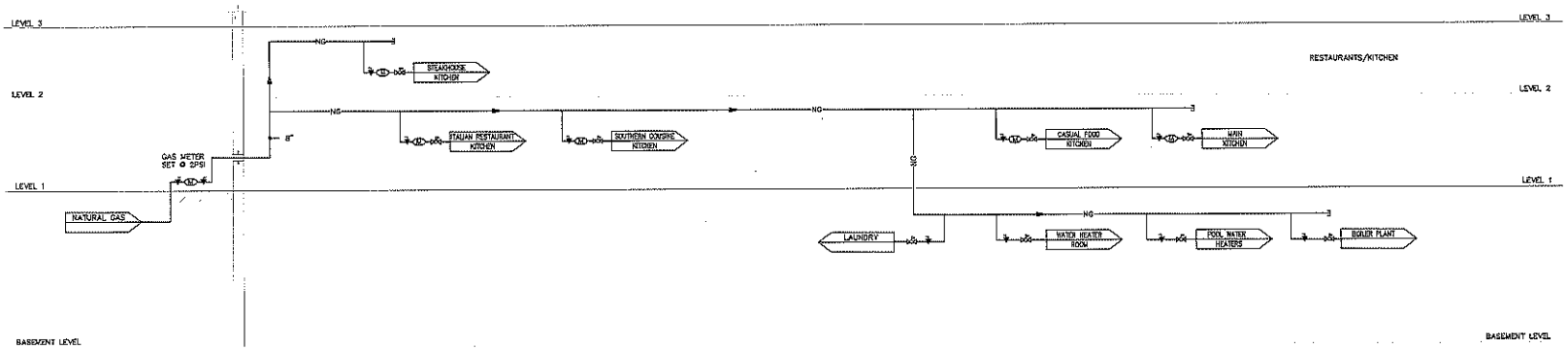
DATE:

June 30, 2014

NORTH

at 24" x 36"

The Grand Hudson HOTEL & CASINO



P502 PLUMBING GAS RISER DIAGRAMS

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:

BAER & ASSOCIATES LLC Construction Consultants

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

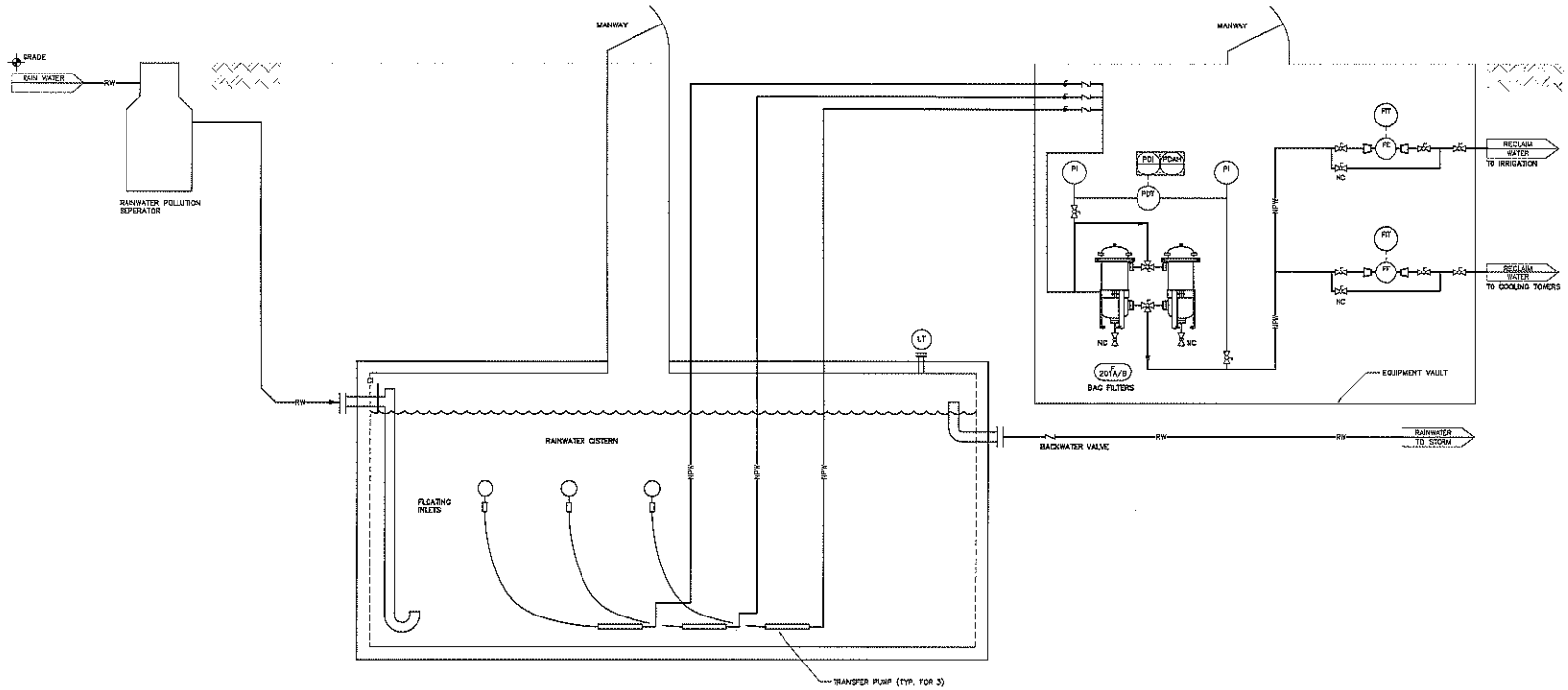
DATE:

June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO



P504 PLUMBING STORM WATER RECLAIM

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

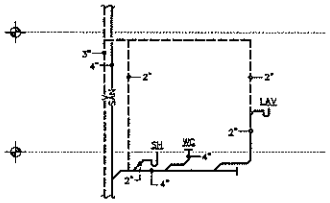
DATE:

June 30, 2014

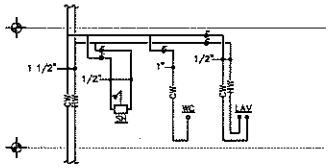
NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

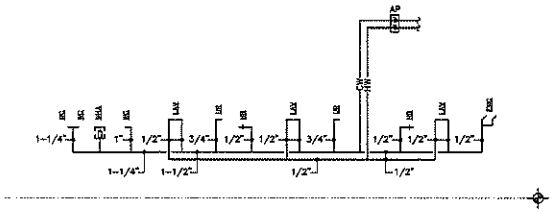
The Grand Hudson HOTEL & CASINO



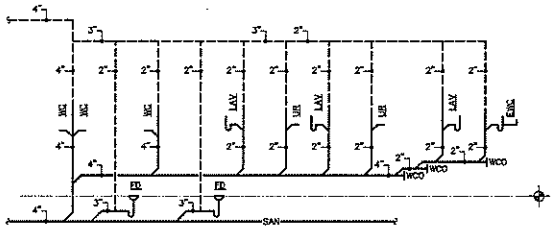
1 TYPICAL HOTEL ROOM TOILET WASTE RISER DIAGRAM
SCALE: NONE



2 TYPICAL HOTEL ROOM TOILET WATER RISER DIAGRAM
SCALE: NONE



3 PUBLIC TOILET WATER RISER DIAGRAM
SCALE: NONE



4 PUBLIC TOILET SANITARY AND VENT RISER DIAGRAM
SCALE: NONE

P505 PLUMBING SANITARY AND WATER RISER DIAGRAMS

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
(See below)

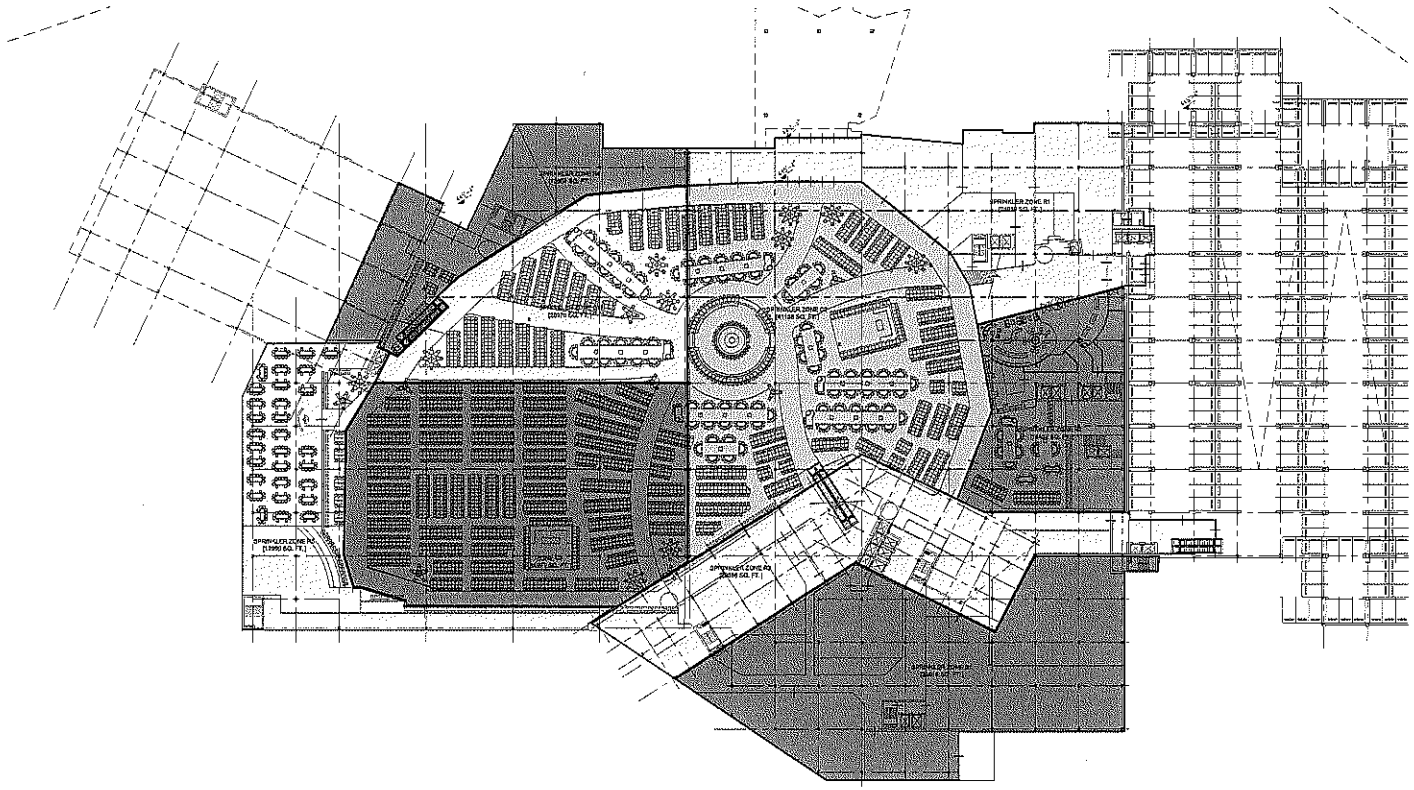
EXHIBIT NO:
-

DATE:
June 30, 2014

NORTH

at 24" x 36"

The Grand Hudson HOTEL & CASINO



F101 SPRINKLER ZONING PLAN

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:

BAER & ASSOCIATES LLC Construction Consultants

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

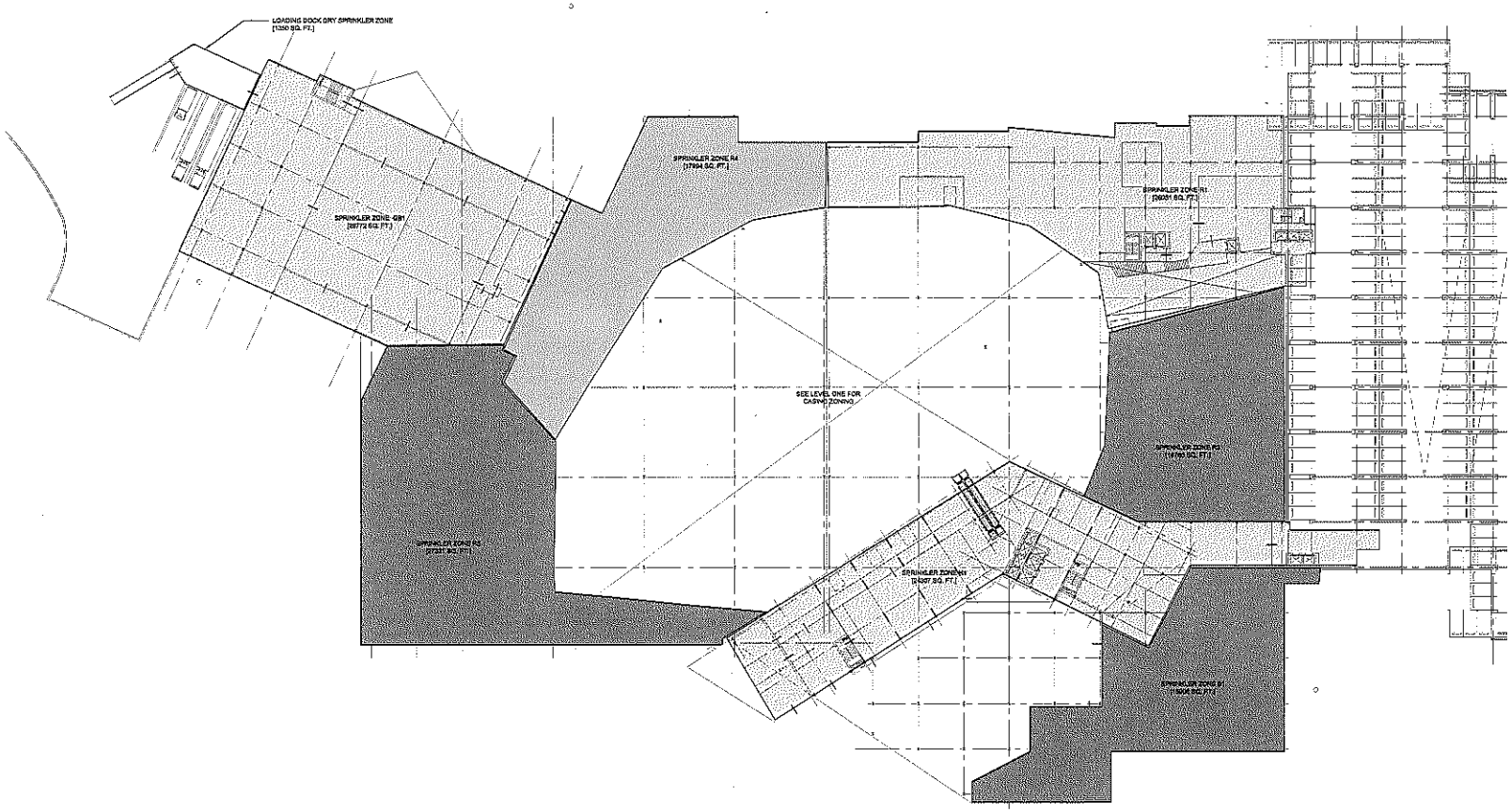
DATE:

June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO



F102 SPRINKLER ZONING PLAN - LEVEL 2

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

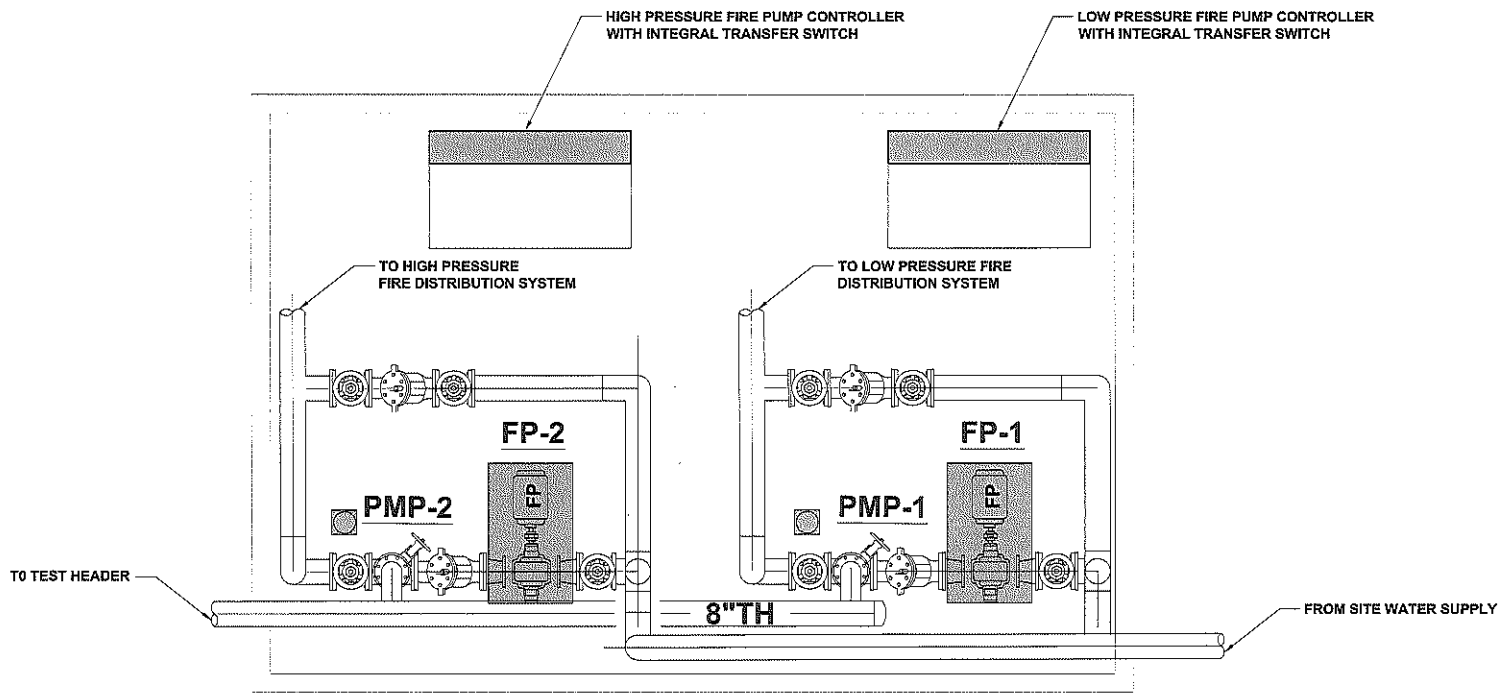
DATE:

June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO



FIRE PUMP ROOM
PLAN VIEW
1/2" =1'-0"

ELECTRIC FIRE PUMP SCHEDULE

DRAWING DESIGNATION	FUNCTION	CAPACITY (GPM)	BOOST (PSI)	MAX. CHURN (PSI)	ELECTRICAL					SET POINTS	
					HP	V	PH	HZ	RPM	START	STOP
FP-1	LOW PRESSURE FIRE PUMP	1,500	75			480	3	60	1760	155	MANUAL
PMP-1	LOW PRESSURE PRESSURE MAINTENANCE PUMP	7.5	100			480	3	60	3,560	165	175
FP-2	HIGH PRESSURE FIRE PUMP	1,000	110			480	3	60	3,560	210	MANUAL
PMP-2	HIGH PRESSURE PRESSURE MAINTENANCE PUMP	7.5	160			480	3	60	3,560	220	225

F401 FIRE SUPPRESSION - FIRE PUMP ROOM PART PLAN

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
(See below)

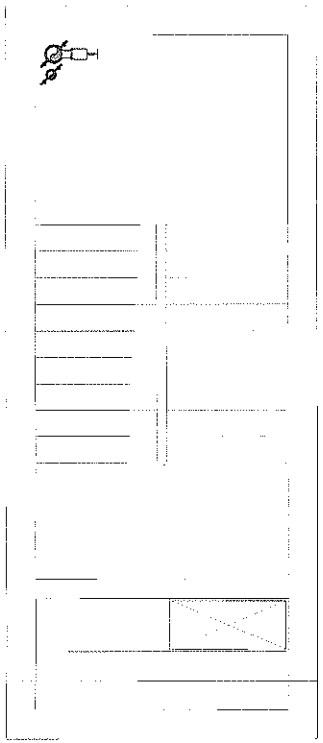
EXHIBIT NO:
-

DATE:
June 30, 2014

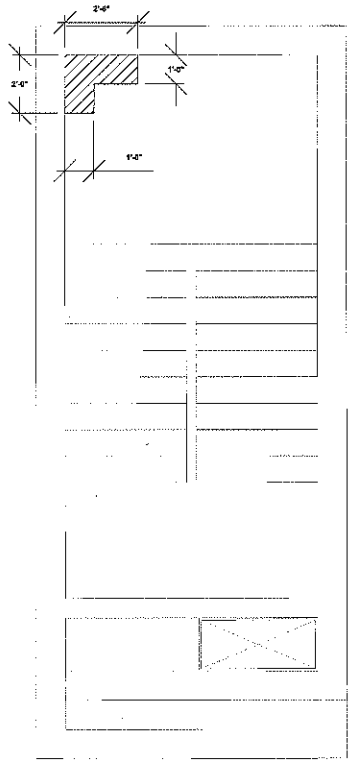
NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

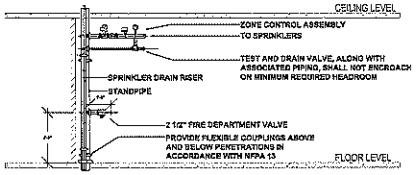
The Grand Hudson
HOTEL & CASINO



PLAN VIEW
1/2" =1'-0"



MINIMUM REQUIRED CLEARANCE
1/2" =1'-0"



ELEVATION VIEW
1/4" = 1'-0"

F402 FIRE SUPPRESSION - HOTEL STAIR PART PLAN

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
HodgsonRuss

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
(See below)

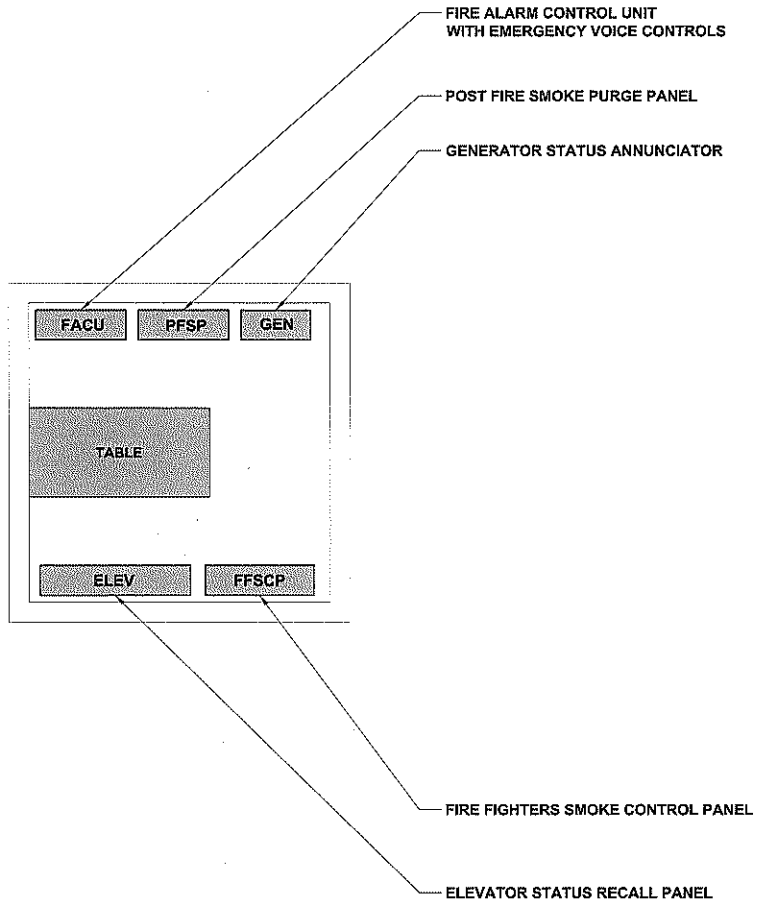
EXHIBIT NO:
-

DATE:
June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO



FIRE COMMAND CENTER
PLAN VIEW
1/2" =1'-0"

F412 FIRE ALARM - FIRE COMMAND CENTER PART PLAN

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
HodgsonRuss

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL /
ENGINEERING / SURVEYING/
LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
(See below)

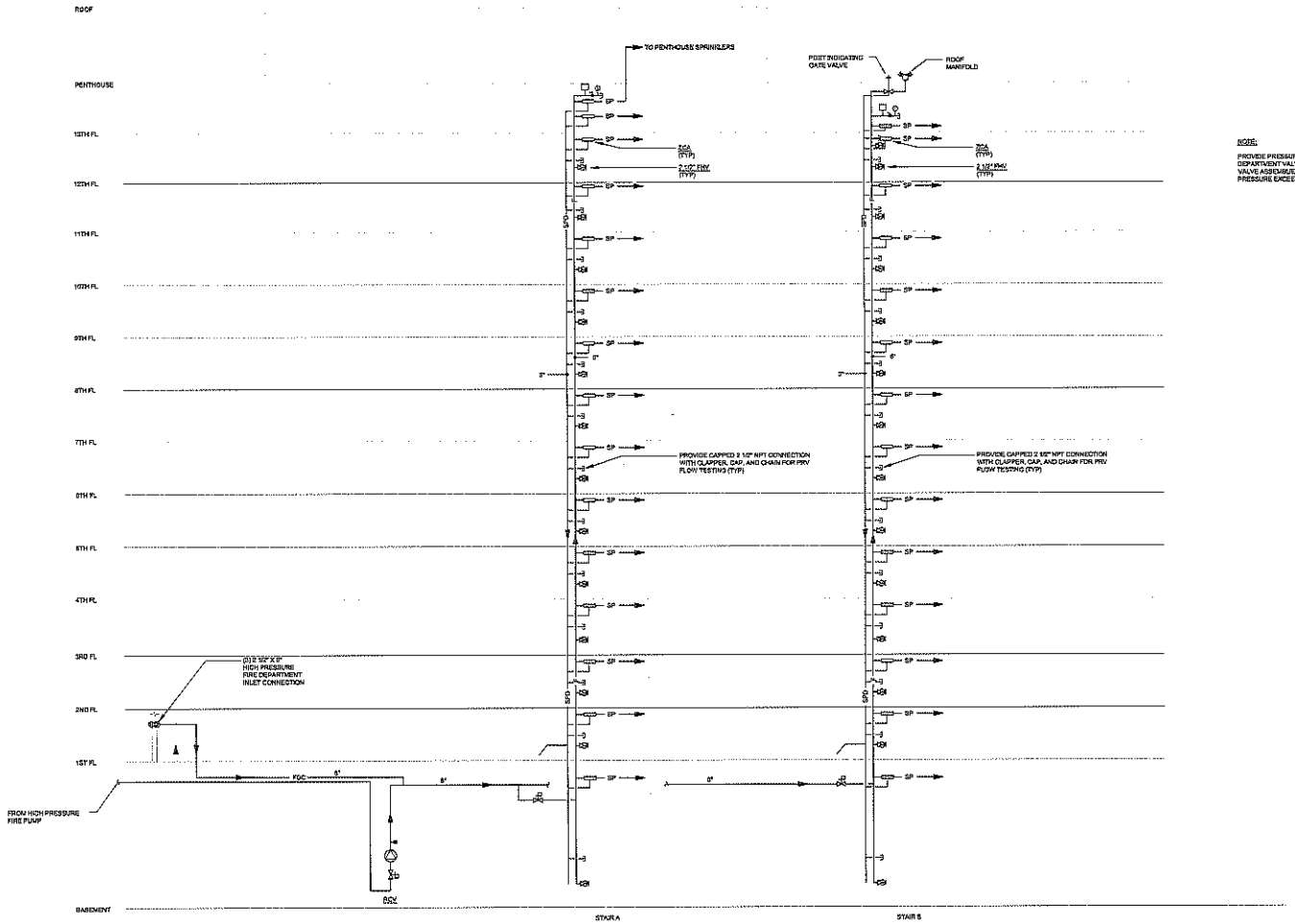
EXHIBIT NO:
-

DATE:
June 30, 2014

NORTH

at 24" x 36"

The Grand Hudson
HOTEL & CASINO



NOTE:

PROVIDE PRESSURE REDUCING TYPE FIRE DEPARTMENT VALVES AND FLOOR CONTROL VALVE ASSEMBLIES ON ALL FLOORS WHERE PRESSURE EXCEEDS 175 PSI

F801 FIRE SUPPRESSION - HOTEL RISER DIAGRAM

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:

BAER & ASSOCIATES LLC Construction Consultants

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

DATE:

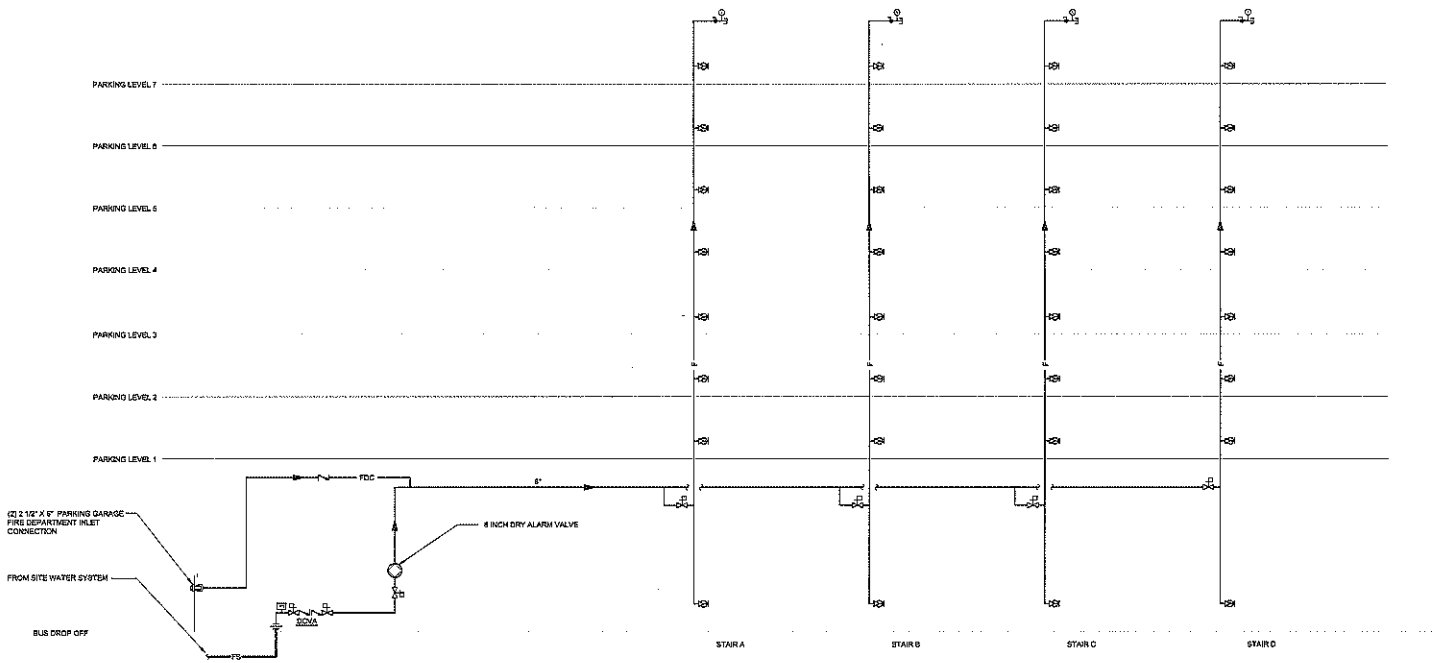
June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'

at 24" x 36"

The Grand Hudson HOTEL & CASINO



F803 FIRE SUPPRESSION - PARKING GARAGE RISER DIAGRAM

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

DATE:

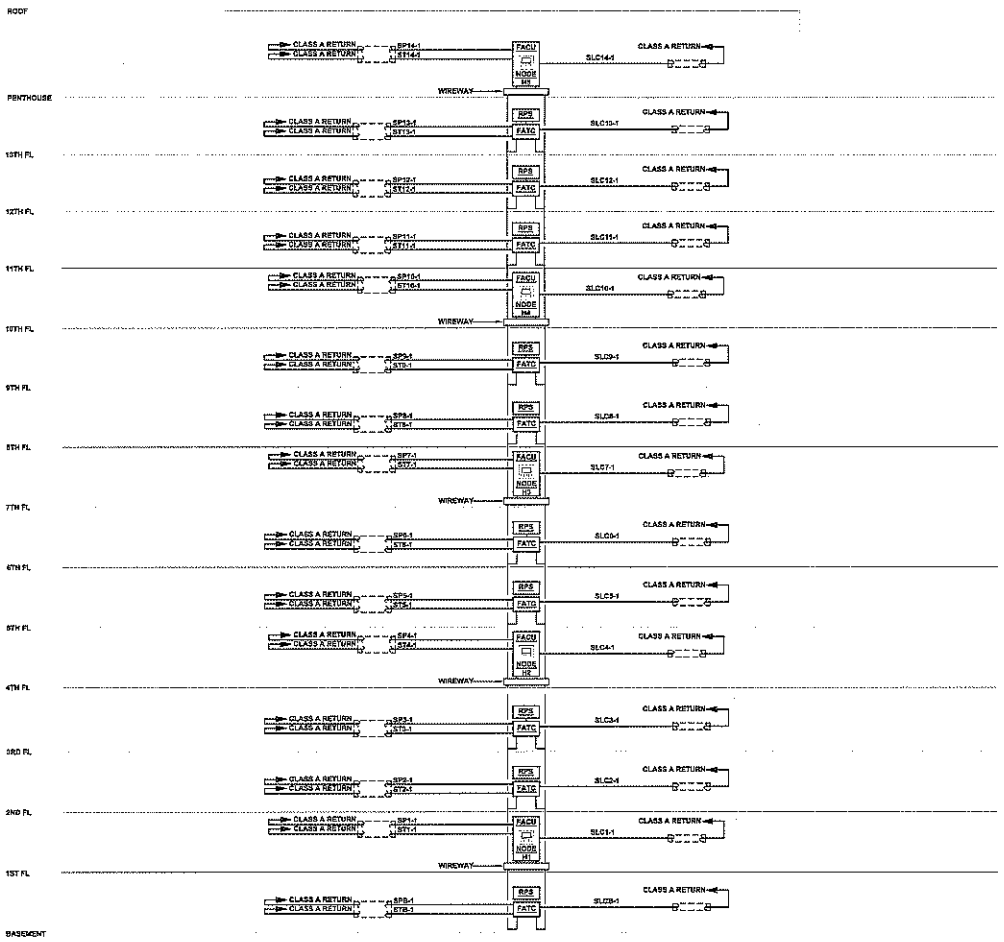
June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'

at 24" x 36"

The Grand Hudson HOTEL & CASINO

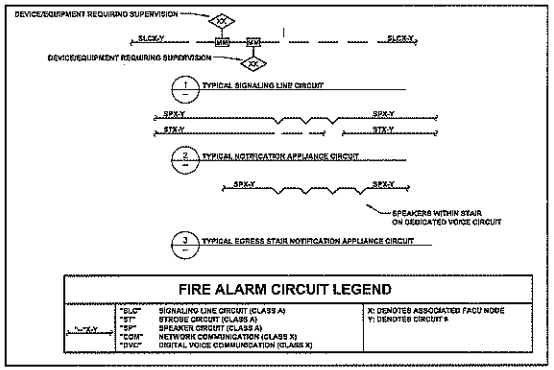


ABBREVIATIONS

DVC	DIGITAL VOICE BUS
FACU	FIRE ALARM CONTROL UNIT
FATC	FIRE ALARM TERMINAL CABINET
COM	NETWORK COMMUNICATION CIRCUIT
RPS	REMOTE POWER SUPPLY
SLC	SIGNALING LINE CIRCUIT
SPK	SPEAKER (AUDIO) CIRCUIT
STR	STROBE (VISUAL) CIRCUIT

CIRCUIT PATHWAY CLASSIFICATION

DVC	CLASS A
COM	CLASS X
SLC	CLASS A
SPK	CLASS A
STR	CLASS A



F811 FIRE ALARM - HOTEL RISER DIAGRAM

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:

BAER A ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

DATE:

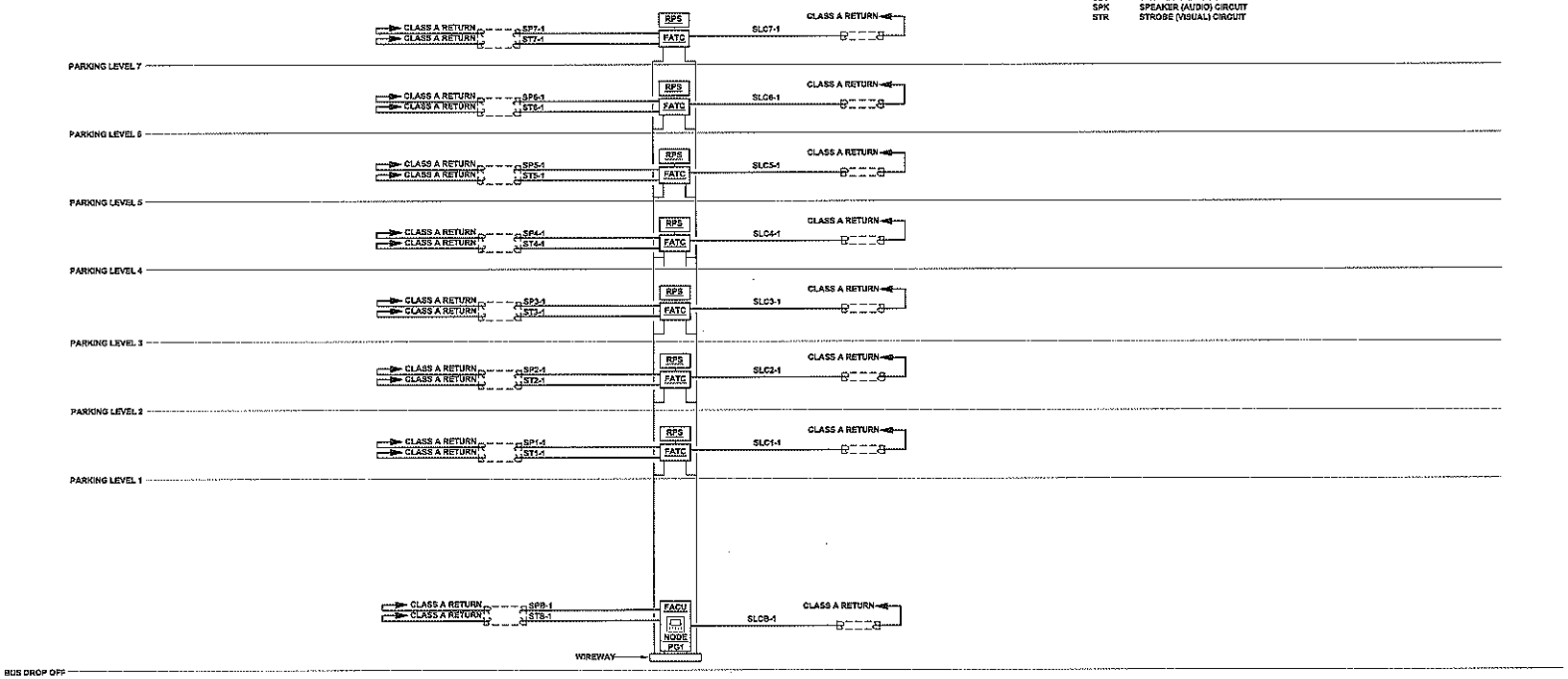
June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'

at 24" x 36"

The Grand Hudson HOTEL & CASINO



ABBREVIATIONS

DVC	DIGITAL VOICE BUS
FACU	FIRE ALARM CONTROL UNIT
FATC	FIRE ALARM TERMINAL CABINET
COM	NETWORK COMMUNICATION CIRCUIT
RPS	REMOTE POWER SUPPLY
SLC	SIGNALING LINE CIRCUIT
SPK	SPEAKER (AUDIO) CIRCUIT
STR	STROBE (VISUAL) CIRCUIT

F813 FIRE ALARM - PARKING GARAGE RISER DIAGRAM

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
(See below)

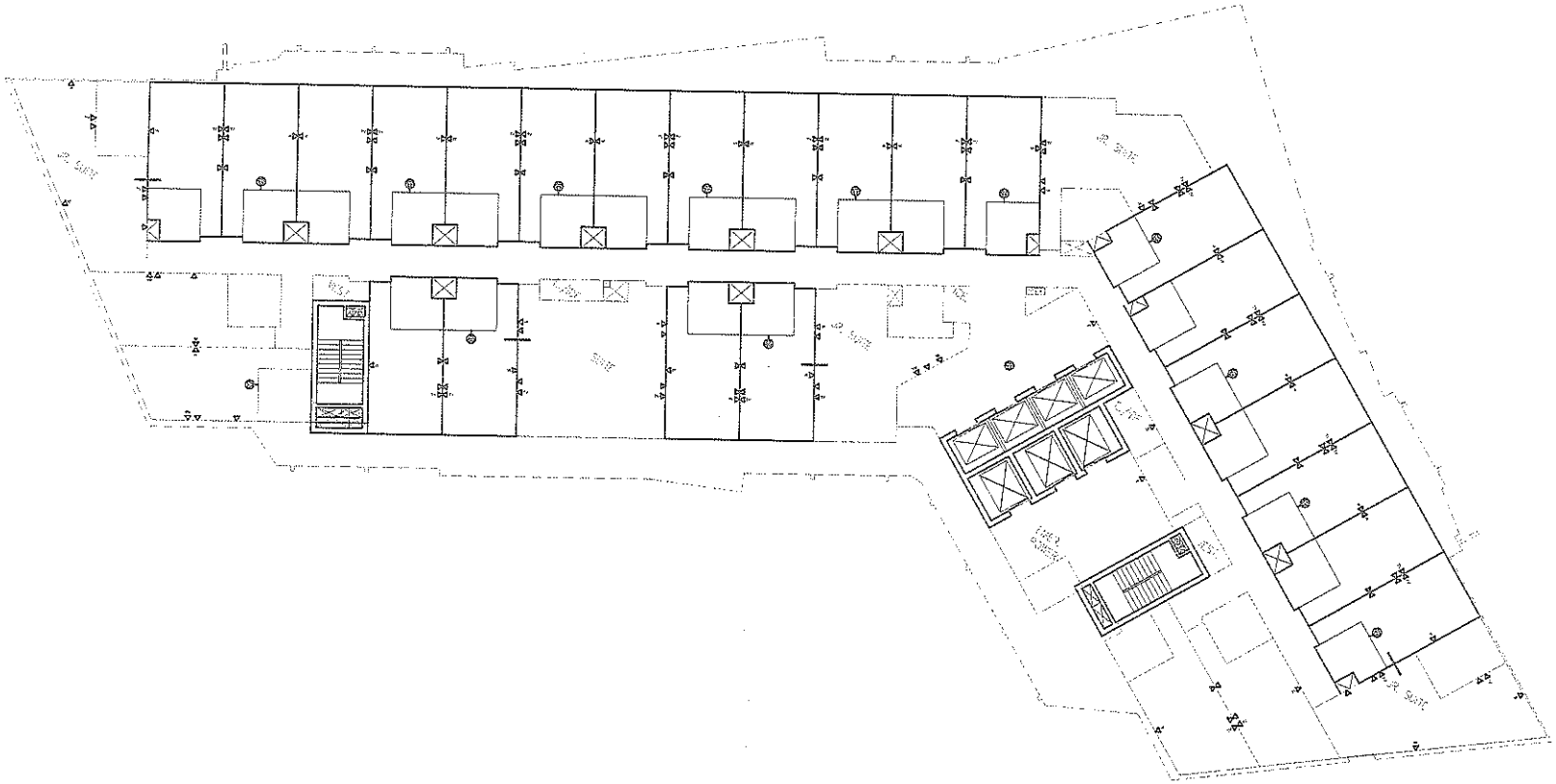
EXHIBIT NO:
-

DATE:
June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO



T204 TELECOMMUNICATIONS OUTLET PLAN - HOTEL FLOOR TYPICAL

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:

BAER & ASSOCIATES LLC Construction Consultants

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

DATE:

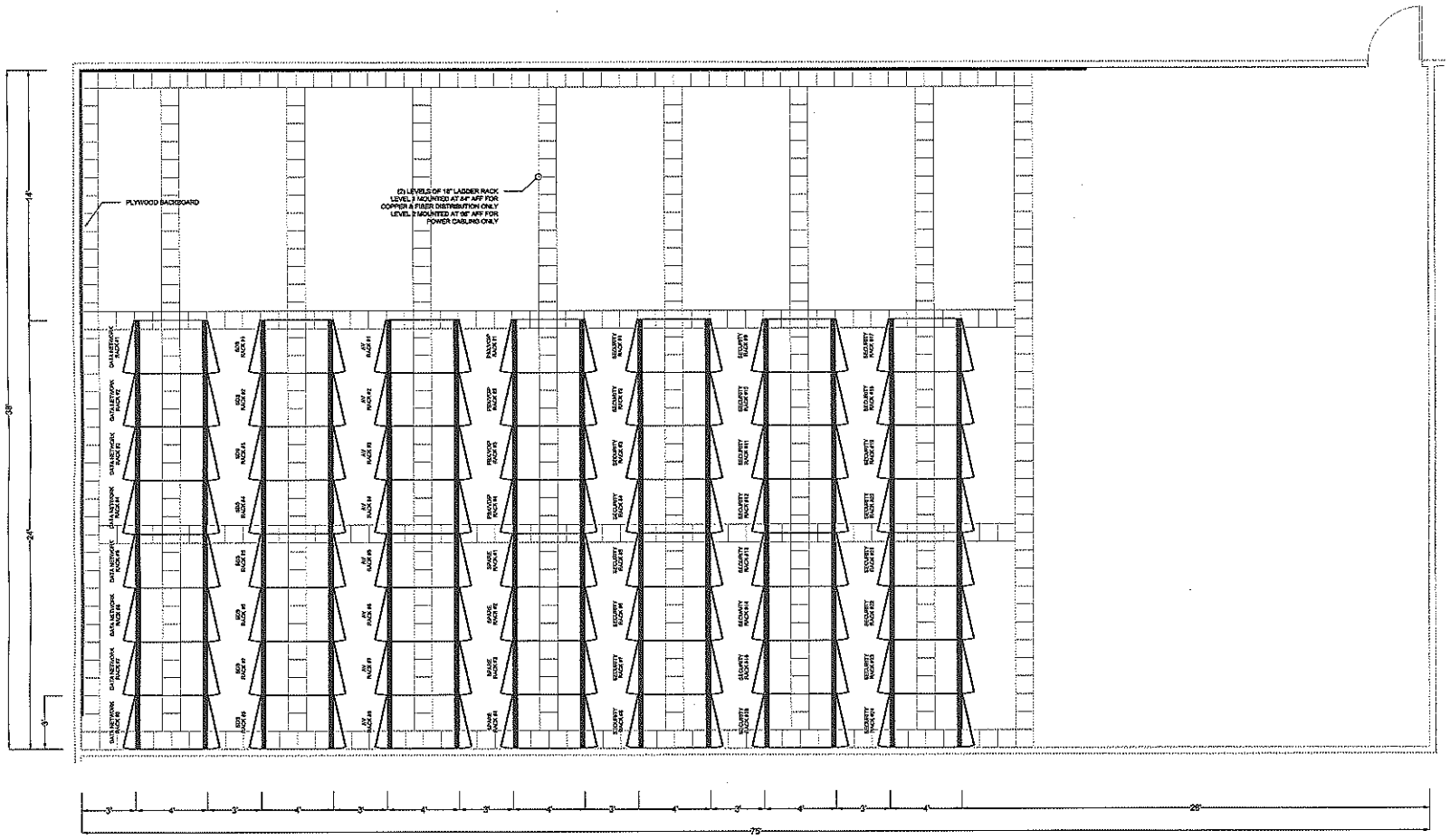
June 30, 2014

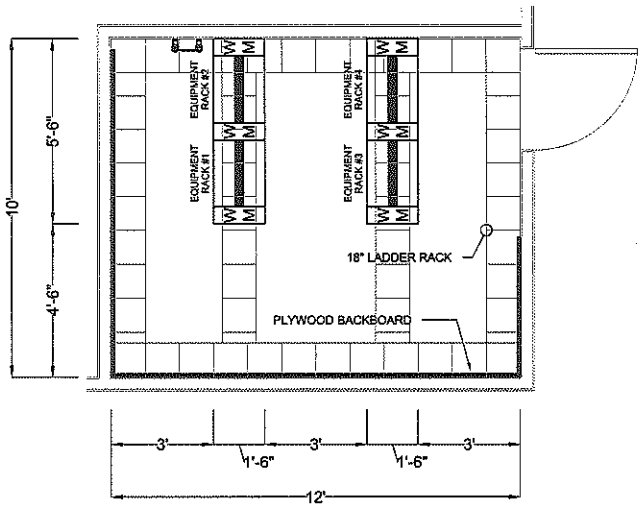
NORTH

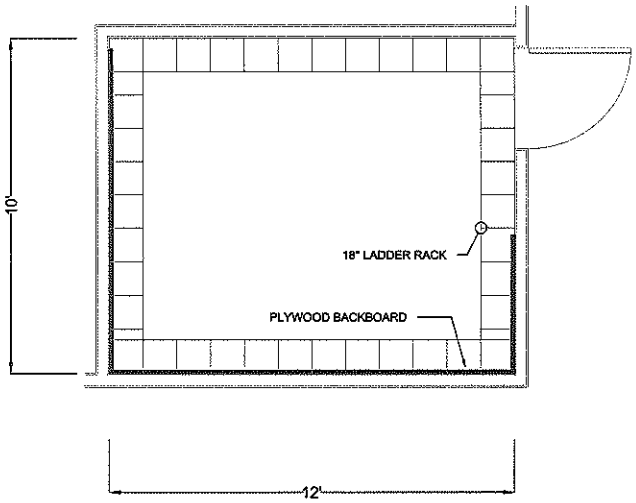
0 5' 20' 40'
1" = 20'

at 24" x 36"

The Grand Hudson HOTEL & CASINO


PLYWOOD BACKBOARD
(2) LEVELS OF 18" LADDER RACK
LEVEL 3 MOUNTED AT 84" AFF FOR
COPPER & FIBER DISTRIBUTION ONLY
LEVEL 2 MOUNTED AT 96" AFF FOR
POWER CABLING ONLY
DATA NETWORK RACK
ISP RACK
TRANSP RACK
SECURITY RACK
MDF RACK
38'
14'
24'
3'
3'
4'
3'
4'
3'
4





T401 TELECOMMUNICATIONS PART PLANS

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

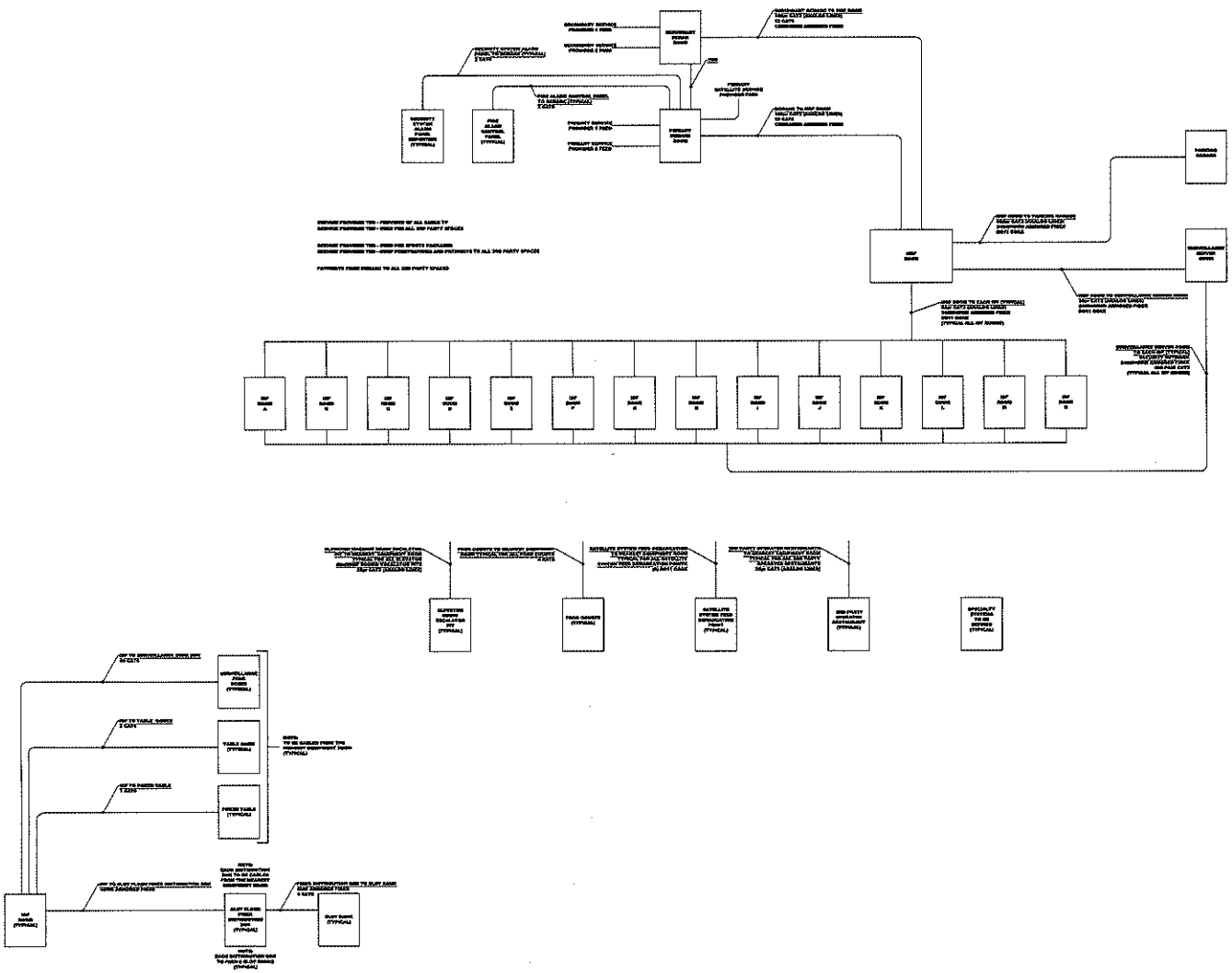
DATE:

June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO



T500 TELECOMMUNICATIONS CABLING RISER DIAGRAM

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

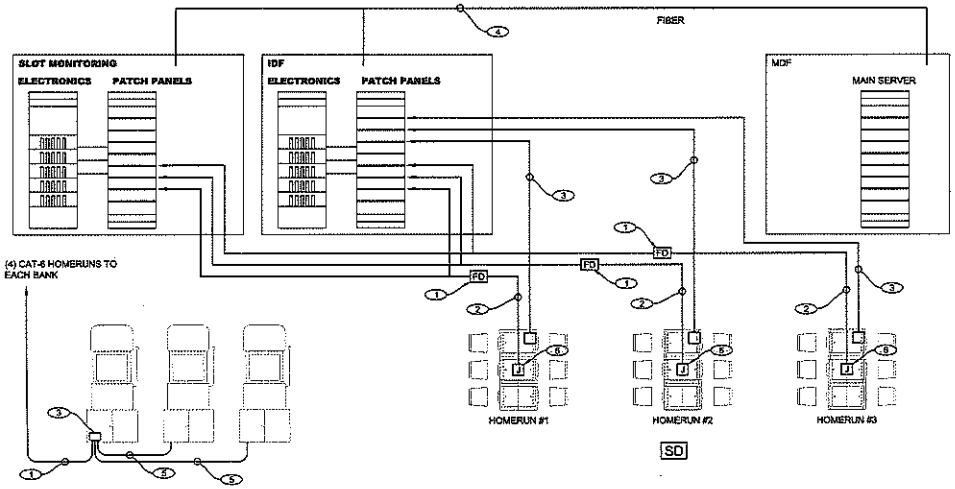
DATE:

June 30, 2014

NORTH

at 24" x 36"

The Grand Hudson HOTEL & CASINO

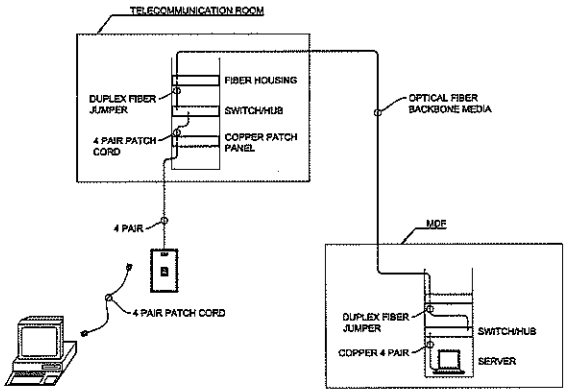


NOTES:

1. WIRE CAT-6 PRESTAMPED EVERY 150mm WITH UNIQUE IDENTIFICATION. COORDINATE ALL DATA PULLS WITH IT DEPARTMENT.
2. BUILDING UPS SYSTEM TO COVER EACH DATA AND SLOT DATA RACK. COORDINATE WITH IT FOR SPECIFICATION.
3. TERMINATE EACH CAT-6 IN TELECOMM ROOM ON 48-PORT PANELS.

NOTES:

1. CONTRACTOR SHALL INSTALL AND TERMINATE (1) 48 STRAND MULTIMODE FIBER FROM THE IDF TO EACH FIBER DISTRIBUTION ZONE BOX.
2. CONTRACTOR SHALL INSTALL AND TERMINATE (1) 2 STRAND FIBER FROM THE FIBER DISTRIBUTION ZONE BOX TO EACH OF 3 SLOT BANKS PER ZONE.
3. CONTRACTOR SHALL INSTALL (4) CATEGORY 6 CABLES TO EACH SLOT BANK.
   (3) GREEN = CAT 6 (FROM IDF ROOM FOR HOUSE NETWORK)
   (1) YELLOW = CAT 6 (FROM SLOT MONITORING FOR SLOT MONITORING NETWORK)
4. FIBER PATHWAY PROVIDED IN MEDIA RISER DIAGRAM. SEE SHEET T7.77 FOR DETAILS.
5. PATCH CORDS WIRED BETWEEN ELECTRONICS.
6. CONTRACTOR SHALL INSTALL A METAL J-BOX WITH A 6' STEEL FLEX WHIP TO ALLOW REPOSITIONING OF OUTLET.



T501 TELECOMMUNICATIONS CABLING RISER DIAGRAM

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
(See below)

EXHIBIT NO:
-

DATE:
June 30, 2014

NORTH

at 24" x 36"

The Grand Hudson HOTEL & CASINO

GENERAL NOTES

- SYMBOLS LEGEND IS PROVIDED FOR COORDINATION OF OUTLET TYPE AND APPROXIMATE LOCATION.
- COORDINATE WITH ALL PROJECT DRAWINGS AND DOCUMENTS.
- CONDUIT LOCATIONS ARE DIAGRAMMATIC ONLY. REFER TO ELECTRICAL PLANS FOR EXACT CONDUIT RUNS.
- CONNECTIONS SHOWN BETWEEN DEVICES ARE INTENDED TO PORTRAY FUNCTIONAL RELATIONSHIP ONLY. THE PLAN WIRING ARE NOT INTENDED TO REPLACE BIDDER'S SHOP DRAWINGS, AND DO NOT INCLUDE THE FOLLOWING:
  - ACTUAL CABLE TYPES
  - ALL NECESSARY POINT-TO-POINT WIRING
  - RUNS BETWEEN DEVICES AND CONTROL PANELS
  - PROCESSOR BOARDS
  - POWER SUPPLIES

SECURITY LEGEND

CR	CARD READER
KP	CARD READER WITH KEYPAD
DR	DOOR RELEASE PUSHBUTTON, UNDERCOUNTER
PP	PUSH PLATE, DOOR OPERATOR
RX	REQUEST-TO-EXIT PALM BUTTON (REX)
TS	DOOR UNLOCK/LOCK TOGGLE SWITCH
CM	CURTAIN MOTION DETECTOR P.I.R
DB	DURESS ALARM BUTTON
PB	DOOR CHIME PUSHBUTTON
PIR	MOTION DETECTOR P.I.R
TS	OVER TEMP/RISE/DZ DETECTOR SWITCH
	DOOR CONTACT SWITCH
DE	DELAYED RELEASE EXIT LOCK
EM	ELECTROMAGNETIC LOCK (MAG LOCK)
ES FS	ELECTRIC DOOR STRIKE - FAILSAFE - NORMALLY ENERGIZED - RELEASE ON FIRE ALARM
ES FSE	ELECTRIC DOOR STRIKE - FAIL SECURE - NORMALLY UNENERGIZED
EL FS	ELECTRIFIED LEVER LOCKSET - FAILSAFE - NORMALLY ENERGIZED - RELEASE ON FIRE ALARM
EL FSE	ELECTRIFIED LEVER LOCKSET - FAIL SECURE - NORMALLY UNENERGIZED
LR	ELECTRIC LATCH-RETRACTION PANIC HARDWARE
ID	INTEGRATED ACCESS DOOR LOCK - FAIL SECURE - INTERIOR LEVER
ID LR	INTEGRATED ACCESS DOOR LOCK - FAIL SECURE - INTERIOR PANIC HARDWARE WITH LATCH RETRACTION
LOCK PWR	ELECTRIFIED DOOR LOCK POWER SUPPLY WITH BATTERY BACKUP
DOOROP	DOOR OPERATOR, MOTORIZED

SECURITY LEGEND (CONTINUED)

ACP	ACCESS CONTROL PANEL/POWER SUPPLY (REQUIRES 120V AC)
SCP	BURGLAR ALARM CONTROL PANEL (REQUIRES 120V AC)
ICE	INTERCOM CONTROL EXCHANGE (REQUIRES 120V AC)
NVR	NETWORK VIDEO RECORDER (REQUIRES 120V AC)
DVR	DIGITAL VIDEO RECORDER (REQUIRES 120V AC)
ACW	ACCESS CONTROL WORKSTATION (REQUIRES 120V AC)
DMA	DOOR MANAGEMENT ALARM ACTIVE LOCAL SYSTEM
CH	DOOR CHIME
IN MAS	INTERCOM, LOCAL MASTER STATION
SUB IN	INTERCOM, LOCAL SUB STATION
KP	KEYPAD (48" AFF UNLESS OTHERWISE NOTED)
VIN MAS	VIDEO INTERCOM, MASTER STATION
VIN SUB	VIDEO INTERCOM, SUB STATION (48" AFF UNLESS OTHERWISE NOTED)
VM	VIDEO MONITOR, SECURITY CCTV
VW	VIDEO WALL
VMS	SECURITY VIDEO MANAGEMENT SYSTEM
VMC	VIDEO MANAGEMENT CLIENT WORKSTATION
ETH SW	ETHERNET SWITCH
CAM PWR	CAMERA POWER
EMG TEL	EMERGENCY PANEL TELEPHONE
LRPS	LATCH RETRACTION POWER SUPPLY (REQUIRES 120V AC LOCATED WITHIN 20' OF THE DOORWAY - COORDINATE WITH ARCHITECT)
DETEX	LOCAL DOOR EXIT ALARM

VANDERWEIL PROJECT INFO

PROJECT NUMBER	0000.00
GREENETRACK CASINO	27780.00

DRAWING NUMBERING SYSTEM

SC-0##/ - GENERAL (SYMBOLS LEGEND, NOTES, ETC.)
SC-1##/ - SITE PLANS (HORIZONTAL VIEWS)
SC-2##/ - FLOOR PLANS (VERTICAL VIEWS)
SC-3##/ - SECTIONS (SECTIONAL VIEWS)
SC-4##/ - PART PLAN DRAWINGS (PLANS, ELEVATIONS OR SECTIONS THAT ARE NOT DETAILS)
SC-5##/ - RISERS
SC-6##/ - SCHEDULES
SC-7##/ - DETAILS

LEGEND NOTES

1. THIS SHEET IS A GENERAL LIST OF SYMBOLS AND SHALL BE USED AS A REFERENCE TO DEFINE ITEMS INDICATED ON THE DRAWINGS. NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT.

KEY LEGEND

1 T-501	DETAIL CALL-OUT - PLAN VIEW. DENOTES DETAIL "1" ON DRAWING "T-501".
2 T-501	DETAIL CALL-OUT - ELEVATION VIEW. DENOTES DETAIL "2" ON DRAWING "T-501".

SECURITY LEGEND (CONTINUED)

CAT6	SECURITY CAMERA (ADD A SECOND CAT6 CABLE TO ALL EXTERIOR CAMERAS FOR FUTURE USE.)
PTZ CAM	SECURITY CAMERA (PAN, TILT, ZOOM) (REQUIRES 120V AC)
DOOR	SECURITY SYSTEM DOOR CONFIGURATION DESIGNATOR
1G	SINGLE-GANG BOX
2G	2 GANG BOX
3G	3 GANG BOX
FB	FLOOR BOX
4-11/16"	4-11/16" SQUARE, 2-1/8" DEEP BOX WITH SINGLE GANG PLASTER RING
RING	4-11/16" SQUARE, 2-1/8" DEEP BOX WITH DOUBLE GANG PLASTER RING
SCB	SCREW COVER PULL BOX
RACK	EQUIPMENT RACK ENCLOSURE

DRAWING INDEX

DRAWING	TITLE
SC-001	SECURITY LEGEND
SC-201	SECURITY PLAN - PARTIAL CASINO FLOOR - TYPICAL
SC-000	SECURITY SIGNAL FLOWS

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/ COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
(See below)

EXHIBIT NO:
--

DATE:
June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'

at 24" x 36"

The Grand Hudson HOTEL & CASINO

SC001 SECURITY LEGEND

SC201 SECURITY PLAN - PARTIAL CASINO PLAN TYPICAL

OWNER:
Greenetrack, Inc

LEGAL COUNSEL:
Hodgson Russ LLP

OWNER'S REPRESENTATIVE/
COST CONSULTANT:
BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:
WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:
wendel

MEP ENGINEERS:
VANDERWEIL

INTERIOR DESIGN:
Wimberly INTERIORS

REAL ESTATE BROKER:
RealtyUSA

SHEET TITLE:
(See below)

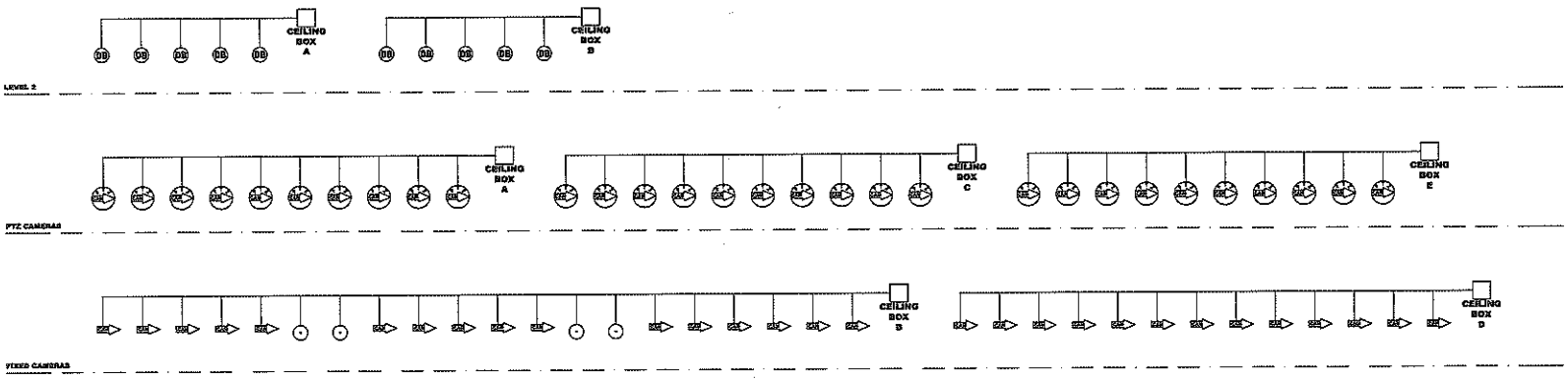
EXHIBIT NO:
-

DATE:
June 30, 2014

NORTH

at 24" x 36"

The Grand Hudson HOTEL & CASINO



SC500 SECURITY SIGNAL FLOWS

OWNER:

Greenetrack, Inc

LEGAL COUNSEL:

Hodgson Russ LLP ATTORNEYS

OWNER'S REPRESENTATIVE/
COST CONSULTANT:

BAER & ASSOCIATES LLC

ARCHITECTURE & PLANNING:

WATG

SITE ASSESSMENT / CIVIL / ENGINEERING / SURVEYING/ LANDSCAPE / STRUCTURAL:

wendel

MEP ENGINEERS:

VANDERWEIL

INTERIOR DESIGN:

Wimberly INTERIORS

REAL ESTATE BROKER:

RealtyUSA

SHEET TITLE:

(See below)

EXHIBIT NO:

-

DATE:

June 30, 2014

NORTH

0 5' 20' 40'
1" = 20'
at 24" x 36"

The Grand Hudson HOTEL & CASINO

Exhibit VIII.C.17.a Studies of Independent Engineers or other Experts Reporting Projections of Estimated Fresh Water and Electricity Demand (Base and Peak- Period) and Sanitary Sewer and Storm Water Discharge, each, for the Proposed Gaming Facility

Sanitary Sewer

Sanitary sewer service will be provided by the Town of New Windsor Sewer District #20, with effluent flowing to the Town of New Windsor wastewater treatment plant. The wastewater treatment system includes screening, aerated grit removal, primary sedimentation, biotowers, secondary sedimentation, and liquid bleach disinfection, prior to effluent discharge to Moodka Creek. The sludge treatment system consists of gravity thickening, polymer conditioning, belt press dewatering, and sludge disposal offsite by incineration.

The plant has a hydraulic design flow of 5.0 MGD (million gallons per day) and the average daily flows for 2013 were 4.08 MGD. The treatment plant design loadings for BOD, (biochemical oxygen demand), and SS, (suspended solids), is 10,000 PPD (pounds per day) each. For 2013, based on the annual average flows and the monthly averages for BOD and SS, the treatment plant average loading for BOD was 4,600 PPD and for SS was 5,648 PPD.

The Town of New Windsor Sewer District No. 20 system includes 73,800 lineal feet of vitrified clay tile sewer from the Stewart Army Subpost, (STAS), ranging in size from 4-inch to 15-inch diameter. Since 1981, 27,480 lineal feet of sewers have been replaced with polyvinylchloride (PVC) pipe and 400 lineal feet has been sliplined. In 1992, a 30-inch diversion sewer was installed along 15 Breunig Road. At that time, all wastewater from the Stewart International Airport was diverted directly to the diversion sewer. The wastewater from the Terrace Housing area has also been redirected to the diversion sewer.

The duplex pump station that is installed is designed for an average day flow of 2.75 MGD and 8.25 MGD peak capacity. 500,000 GPD of this capacity is allocated to the STAS service area, the area of the proposed development.

The proposed development wastewater loadings have been calculated based on the proposed program for the development wastewater loading projections. The loadings have been estimated as follows:

- Projected average daily flows: 180,000 GPD
- Projected BOD Loadings: 900 PPM/1351 PPD
- Projected SS Loadings: 500 PPM/750 PPD

Water

The project will use an estimated 180,000 gallons per day of potable water, which will be supplied by the Town of New Windsor Water District #9. Based on conversations with the Town Engineer and review of current information, there appears to be sufficient water capacity to service the proposed development. No district expansion or new supply lines are required, but there will be new water lines constructed on the site that will connect to existing Town water lines. Some existing Town water lines will require relocation as a result of the proposed development. New or relocated lines will be designed to maintain capacity for any upstream water users serviced by the affected water lines.

The Town of New Windsor receives its water from the Catskill Aqueduct and the town has also added the St. Anne's well to the distribution system. When these supplies are not available, the Silver Stream Reservoir is used as an emergency source.

The Town of New Windsor also has the capability to obtain water from the City and the Town of Newburgh in an emergency or drought condition. The applicant has initiated discussions with the New York City Department of Environmental Protection (DEP) to address project requirements and water demand.

The Town of New Windsor is currently pursuing the development of additional well fields for water sources with a goal of minimizing their dependence on the Catskill Aqueduct and having more reliable water sources during peak demand periods for its residents. This is happening irrespective of the proposed development.

The Town of New Windsor water system serves approximately 22,800 customers through 7,357 service connections. The total amount of water produced in 2013 was approximately 1.1 billion gallons. The daily average of water treated and pumped into the distribution system was 3.2 million gallons per day.

Storm Sewer
Projections for estimated storm flows are as follows:

Casino Site (South of International Boulevard) – discharge into existing trunk line in Bruenig Road:
10-yr Event
- Existing runoff = 67.13 cfs
- Proposed runoff = 86.33 cfs
- Proposed discharge from detention = 46.83 cfs

100-yr Event
- Existing runoff = 103.95 cfs
- Proposed runoff = 126.76 cfs
- Proposed discharge from detention = 62.82 cfs

On-site detention will be provided by use of underground storage systems located beneath the casino site parking areas. The systems will provide sufficient storage and control to attenuate the post development 1-year, 10-year, and 100-year 24-hr peak discharge rates to predevelopment 1-year, 10-year, and 100-year 24-hr peak discharge rates as required by the Town of New Windsor. Storage will be provided in pipes, chambers and/or vaults. Storage volumes will vary, depending on whether rainwater harvesting systems or green roofs are used as part of the development.

Retail Site (North of International Boulevard) – discharge into existing pipe in Reed Street:
10-yr Event
- Existing runoff = 21.04 cfs
- Proposed runoff = 45.06 cfs
- Proposed discharge from detention = 18.04 cfs

100-yr Event
- Existing runoff = 32.06 cfs
- Proposed runoff = 66.48 cfs
- Proposed discharge from detention = 23.50 cfs

On-site detention will be provided by use of underground storage systems located beneath the retail site parking areas. The systems will provide sufficient storage and control to attenuate the post development 1-year, 10-year, and 100-year 24-hr peak discharge rates to predevelopment 1-year, 10-year, and 100-year 24-hr peak discharge rates as required by the Town of New Windsor.

Storage will be provided in pipes, chambers and/or vaults. Storage volumes will vary, depending on whether rainwater harvesting systems or green roofs are used as part of the development.

RV & Bus Parking Site (South of Casino Site) – discharge into existing pipe in Avenue of Americas:

10-yr Event

- Existing = 34.48 cfs
- Proposed = 33.02 cfs

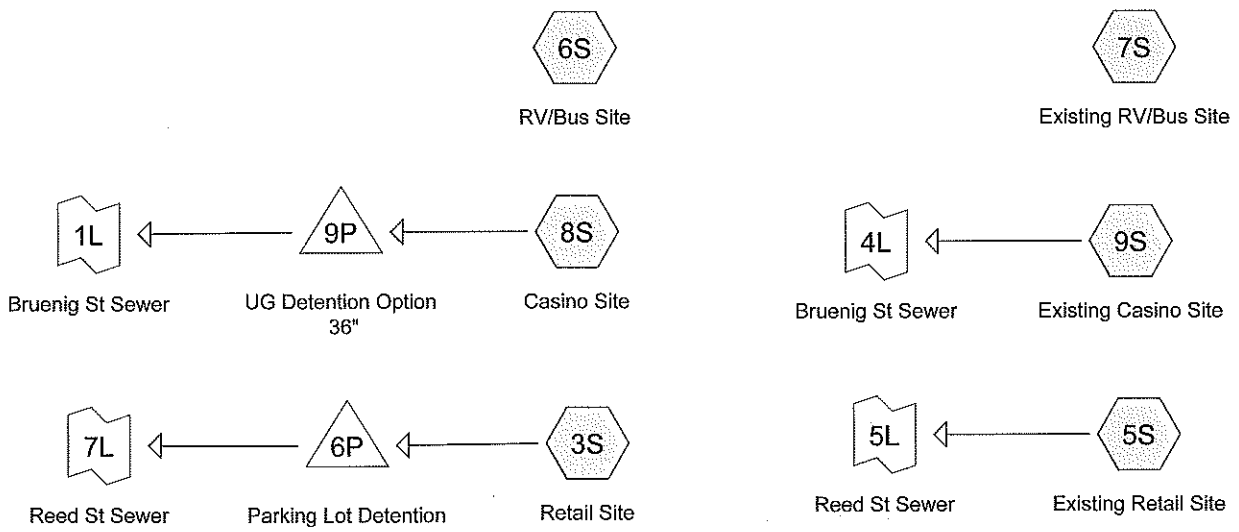
100-yr Event

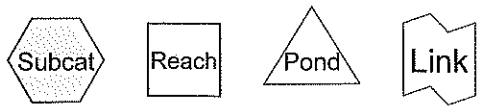
- Existing = 53.71 cfs
- Proposed = 52.33 cfs

As a result of the reduction in impervious area for the RV & Bus Parking Site, proposed flows are less than existing and on-site detention is not required.

The 24-hour extended detention of the post-developed, 1-year, 24-hour storm (Cpv) requirement as defined by Section 9.3.2.A.II of the New York State Stormwater Management Design Manual, 2010 edition will be met with the reduction of the post-construction 1-year, 24-hour discharge rate and velocities when compared against existing conditions.

For additional storm event data and supporting calculations refer to the 'Grand Hudson Concept Design' report prepared using HydroCAD included within this Exhibit.





Routing Diagram for Grand Hudson Concept Design - 140613
Prepared by Wendel, Printed 6/13/2014
HydroCAD® 10.00 s/n 04094 © 2011 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
8.700	80	Pasture/grassland/range, Good, HSG D (6S, 7S)
19.680	84	Pasture/grassland/range, Fair, HSG D (5S, 8S, 9S)
9.900	95	Urban commercial, 85% imp, HSG D (3S)
27.680	98	Paved parking, HSG D (5S, 6S, 7S, 8S, 9S)
65.960	**91**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
65.960	HSG D	3S, 5S, 6S, 7S, 8S, 9S
0.000	Other	
65.960		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	27.680	0.000	27.680	Paved parking	5S, 6S, 7S, 8S, 9S
0.000	0.000	0.000	9.900	0.000	9.900	Urban commercial, 85% imp	3S
0.000	0.000	0.000	19.680	0.000	19.680	Pasture/grassland/range, Fair	5S, 8S, 9S
0.000	0.000	0.000	8.700	0.000	8.700	Pasture/grassland/range, Good	6S, 7S
0.000	**0.000**	**0.000**	**65.960**	**0.000**	**65.960**	**TOTAL AREA**	

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	6P	438.00	435.12	288.0	0.0100	0.013	24.0	0.0	0.0
2	9P	415.00	414.00	100.0	0.0100	0.012	36.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment3S: Retail Site Runoff Area=9.900 ac 85.00% Impervious Runoff Depth=2.35"
Tc=10.0 min CN=95 Runoff=22.47 cfs 1.940 af

Subcatchment5S: Existing Retail Site Runoff Area=5.500 ac 41.82% Impervious Runoff Depth=1.89"
Flow Length=581' Tc=13.7 min CN=90 Runoff=9.44 cfs 0.867 af

Subcatchment6S: RV/Bus Site Runoff Area=6.500 ac 27.69% Impervious Runoff Depth=1.50"
Tc=0.0 min CN=85 Runoff=13.18 cfs 0.815 af

Subcatchment7S: Existing RV/Bus Site Runoff Area=6.500 ac 38.46% Impervious Runoff Depth=1.65"
Tc=0.0 min CN=87 Runoff=14.47 cfs 0.895 af

Subcatchment8S: Casino Site Runoff Area=18.780 ac 85.62% Impervious Runoff Depth=2.45"
Tc=10.0 min CN=96 Runoff=43.78 cfs 3.840 af

Subcatchment9S: Existing Casino Site Runoff Area=18.780 ac 26.62% Impervious Runoff Depth=1.73"
Flow Length=590' Tc=15.0 min CN=88 Runoff=28.70 cfs 2.707 af

Pond 6P: Parking Lot Detention Peak Elev=439.35' Storage=31,007 cf Inflow=22.47 cfs 1.940 af
24.0" Round Culvert n=0.013 L=288.0' S=0.0100 '/' Outflow=8.91 cfs 1.921 af

Pond 9P: UG Detention Option 36" Peak Elev=416.98' Storage=45,616 cf Inflow=43.78 cfs 3.840 af
36.0" Round Culvert n=0.012 L=100.0' S=0.0100 '/' Outflow=23.55 cfs 3.825 af

Link 1L: Bruenig St Sewer Inflow=23.55 cfs 3.825 af
Primary=23.55 cfs 3.825 af

Link 4L: Bruenig St Sewer Inflow=28.70 cfs 2.707 af
Primary=28.70 cfs 2.707 af

Link 5L: Reed St Sewer Inflow=9.44 cfs 0.867 af
Primary=9.44 cfs 0.867 af

Link 7L: Reed St Sewer Inflow=8.91 cfs 1.921 af
Primary=8.91 cfs 1.921 af

Total Runoff Area = 65.960 ac Runoff Volume = 11.064 af Average Runoff Depth = 2.01"
45.28% Pervious = 29.865 ac 54.72% Impervious = 36.095 ac

Summary for Subcatchment 3S: Retail Site

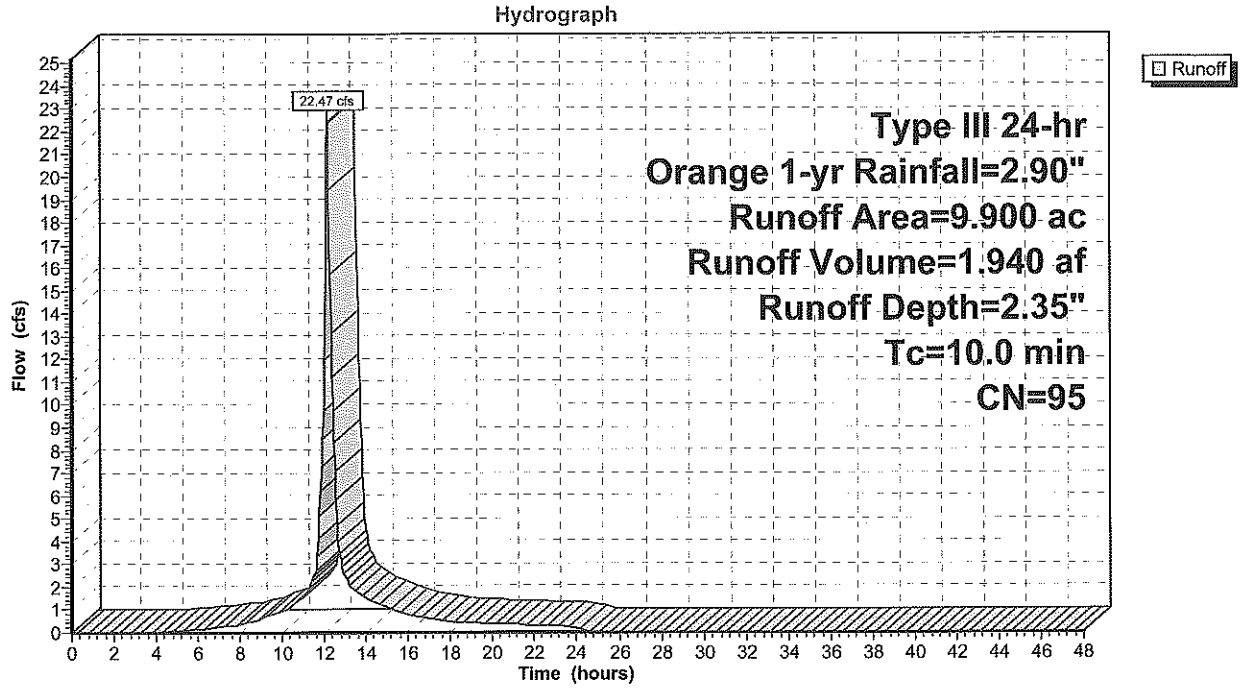
Runoff = 22.47 cfs @ 12.14 hrs, Volume= 1.940 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 1-yr Rainfall=2.90"

Area (ac)	CN	Description
9.900	95	Urban commercial, 85% imp, HSG D
1.485		15.00% Pervious Area
8.415		85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 3S: Retail Site



Summary for Subcatchment 5S: Existing Retail Site

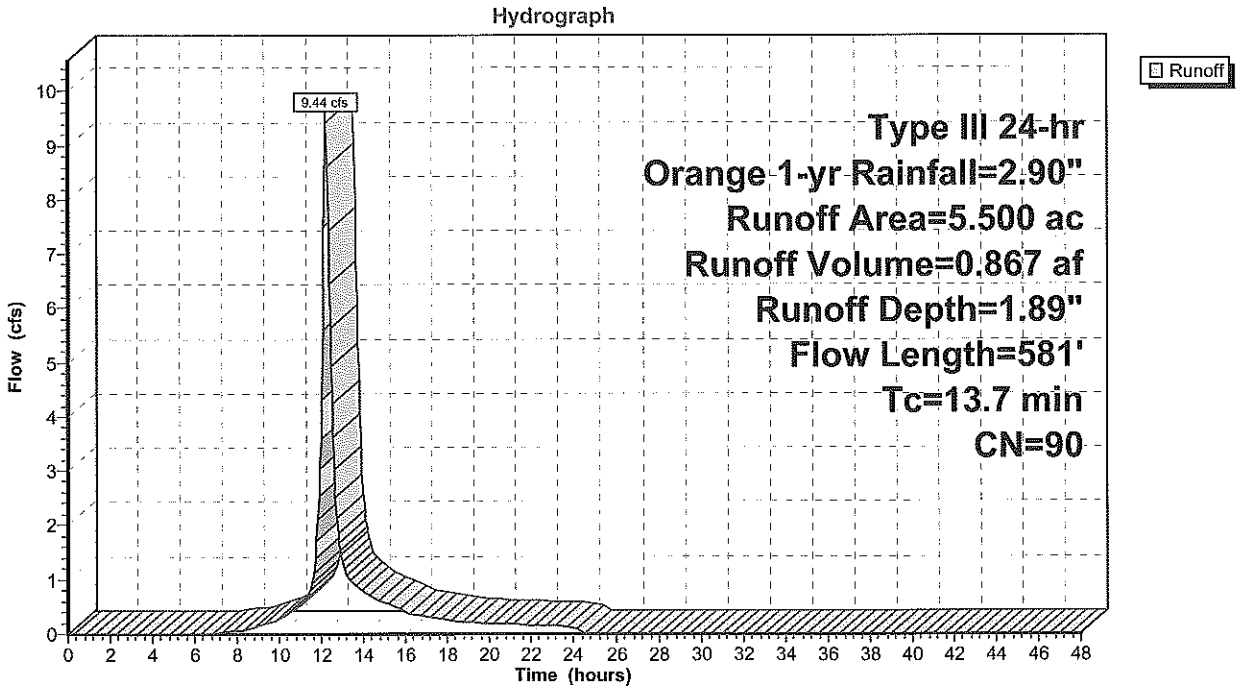
Runoff = 9.44 cfs @ 12.19 hrs, Volume= 0.867 af, Depth= 1.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 1-yr Rainfall=2.90"

Area (ac)	CN	Description
2.300	98	Paved parking, HSG D
3.200	84	Pasture/grassland/range, Fair, HSG D
5.500	90	Weighted Average
3.200		58.18% Pervious Area
2.300		41.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.1000	0.19		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.45"
5.1	481	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.7	581	Total			

Subcatchment 5S: Existing Retail Site



Summary for Subcatchment 6S: RV/Bus Site

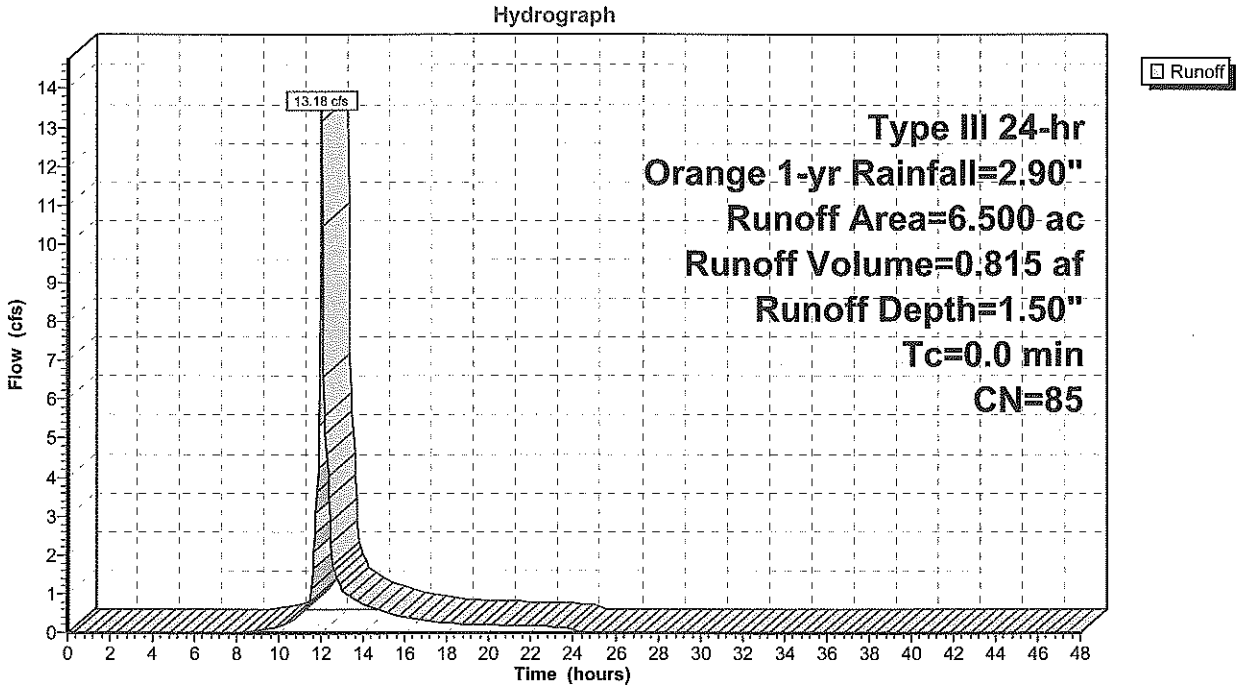
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 13.18 cfs @ 12.00 hrs, Volume= 0.815 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 1-yr Rainfall=2.90"

Area (ac)	CN	Description
4.700	80	Pasture/grassland/range, Good, HSG D
1.800	98	Paved parking, HSG D
6.500	85	Weighted Average
4.700		72.31% Pervious Area
1.800		27.69% Impervious Area

Subcatchment 6S: RV/Bus Site



Summary for Subcatchment 7S: Existing RV/Bus Site

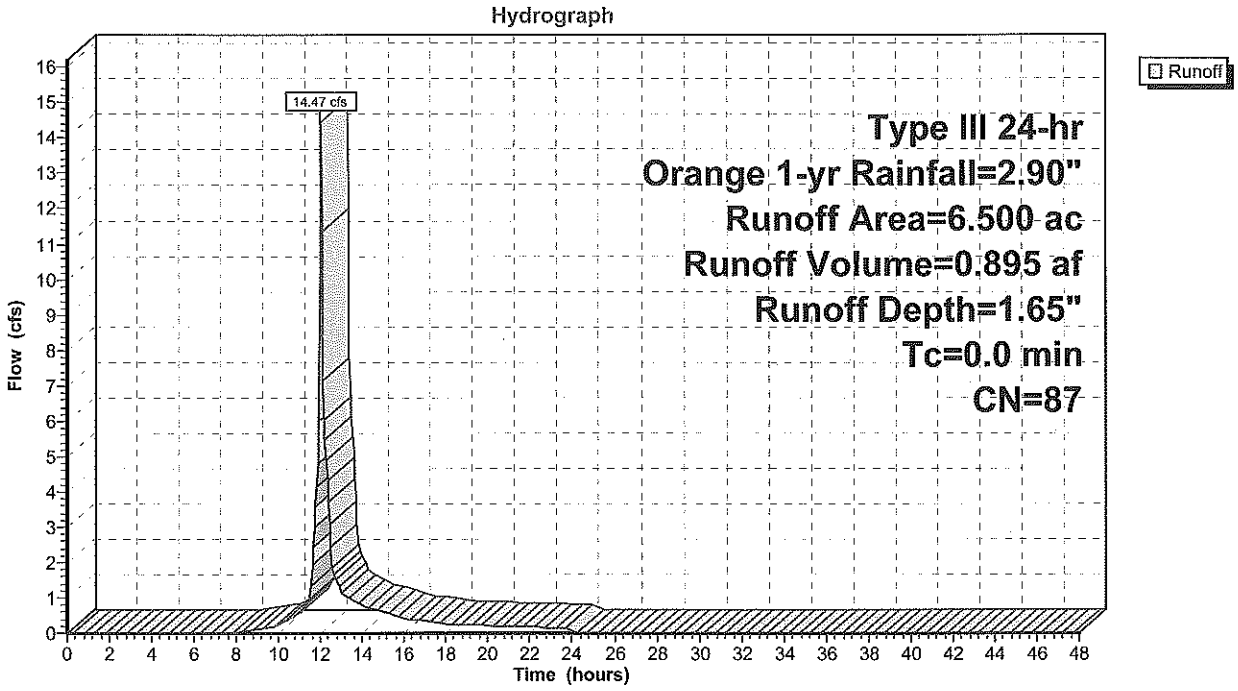
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 14.47 cfs @ 12.00 hrs, Volume= 0.895 af, Depth= 1.65"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 1-yr Rainfall=2.90"

Area (ac)	CN	Description
4.000	80	Pasture/grassland/range, Good, HSG D
2.500	98	Paved parking, HSG D
6.500	87	Weighted Average
4.000		61.54% Pervious Area
2.500		38.46% Impervious Area

Subcatchment 7S: Existing RV/Bus Site



Summary for Subcatchment 8S: Casino Site

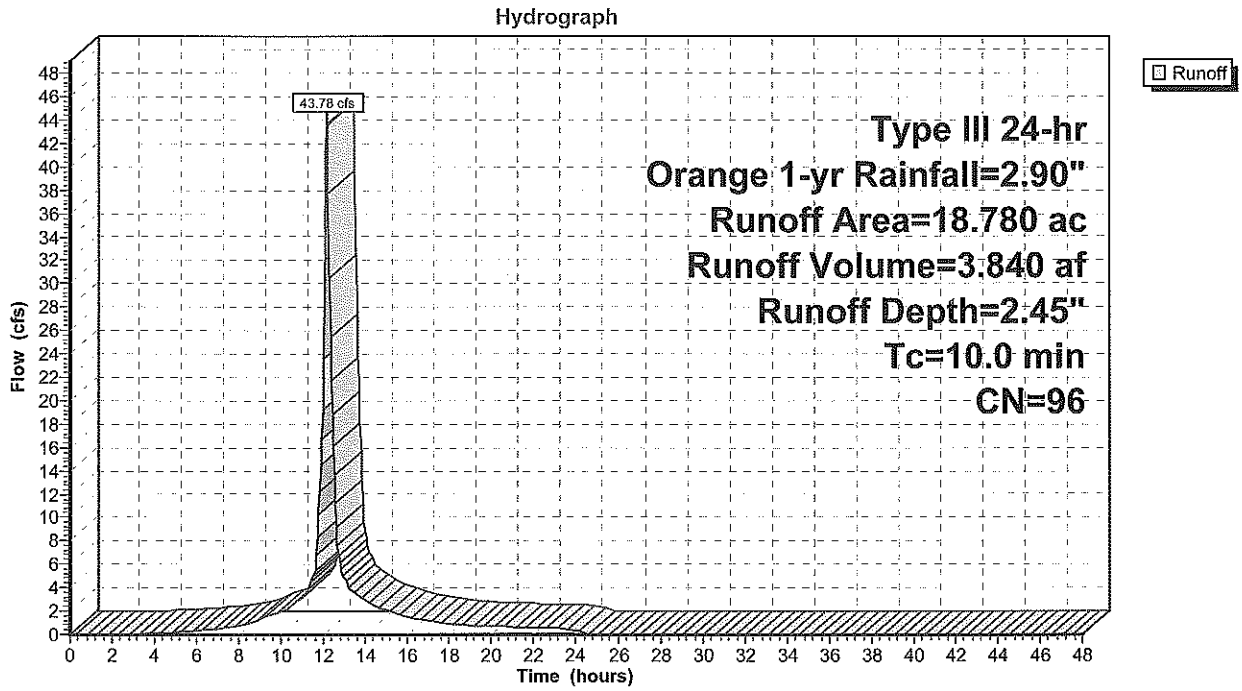
Runoff = 43.78 cfs @ 12.14 hrs, Volume= 3.840 af, Depth= 2.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 1-yr Rainfall=2.90"

Area (ac)	CN	Description
16.080	98	Paved parking, HSG D
2.700	84	Pasture/grassland/range, Fair, HSG D
18.780	96	Weighted Average
2.700		14.38% Pervious Area
16.080		85.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 8S: Casino Site



Summary for Subcatchment 9S: Existing Casino Site

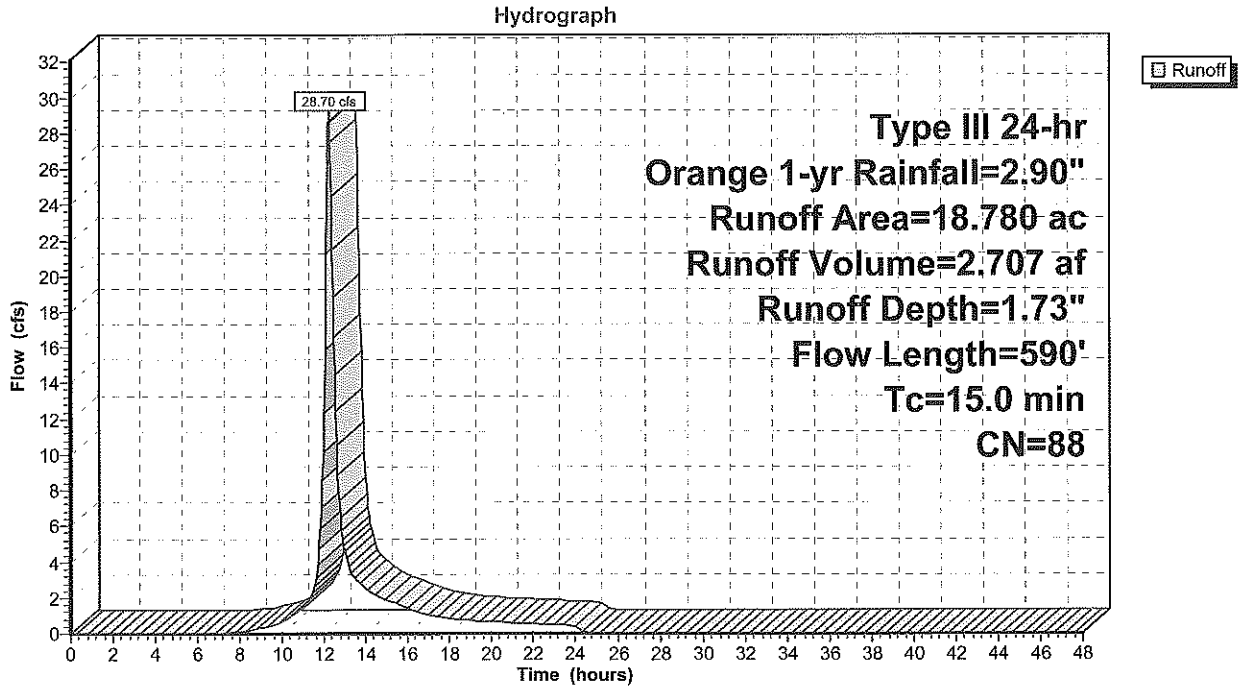
Runoff = 28.70 cfs @ 12.21 hrs, Volume= 2.707 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 1-yr Rainfall=2.90"

Area (ac)	CN	Description
13.780	84	Pasture/grassland/range, Fair, HSG D
5.000	98	Paved parking, HSG D
18.780	88	Weighted Average
13.780		73.38% Pervious Area
5.000		26.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0767	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.45"
4.2	490	0.0760	1.93		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3					**Direct Entry,**
15.0	590	Total			

Subcatchment 9S: Existing Casino Site



Summary for Pond 6P: Parking Lot Detention

Inflow Area = 9.900 ac, 85.00% Impervious, Inflow Depth = 2.35" for Orange 1-yr event
Inflow = 22.47 cfs @ 12.14 hrs, Volume= 1.940 af
Outflow = 8.91 cfs @ 12.43 hrs, Volume= 1.921 af, Atten= 60%, Lag= 17.6 min
Primary = 8.91 cfs @ 12.43 hrs, Volume= 1.921 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 439.35' @ 12.43 hrs Surf.Area= 23,000 sf Storage= 31,007 cf

Plug-Flow detention time= 127.7 min calculated for 1.919 af (99% of inflow)
Center-of-Mass det. time= 122.7 min (910.5 - 787.8)

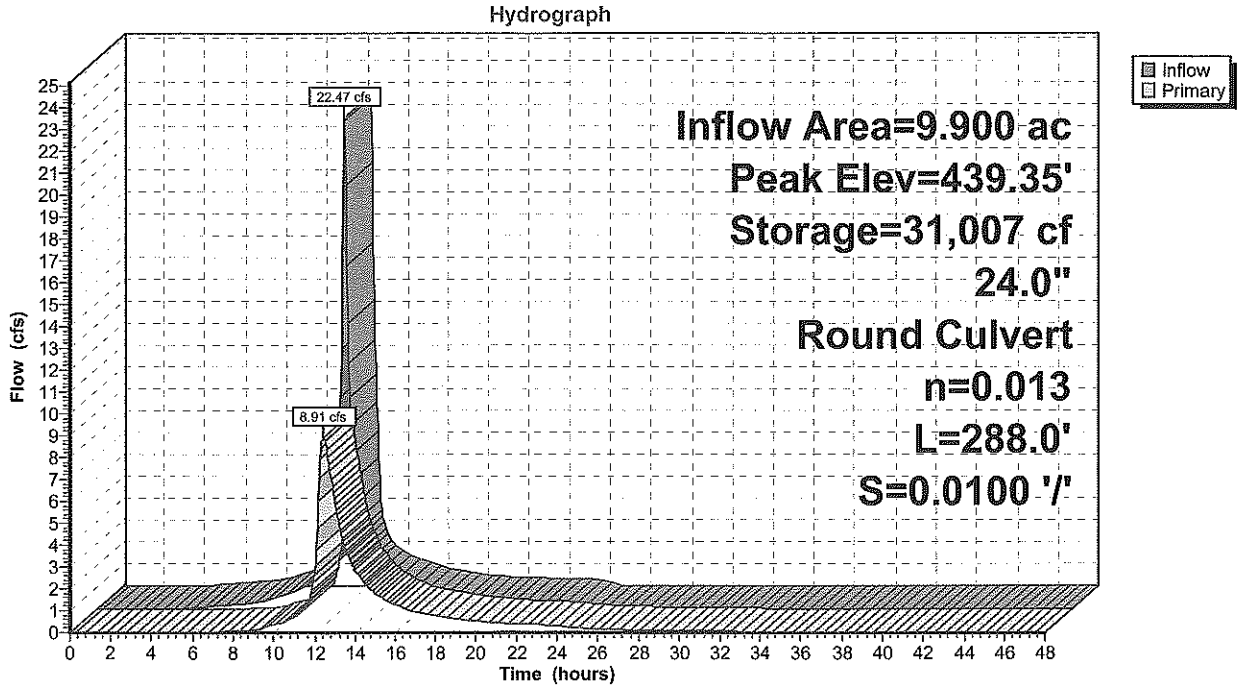
Volume	Invert	Avail.Storage	Storage Description
#1	438.00'	115,000 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
438.00	23,000	0	0
443.00	23,000	115,000	115,000

Device	Routing	Invert	Outlet Devices
#1	Primary	438.00'	**24.0" Round Culvert** L= 288.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 438.00' / 435.12' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=8.89 cfs @ 12.43 hrs HW=439.35' (Free Discharge)
└**1=Culvert** (Inlet Controls 8.89 cfs @ 3.95 fps)

Pond 6P: Parking Lot Detention



Summary for Pond 9P: UG Detention Option 36"

Inflow Area =	18.780 ac, 85.62% Impervious, Inflow Depth = 2.45" for Orange 1-yr event				
Inflow =	43.78 cfs @ 12.14 hrs, Volume=	3.840 af			
Outflow =	23.55 cfs @ 12.33 hrs, Volume=	3.825 af, Atten= 46%, Lag= 11.3 min			
Primary =	23.55 cfs @ 12.33 hrs, Volume=	3.825 af			

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 416.98' @ 12.33 hrs Surf.Area= 23,000 sf Storage= 45,616 cf

Plug-Flow detention time= 82.1 min calculated for 3.825 af (100% of inflow)
Center-of-Mass det. time= 79.6 min (860.2 - 780.6)

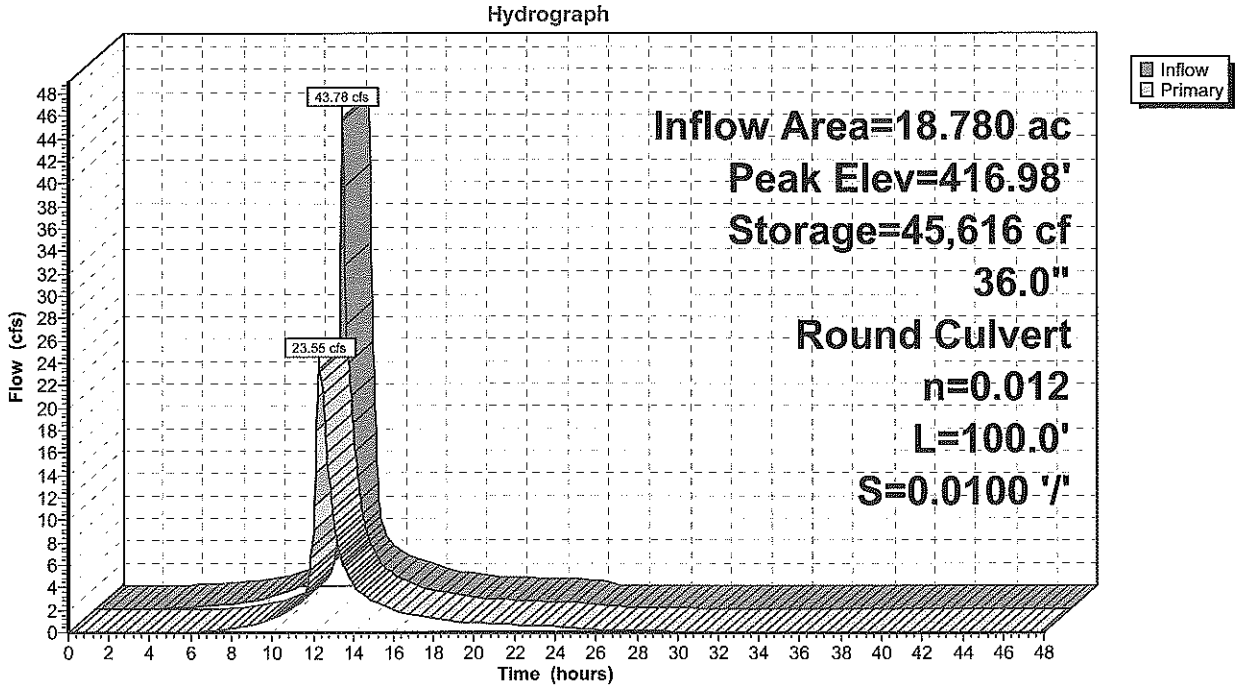
Volume	Invert	Avail.Storage	Storage Description
#1	415.00'	115,000 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
415.00	23,000	0	0
420.00	23,000	115,000	115,000

Device	Routing	Invert	Outlet Devices
#1	Primary	415.00'	**36.0" Round Culvert** L= 100.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 415.00' / 414.00' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 7.07 sf

Primary OutFlow Max=23.50 cfs @ 12.33 hrs HW=416.98' (Free Discharge)
└─**1=Culvert** (Barrel Controls 23.50 cfs @ 6.73 fps)

Pond 9P: UG Detention Option 36"

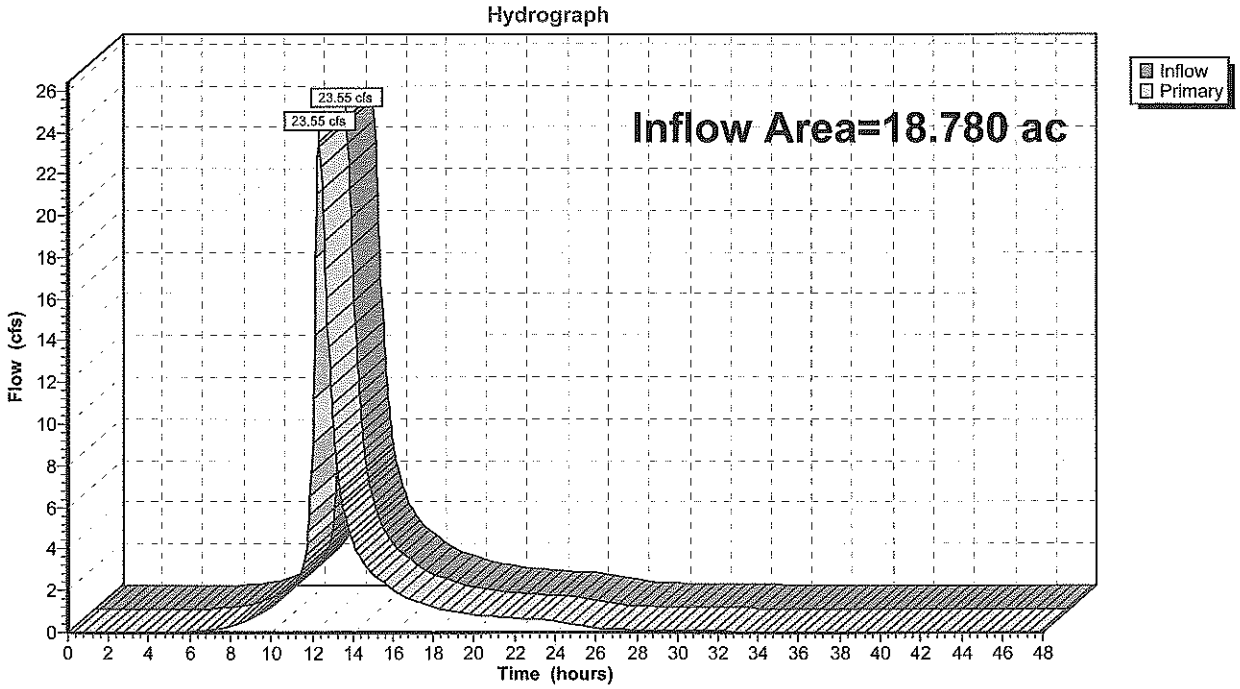


Summary for Link 1L: Bruenig St Sewer

Inflow Area = 18.780 ac, 85.62% Impervious, Inflow Depth > 2.44" for Orange 1-yr event
Inflow = 23.55 cfs @ 12.33 hrs, Volume= 3.825 af
Primary = 23.55 cfs @ 12.33 hrs, Volume= 3.825 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 1L: Bruenig St Sewer

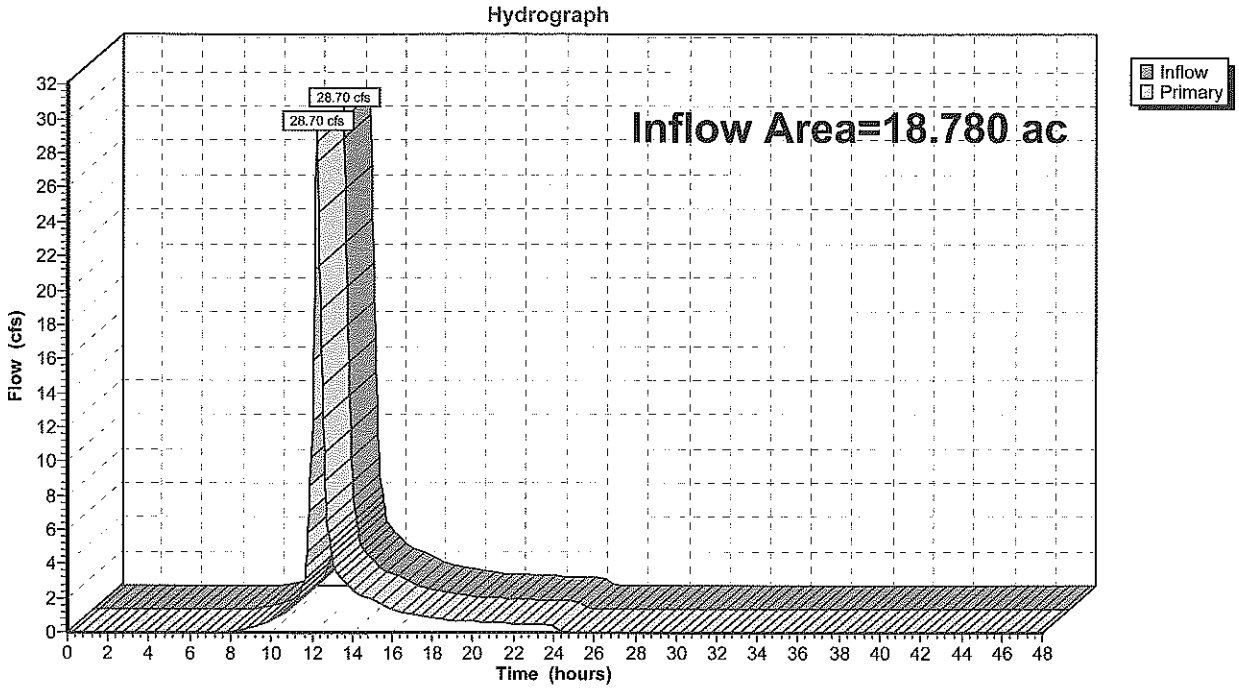


Summary for Link 4L: Bruenig St Sewer

Inflow Area = 18.780 ac, 26.62% Impervious, Inflow Depth = 1.73" for Orange 1-yr event
Inflow = 28.70 cfs @ 12.21 hrs, Volume= 2.707 af
Primary = 28.70 cfs @ 12.21 hrs, Volume= 2.707 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 4L: Bruenig St Sewer

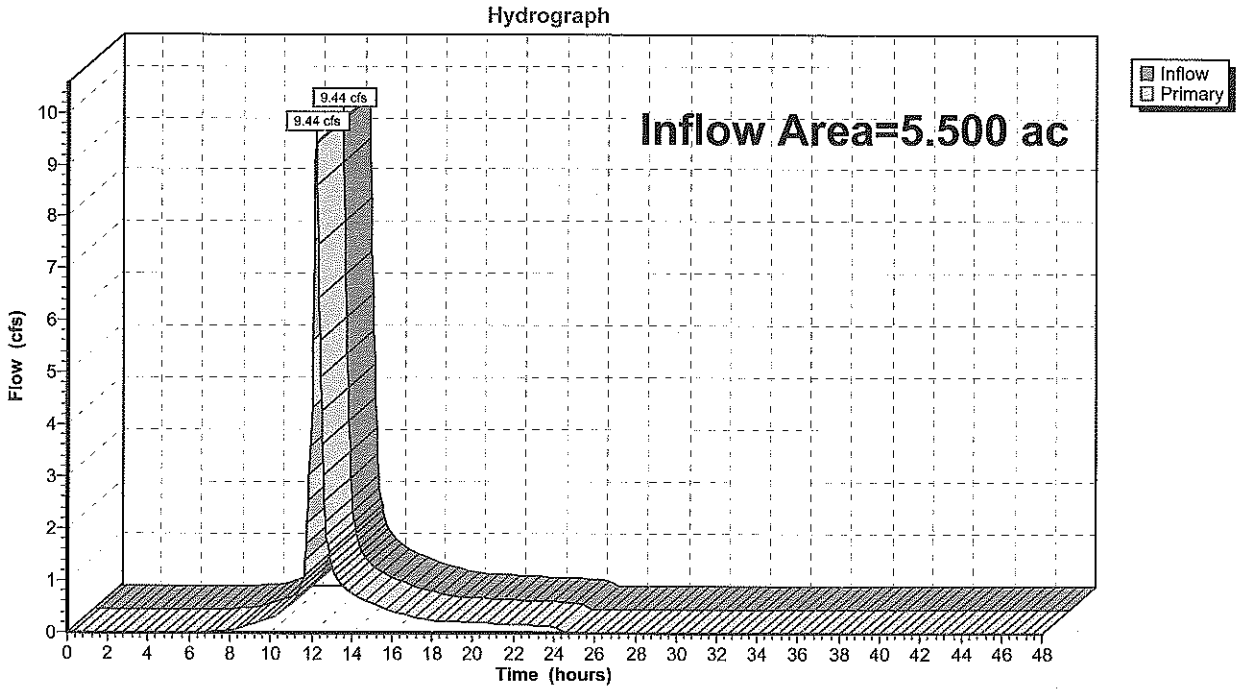


Summary for Link 5L: Reed St Sewer

Inflow Area = 5.500 ac, 41.82% Impervious, Inflow Depth = 1.89" for Orange 1-yr event
Inflow = 9.44 cfs @ 12.19 hrs, Volume= 0.867 af
Primary = 9.44 cfs @ 12.19 hrs, Volume= 0.867 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 5L: Reed St Sewer

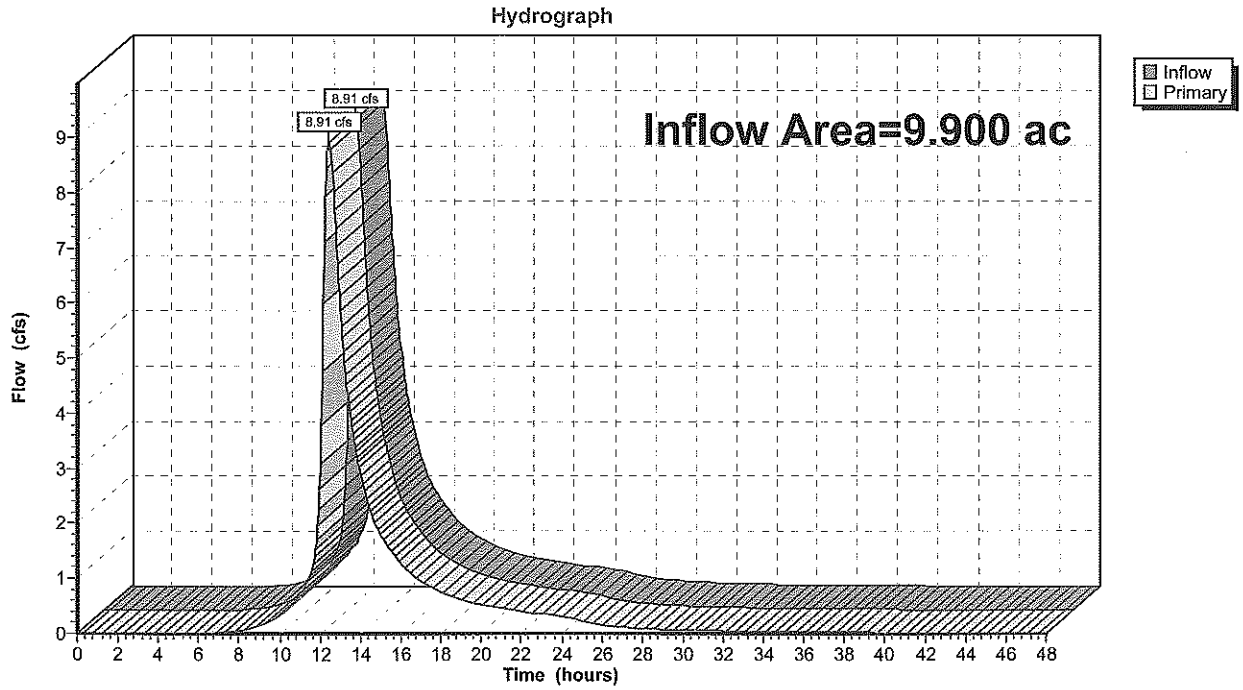


Summary for Link 7L: Reed St Sewer

Inflow Area = 9.900 ac, 85.00% Impervious, Inflow Depth > 2.33" for Orange 1-yr event
Inflow = 8.91 cfs @ 12.43 hrs, Volume= 1.921 af
Primary = 8.91 cfs @ 12.43 hrs, Volume= 1.921 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 7L: Reed St Sewer



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment3S: Retail Site Runoff Area=9.900 ac 85.00% Impervious Runoff Depth=4.92"
Tc=10.0 min CN=95 Runoff=45.06 cfs 4.055 af

Subcatchment5S: Existing Retail Site Runoff Area=5.500 ac 41.82% Impervious Runoff Depth=4.36"
Flow Length=581' Tc=13.7 min CN=90 Runoff=21.04 cfs 1.998 af

Subcatchment6S: RV/Bus Site Runoff Area=6.500 ac 27.69% Impervious Runoff Depth=3.83"
Tc=0.0 min CN=85 Runoff=33.02 cfs 2.076 af

Subcatchment7S: Existing RV/Bus Site Runoff Area=6.500 ac 38.46% Impervious Runoff Depth=4.04"
Tc=0.0 min CN=87 Runoff=34.48 cfs 2.189 af

Subcatchment8S: Casino Site Runoff Area=18.780 ac 85.62% Impervious Runoff Depth=5.03"
Tc=10.0 min CN=96 Runoff=86.33 cfs 7.872 af

Subcatchment9S: Existing Casino Site Runoff Area=18.780 ac 26.62% Impervious Runoff Depth=4.15"
Flow Length=590' Tc=15.0 min CN=88 Runoff=67.13 cfs 6.488 af

Pond 6P: Parking Lot Detention Peak Elev=440.42' Storage=55,702 cf Inflow=45.06 cfs 4.055 af
24.0" Round Culvert n=0.013 L=288.0' S=0.0100 '/' Outflow=18.04 cfs 4.035 af

Pond 9P: UG Detention Option 36" Peak Elev=418.39' Storage=78,043 cf Inflow=86.33 cfs 7.872 af
36.0" Round Culvert n=0.012 L=100.0' S=0.0100 '/' Outflow=46.83 cfs 7.856 af

Link 1L: Bruenig St Sewer Inflow=46.83 cfs 7.856 af
Primary=46.83 cfs 7.856 af

Link 4L: Bruenig St Sewer Inflow=67.13 cfs 6.488 af
Primary=67.13 cfs 6.488 af

Link 5L: Reed St Sewer Inflow=21.04 cfs 1.998 af
Primary=21.04 cfs 1.998 af

Link 7L: Reed St Sewer Inflow=18.04 cfs 4.035 af
Primary=18.04 cfs 4.035 af

Total Runoff Area = 65.960 ac Runoff Volume = 24.678 af Average Runoff Depth = 4.49"
45.28% Pervious = 29.865 ac 54.72% Impervious = 36.095 ac

Summary for Subcatchment 3S: Retail Site

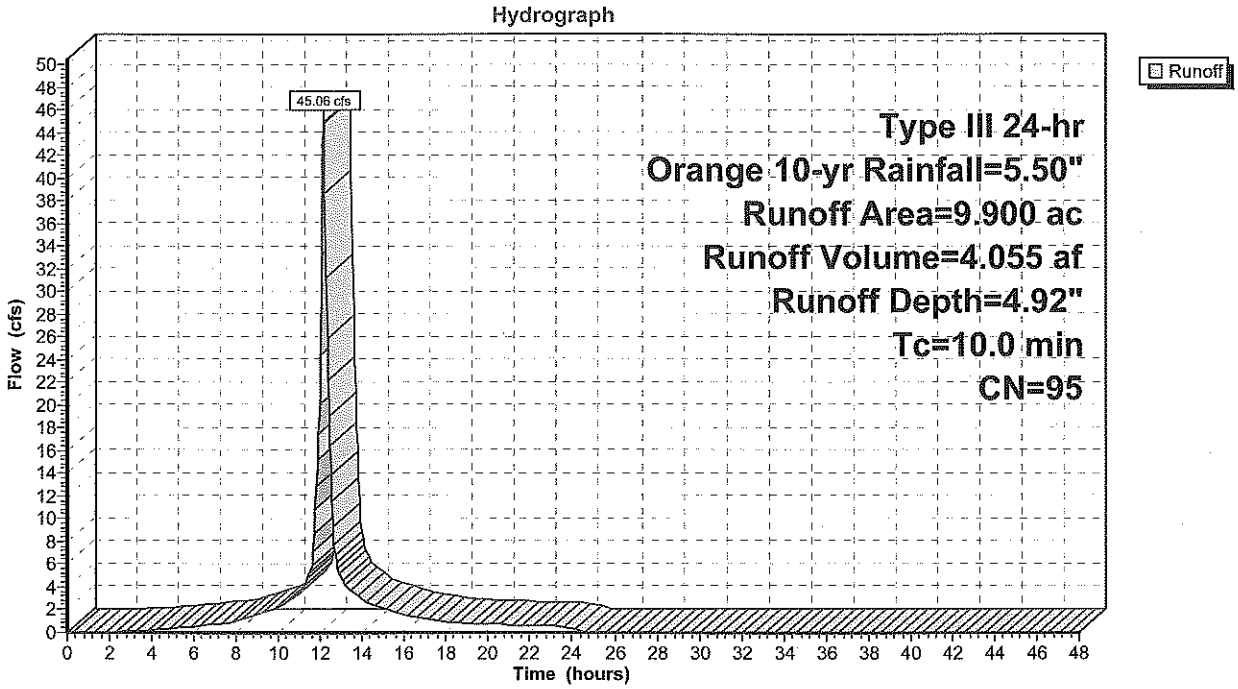
Runoff = 45.06 cfs @ 12.14 hrs, Volume= 4.055 af, Depth= 4.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 10-yr Rainfall=5.50"

Area (ac)	CN	Description
9.900	95	Urban commercial, 85% imp, HSG D
1.485		15.00% Pervious Area
8.415		85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 3S: Retail Site



Summary for Subcatchment 5S: Existing Retail Site

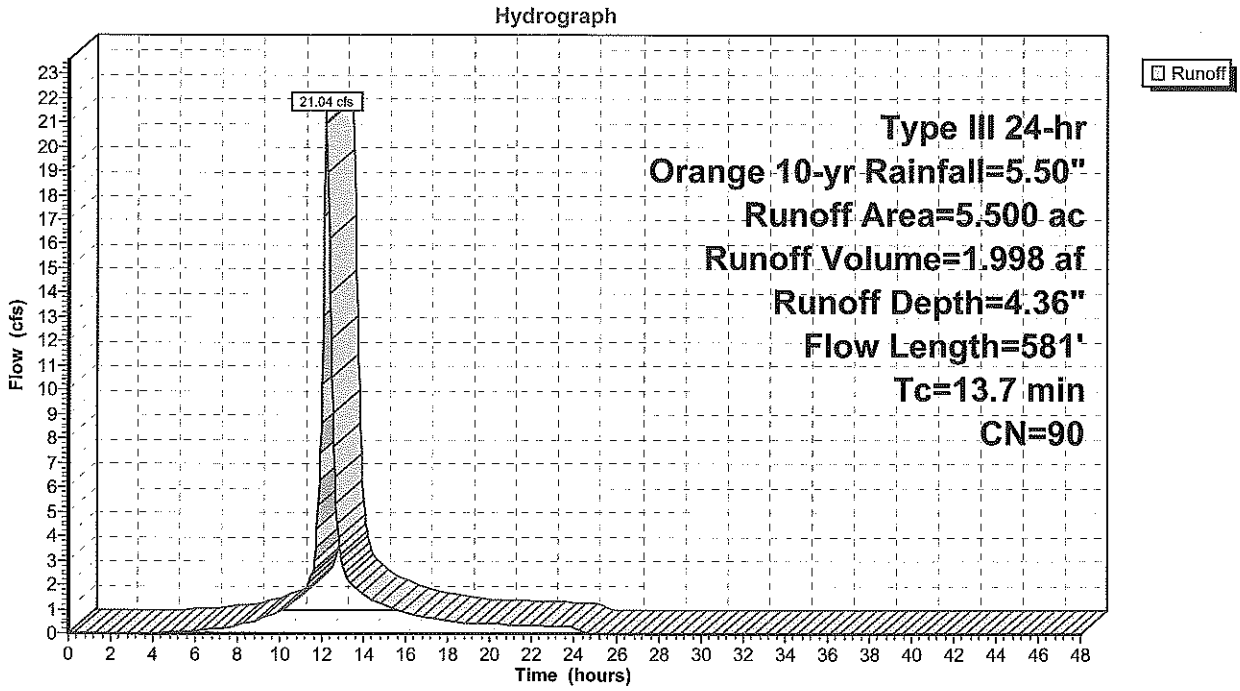
Runoff = 21.04 cfs @ 12.18 hrs, Volume= 1.998 af, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 10-yr Rainfall=5.50"

Area (ac)	CN	Description
2.300	98	Paved parking, HSG D
3.200	84	Pasture/grassland/range, Fair, HSG D
5.500	90	Weighted Average
3.200		58.18% Pervious Area
2.300		41.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.1000	0.19		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.45"
5.1	481	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.7	581	Total			

Subcatchment 5S: Existing Retail Site



Summary for Subcatchment 6S: RV/Bus Site

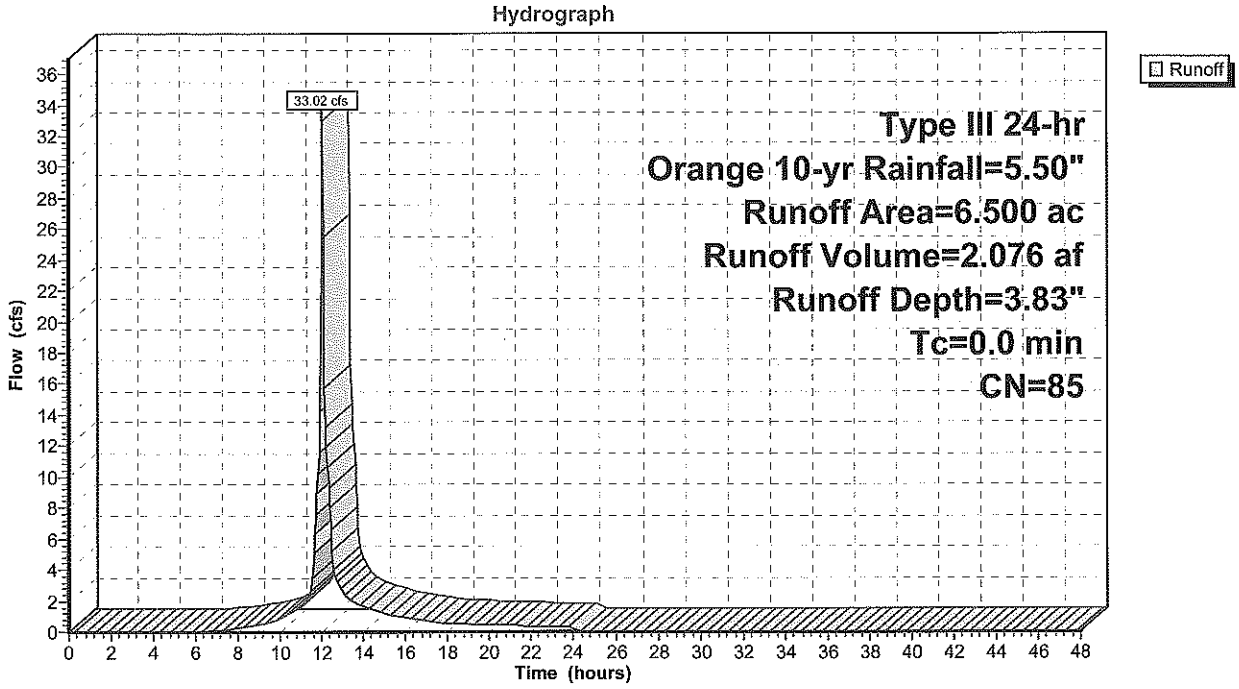
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 33.02 cfs @ 12.00 hrs, Volume= 2.076 af, Depth= 3.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 10-yr Rainfall=5.50"

Area (ac)	CN	Description
4.700	80	Pasture/grassland/range, Good, HSG D
1.800	98	Paved parking, HSG D
6.500	85	Weighted Average
4.700		72.31% Pervious Area
1.800		27.69% Impervious Area

Subcatchment 6S: RV/Bus Site



Summary for Subcatchment 7S: Existing RV/Bus Site

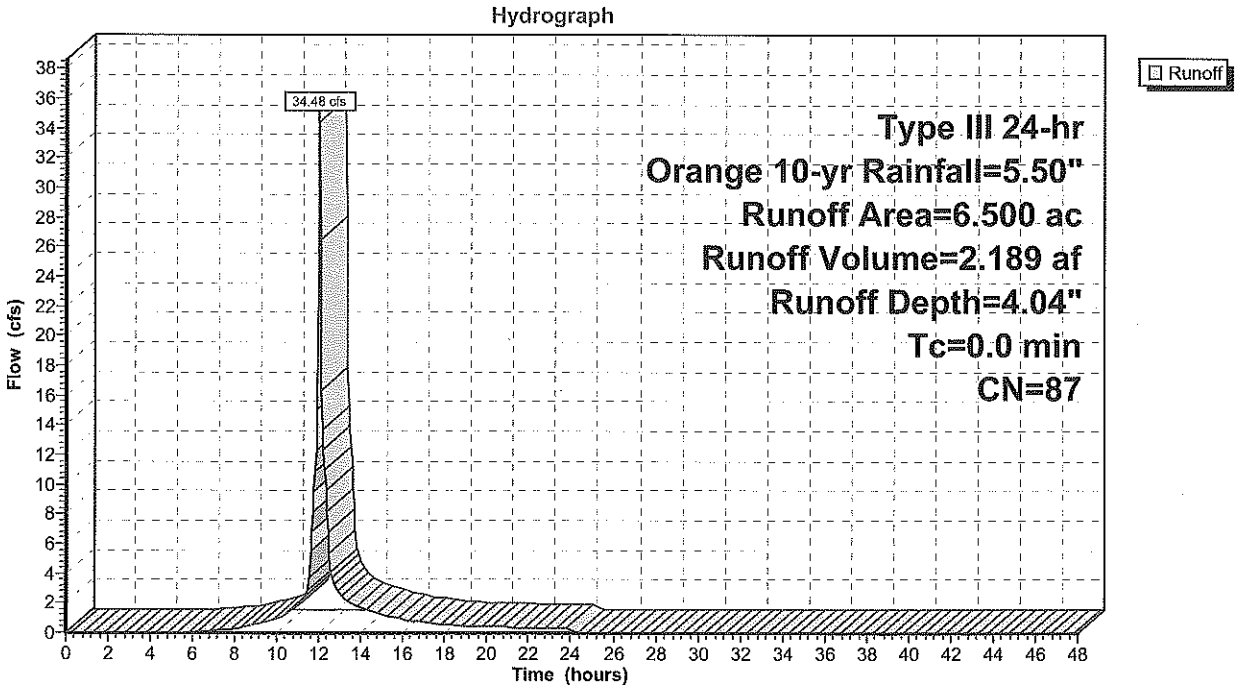
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 34.48 cfs @ 12.00 hrs, Volume= 2.189 af, Depth= 4.04"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 10-yr Rainfall=5.50"

Area (ac)	CN	Description
4.000	80	Pasture/grassland/range, Good, HSG D
2.500	98	Paved parking, HSG D
6.500	87	Weighted Average
4.000		61.54% Pervious Area
2.500		38.46% Impervious Area

Subcatchment 7S: Existing RV/Bus Site



Summary for Subcatchment 8S: Casino Site

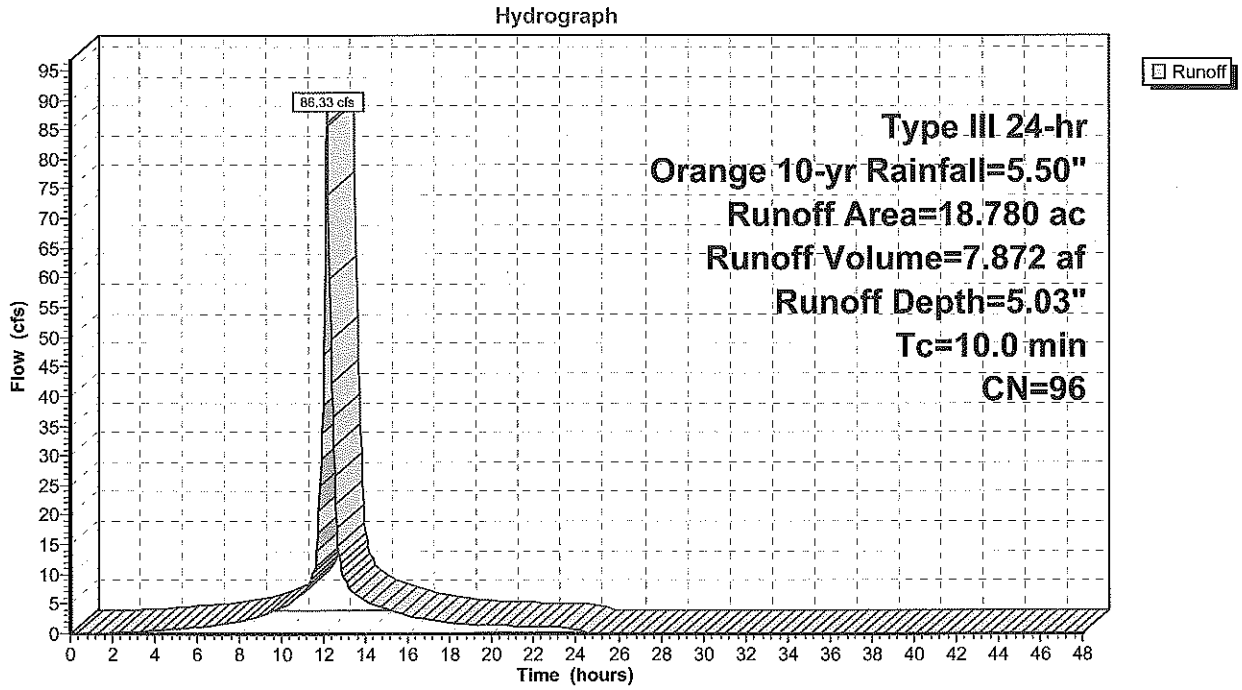
Runoff = 86.33 cfs @ 12.14 hrs, Volume= 7.872 af, Depth= 5.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 10-yr Rainfall=5.50"

Area (ac)	CN	Description
16.080	98	Paved parking, HSG D
2.700	84	Pasture/grassland/range, Fair, HSG D
18.780	96	Weighted Average
2.700		14.38% Pervious Area
16.080		85.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 8S: Casino Site



Summary for Subcatchment 9S: Existing Casino Site

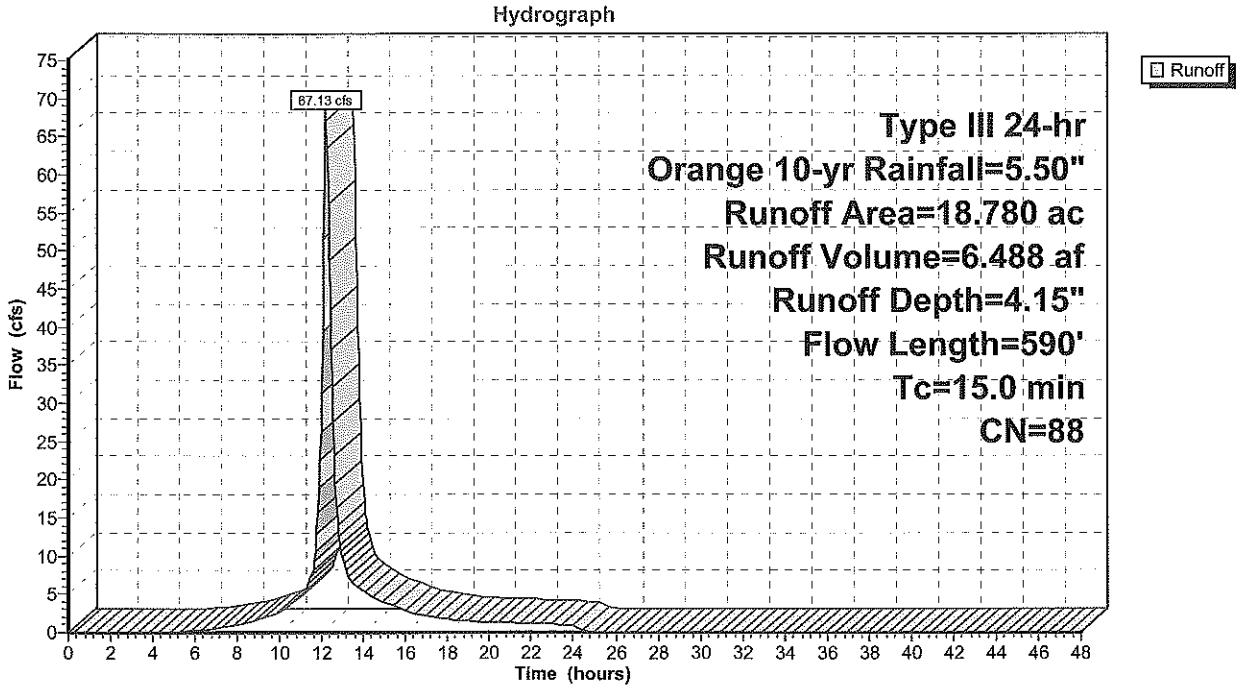
Runoff = 67.13 cfs @ 12.20 hrs, Volume= 6.488 af, Depth= 4.15"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 10-yr Rainfall=5.50"

Area (ac)	CN	Description
13.780	84	Pasture/grassland/range, Fair, HSG D
5.000	98	Paved parking, HSG D
18.780	88	Weighted Average
13.780		73.38% Pervious Area
5.000		26.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0767	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.45"
4.2	490	0.0760	1.93		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3					**Direct Entry,**
15.0	590	Total			

Subcatchment 9S: Existing Casino Site



Summary for Pond 6P: Parking Lot Detention

Inflow Area =	9.900 ac, 85.00% Impervious, Inflow Depth = 4.92" for Orange 10-yr event				
Inflow =	45.06 cfs @	12.14 hrs, Volume=	4.055 af		
Outflow =	18.04 cfs @	12.42 hrs, Volume=	4.035 af, Atten= 60%, Lag= 17.1 min		
Primary =	18.04 cfs @	12.42 hrs, Volume=	4.035 af		

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 440.42' @ 12.42 hrs Surf.Area= 23,000 sf Storage= 55,702 cf

Plug-Flow detention time= 95.7 min calculated for 4.035 af (100% of inflow)
Center-of-Mass det. time= 92.4 min (861.9 - 769.5)

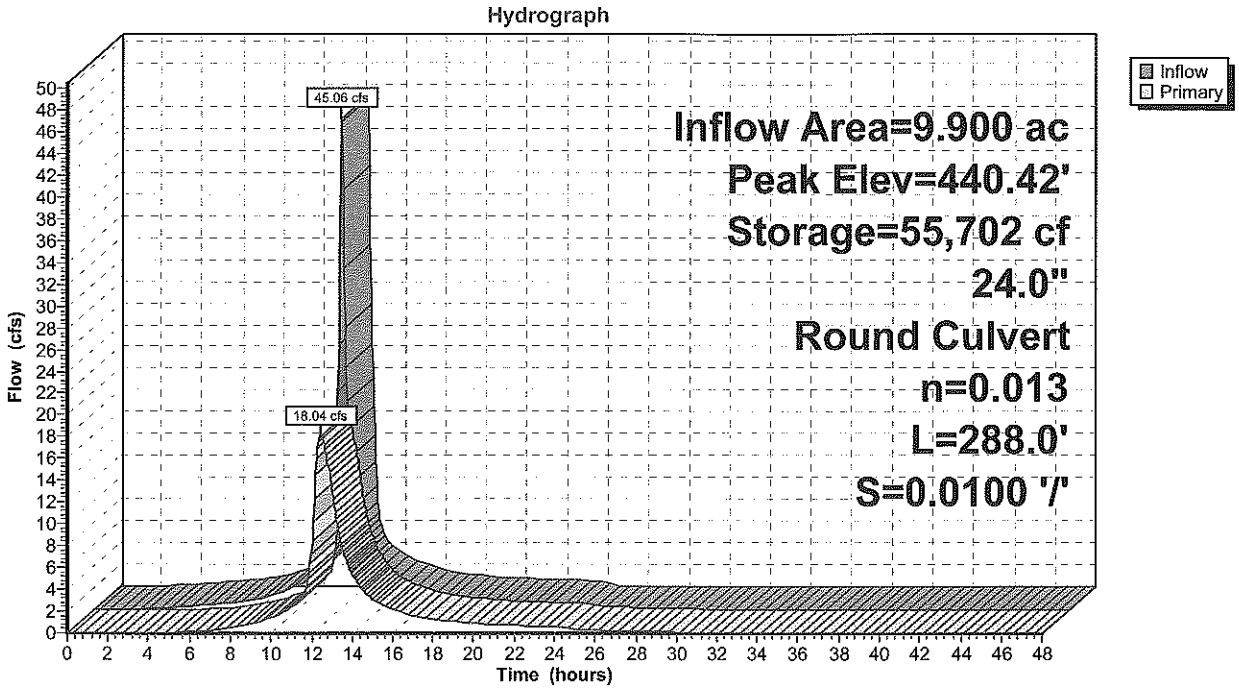
Volume	Invert	Avail.Storage	Storage Description
#1	438.00'	115,000 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
438.00	23,000	0	0
443.00	23,000	115,000	115,000

Device	Routing	Invert	Outlet Devices
#1	Primary	438.00'	**24.0" Round Culvert** L= 288.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 438.00' / 435.12' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=18.02 cfs @ 12.42 hrs HW=440.42' (Free Discharge)
└**1=Culvert** (Inlet Controls 18.02 cfs @ 5.74 fps)

Pond 6P: Parking Lot Detention



Summary for Pond 9P: UG Detention Option 36"

Inflow Area = 18.780 ac, 85.62% Impervious, Inflow Depth = 5.03" for Orange 10-yr event
Inflow = 86.33 cfs @ 12.14 hrs, Volume= 7.872 af
Outflow = 46.83 cfs @ 12.32 hrs, Volume= 7.856 af, Atten= 46%, Lag= 11.1 min
Primary = 46.83 cfs @ 12.32 hrs, Volume= 7.856 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 418.39' @ 12.32 hrs Surf.Area= 23,000 sf Storage= 78,043 cf

Plug-Flow detention time= 60.8 min calculated for 7.856 af (100% of inflow)
Center-of-Mass det. time= 59.5 min (823.4 - 763.9)

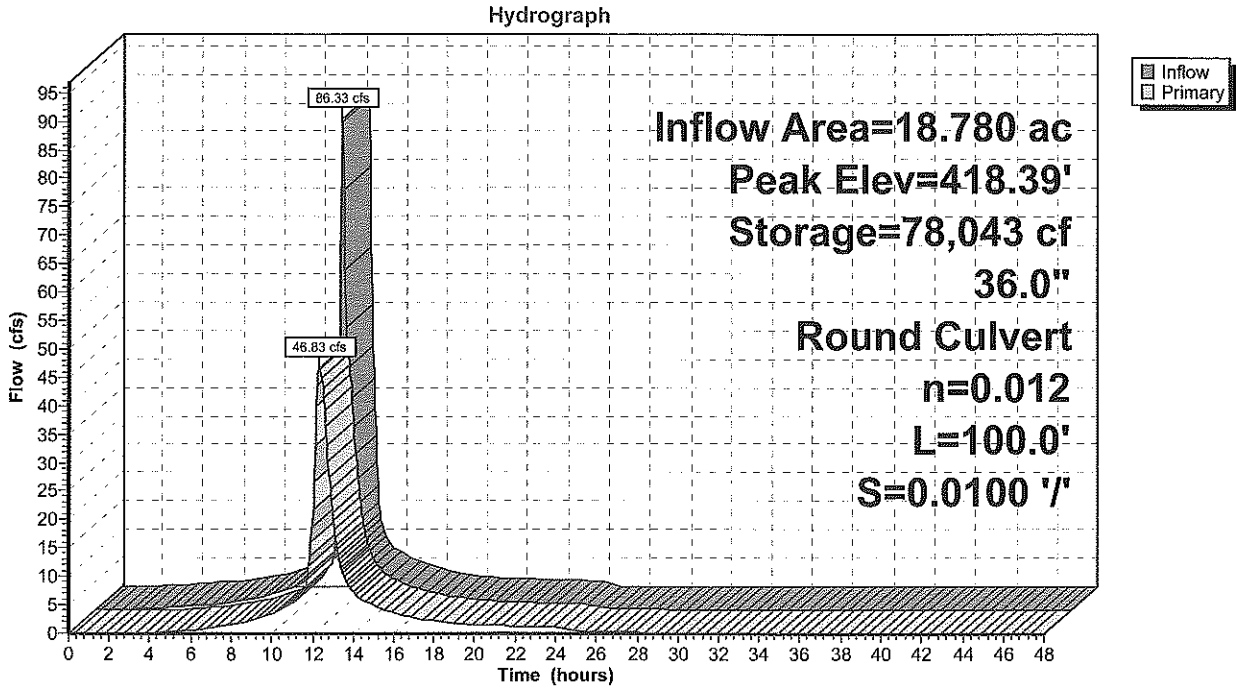
Volume	Invert	Avail.Storage	Storage Description
#1	415.00'	115,000 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
415.00	23,000	0	0
420.00	23,000	115,000	115,000

Device	Routing	Invert	Outlet Devices
#1	Primary	415.00'	**36.0" Round Culvert** L= 100.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 415.00' / 414.00' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 7.07 sf

Primary OutFlow Max=46.72 cfs @ 12.32 hrs HW=418.38' (Free Discharge)
└**1=Culvert** (Inlet Controls 46.72 cfs @ 6.61 fps)

Pond 9P: UG Detention Option 36"

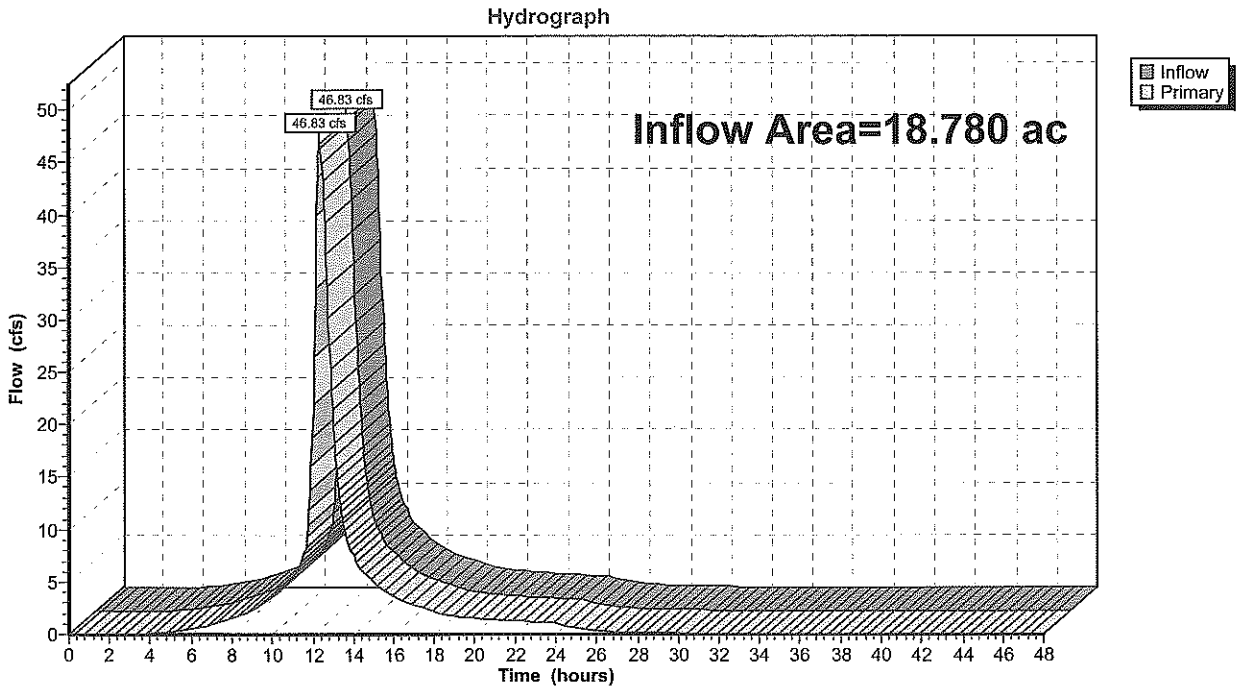


Summary for Link 1L: Bruenig St Sewer

Inflow Area = 18.780 ac, 85.62% Impervious, Inflow Depth > 5.02" for Orange 10-yr event
Inflow = 46.83 cfs @ 12.32 hrs, Volume= 7.856 af
Primary = 46.83 cfs @ 12.32 hrs, Volume= 7.856 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 1L: Bruenig St Sewer

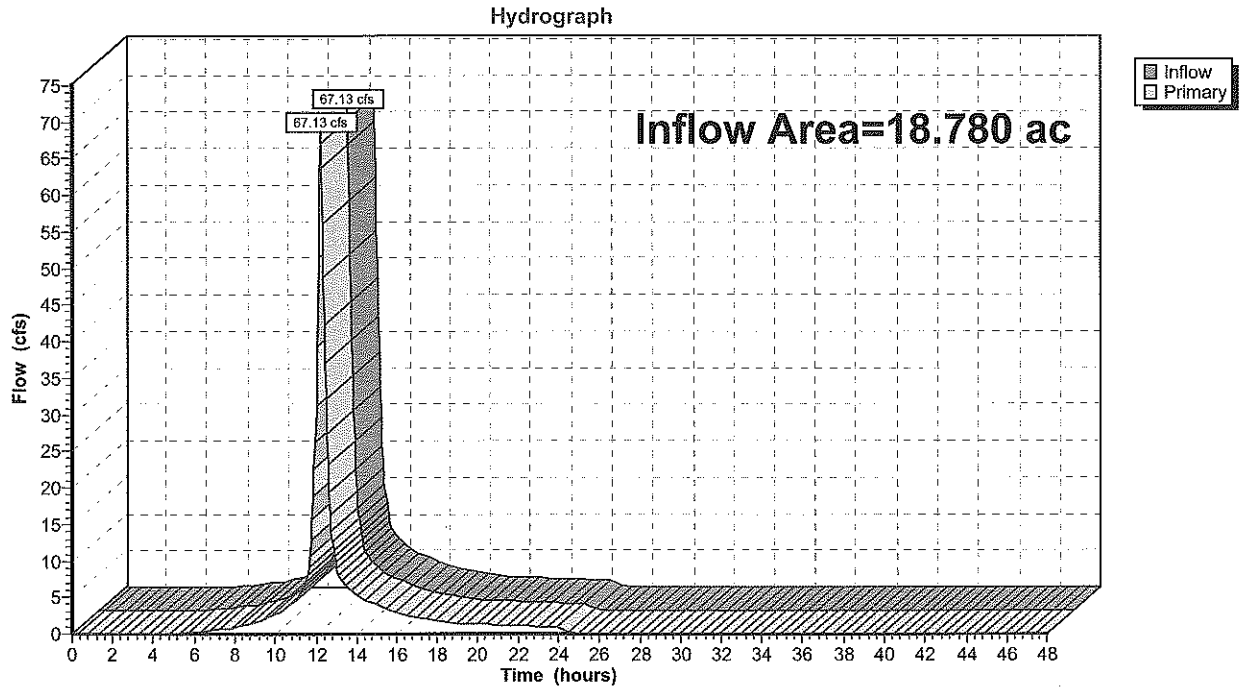


Summary for Link 4L: Bruenig St Sewer

Inflow Area = 18.780 ac, 26.62% Impervious, Inflow Depth = 4.15" for Orange 10-yr event
Inflow = 67.13 cfs @ 12.20 hrs, Volume= 6.488 af
Primary = 67.13 cfs @ 12.20 hrs, Volume= 6.488 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 4L: Bruenig St Sewer

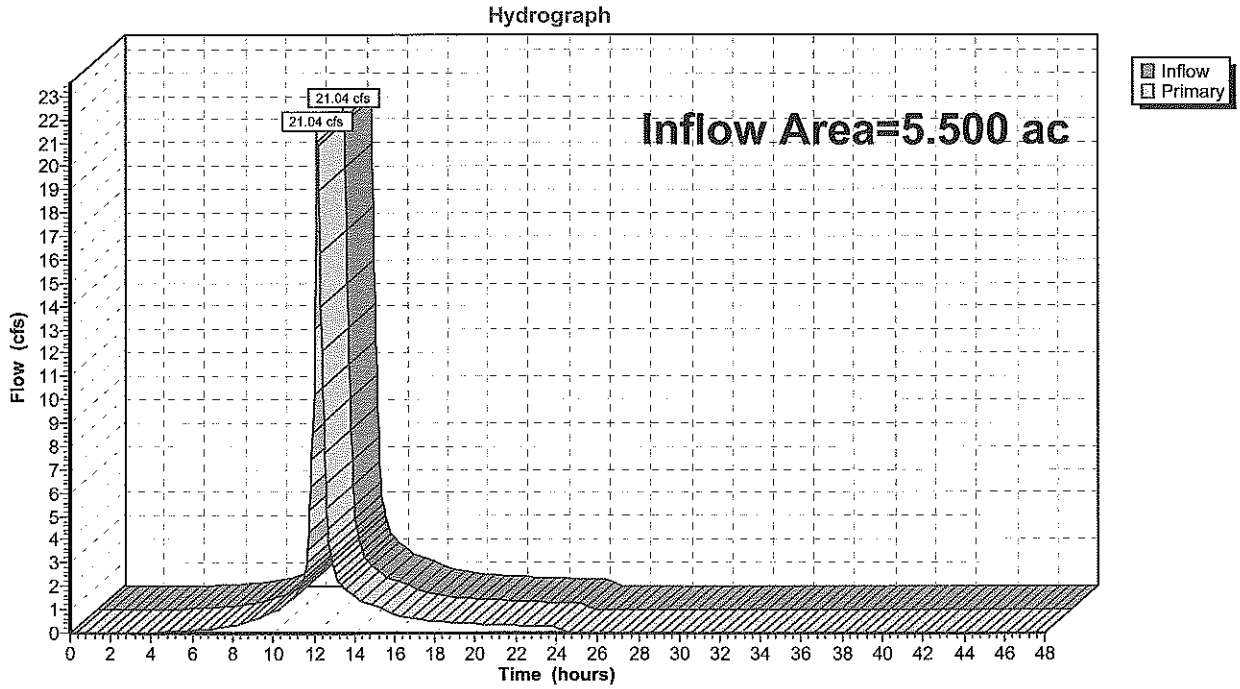


Summary for Link 5L: Reed St Sewer

Inflow Area = 5.500 ac, 41.82% Impervious, Inflow Depth = 4.36" for Orange 10-yr event
Inflow = 21.04 cfs @ 12.18 hrs, Volume= 1.998 af
Primary = 21.04 cfs @ 12.18 hrs, Volume= 1.998 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 5L: Reed St Sewer

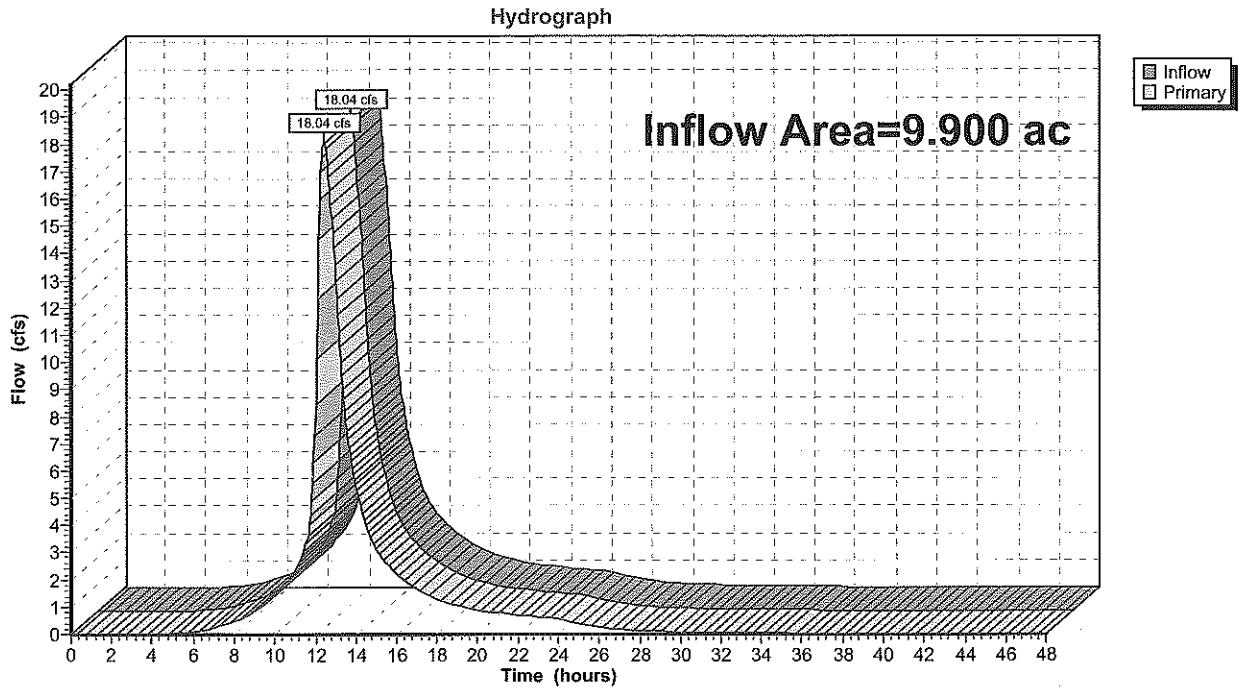


Summary for Link 7L: Reed St Sewer

Inflow Area = 9.900 ac, 85.00% Impervious, Inflow Depth > 4.89" for Orange 10-yr event
Inflow = 18.04 cfs @ 12.42 hrs, Volume= 4.035 af
Primary = 18.04 cfs @ 12.42 hrs, Volume= 4.035 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 7L: Reed St Sewer



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment3S: Retail Site Runoff Area=9.900 ac 85.00% Impervious Runoff Depth=7.40"
Tc=10.0 min CN=95 Runoff=66.48 cfs 6.106 af

Subcatchment5S: Existing Retail Site Runoff Area=5.500 ac 41.82% Impervious Runoff Depth=6.81"
Flow Length=581' Tc=13.7 min CN=90 Runoff=32.06 cfs 3.119 af

Subcatchment6S: RV/Bus Site Runoff Area=6.500 ac 27.69% Impervious Runoff Depth=6.21"
Tc=0.0 min CN=85 Runoff=52.33 cfs 3.366 af

Subcatchment7S: Existing RV/Bus Site Runoff Area=6.500 ac 38.46% Impervious Runoff Depth=6.45"
Tc=0.0 min CN=87 Runoff=53.71 cfs 3.494 af

Subcatchment8S: Casino Site Runoff Area=18.780 ac 85.62% Impervious Runoff Depth=7.52"
Tc=10.0 min CN=96 Runoff=126.76 cfs 11.770 af

Subcatchment9S: Existing Casino Site Runoff Area=18.780 ac 26.62% Impervious Runoff Depth=6.57"
Flow Length=590' Tc=15.0 min CN=88 Runoff=103.95 cfs 10.279 af

Pond 6P: Parking Lot Detention Peak Elev=441.54' Storage=81,437 cf Inflow=66.48 cfs 6.106 af
24.0" Round Culvert n=0.013 L=288.0' S=0.0100 '/' Outflow=23.50 cfs 6.085 af

Pond 9P: UG Detention Option 36" Peak Elev=419.91' Storage=112,851 cf Inflow=126.76 cfs 11.770 af
36.0" Round Culvert n=0.012 L=100.0' S=0.0100 '/' Outflow=62.82 cfs 11.754 af

Link 1L: Bruenig St Sewer Inflow=62.82 cfs 11.754 af
Primary=62.82 cfs 11.754 af

Link 4L: Bruenig St Sewer Inflow=103.95 cfs 10.279 af
Primary=103.95 cfs 10.279 af

Link 5L: Reed St Sewer Inflow=32.06 cfs 3.119 af
Primary=32.06 cfs 3.119 af

Link 7L: Reed St Sewer Inflow=23.50 cfs 6.085 af
Primary=23.50 cfs 6.085 af

Total Runoff Area = 65.960 ac Runoff Volume = 38.134 af Average Runoff Depth = 6.94"
45.28% Pervious = 29.865 ac 54.72% Impervious = 36.095 ac

Summary for Subcatchment 3S: Retail Site

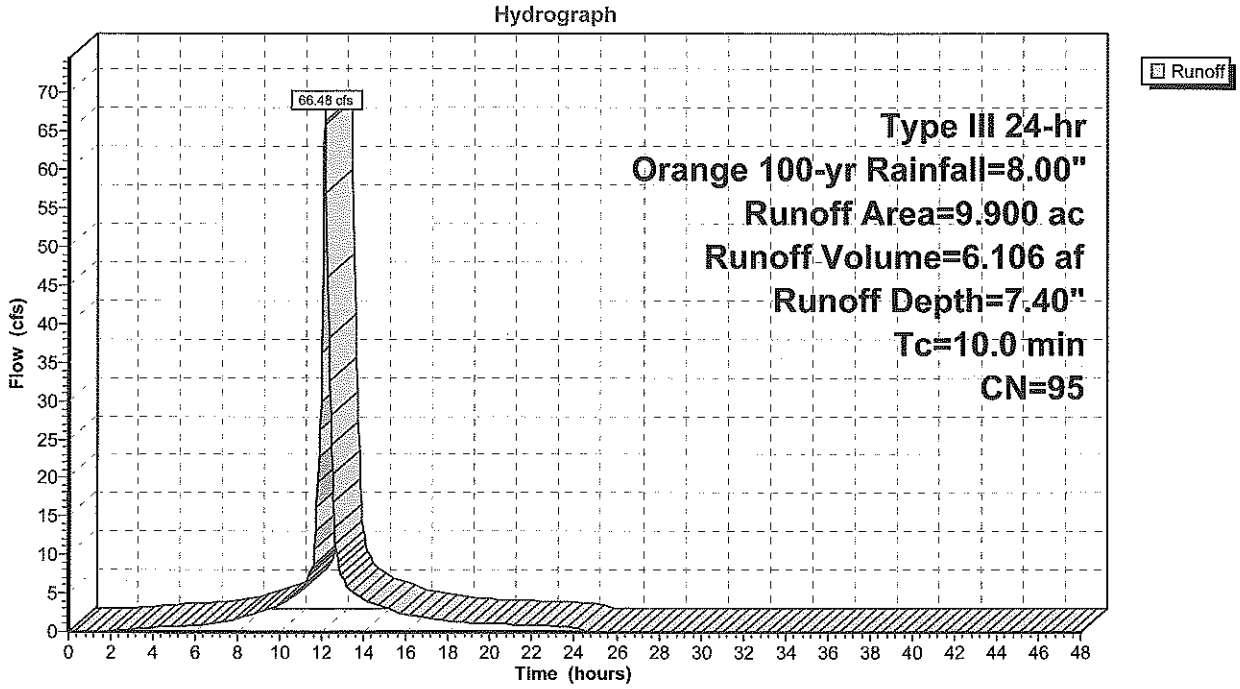
Runoff = 66.48 cfs @ 12.14 hrs, Volume= 6.106 af, Depth= 7.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 100-yr Rainfall=8.00"

Area (ac)	CN	Description
9.900	95	Urban commercial, 85% imp, HSG D
1.485		15.00% Pervious Area
8.415		85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 3S: Retail Site



Summary for Subcatchment 5S: Existing Retail Site

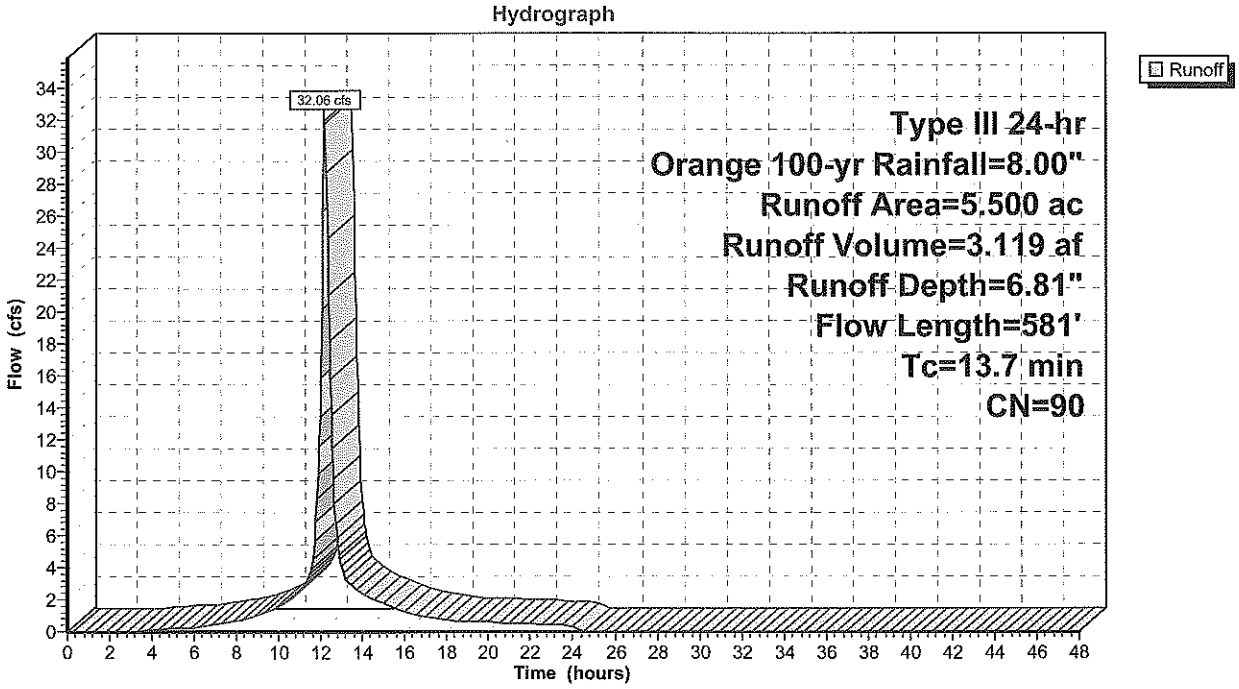
Runoff = 32.06 cfs @ 12.18 hrs, Volume= 3.119 af, Depth= 6.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 100-yr Rainfall=8.00"

Area (ac)	CN	Description
2.300	98	Paved parking, HSG D
3.200	84	Pasture/grassland/range, Fair, HSG D
5.500	90	Weighted Average
3.200		58.18% Pervious Area
2.300		41.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.1000	0.19		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.45"
5.1	481	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.7	581	Total			

Subcatchment 5S: Existing Retail Site



Summary for Subcatchment 6S: RV/Bus Site

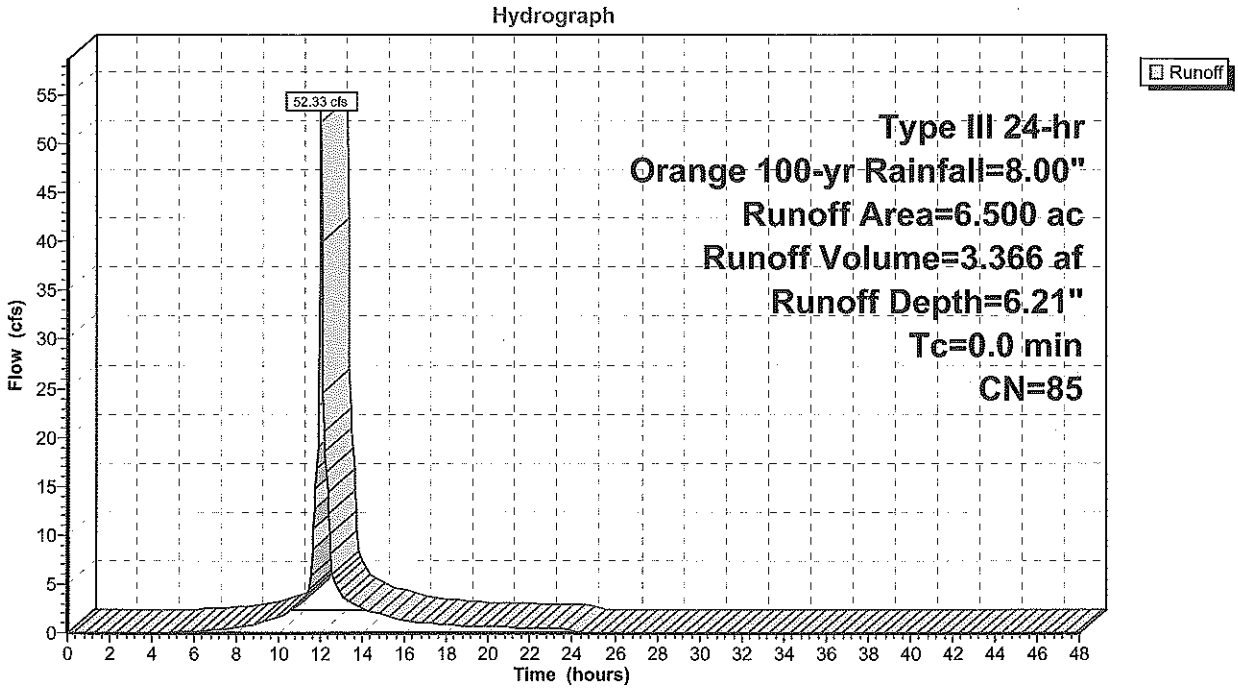
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 52.33 cfs @ 12.00 hrs, Volume= 3.366 af, Depth= 6.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 100-yr Rainfall=8.00"

Area (ac)	CN	Description
4.700	80	Pasture/grassland/range, Good, HSG D
1.800	98	Paved parking, HSG D
6.500	85	Weighted Average
4.700		72.31% Pervious Area
1.800		27.69% Impervious Area

Subcatchment 6S: RV/Bus Site



Summary for Subcatchment 7S: Existing RV/Bus Site

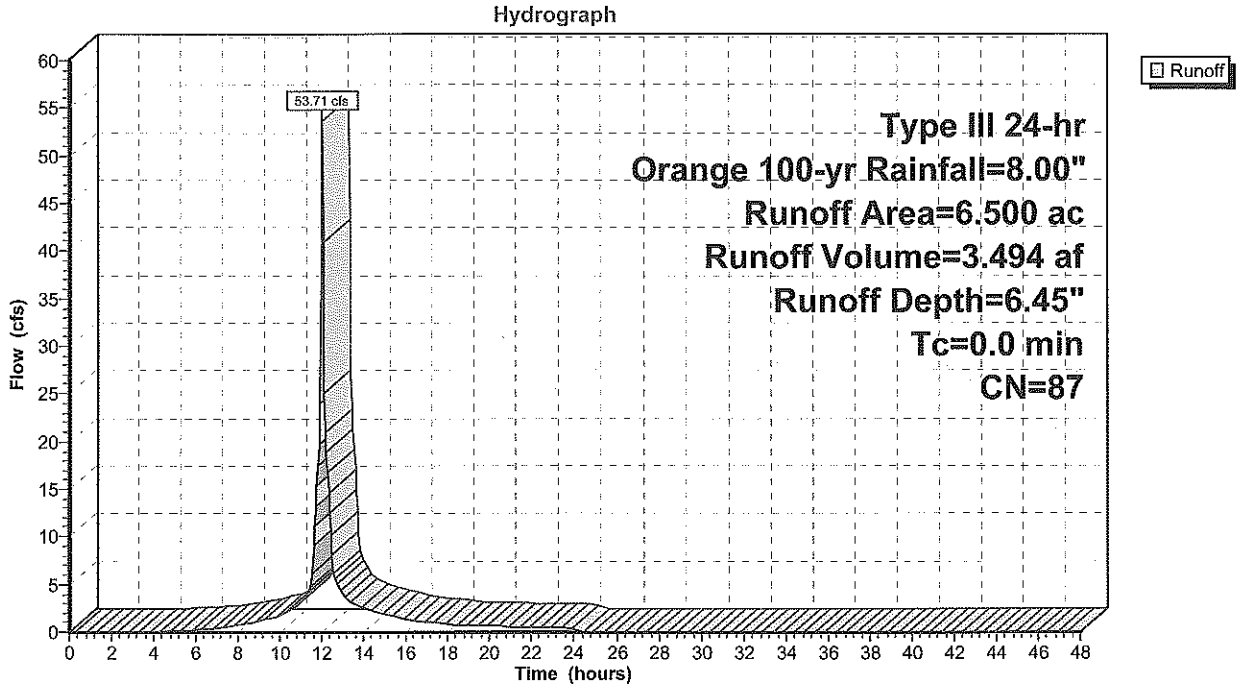
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 53.71 cfs @ 12.00 hrs, Volume= 3.494 af, Depth= 6.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 100-yr Rainfall=8.00"

Area (ac)	CN	Description
4.000	80	Pasture/grassland/range, Good, HSG D
2.500	98	Paved parking, HSG D
6.500	87	Weighted Average
4.000		61.54% Pervious Area
2.500		38.46% Impervious Area

Subcatchment 7S: Existing RV/Bus Site



Summary for Subcatchment 8S: Casino Site

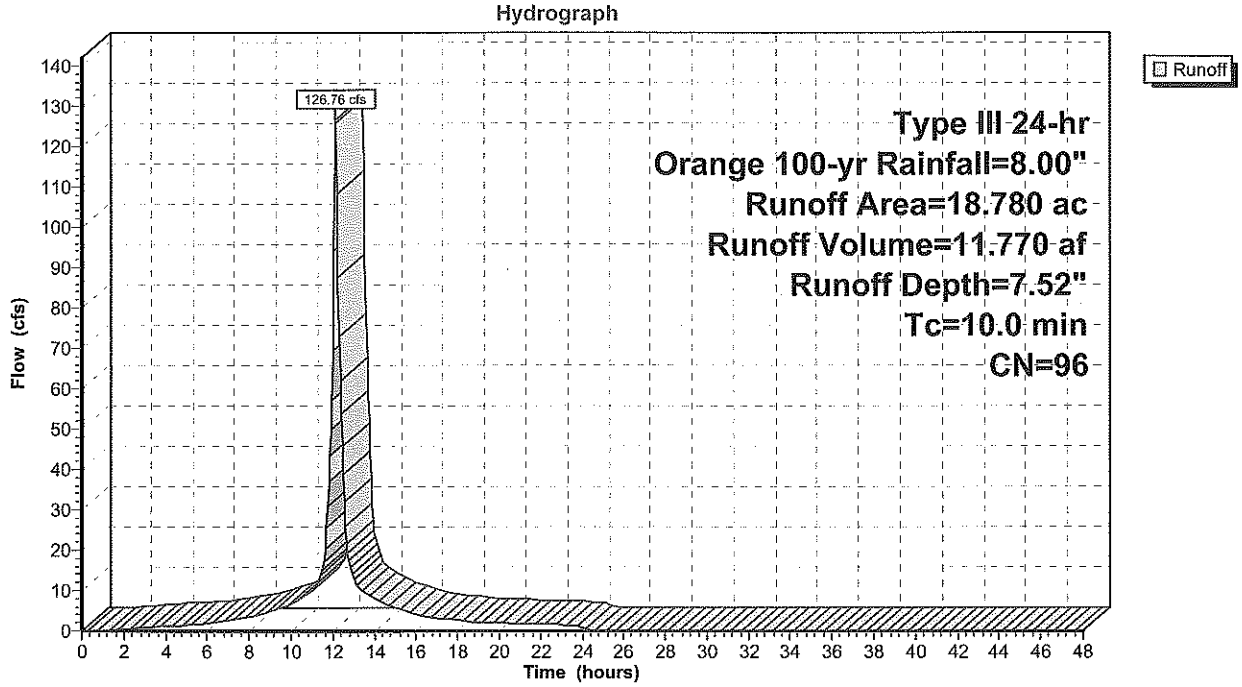
Runoff = 126.76 cfs @ 12.14 hrs, Volume= 11.770 af, Depth= 7.52"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 100-yr Rainfall=8.00"

Area (ac)	CN	Description
16.080	98	Paved parking, HSG D
2.700	84	Pasture/grassland/range, Fair, HSG D
18.780	96	Weighted Average
2.700		14.38% Pervious Area
16.080		85.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 8S: Casino Site



Summary for Subcatchment 9S: Existing Casino Site

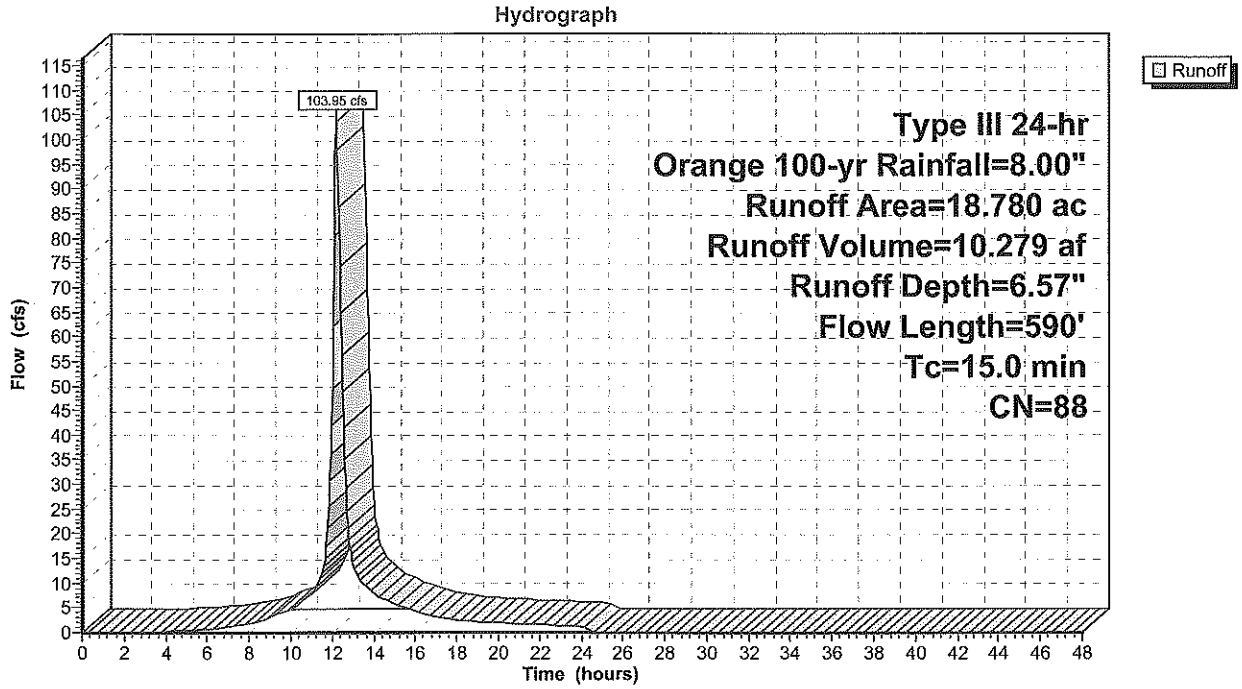
Runoff = 103.95 cfs @ 12.20 hrs, Volume= 10.279 af, Depth= 6.57"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 100-yr Rainfall=8.00"

Area (ac)	CN	Description
13.780	84	Pasture/grassland/range, Fair, HSG D
5.000	98	Paved parking, HSG D
18.780	88	Weighted Average
13.780		73.38% Pervious Area
5.000		26.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0767	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.45"
4.2	490	0.0760	1.93		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3					**Direct Entry,**
15.0	590	Total			

Subcatchment 9S: Existing Casino Site



Summary for Pond 6P: Parking Lot Detention

Inflow Area = 9.900 ac, 85.00% Impervious, Inflow Depth = 7.40" for Orange 100-yr event
Inflow = 66.48 cfs @ 12.14 hrs, Volume= 6.106 af
Outflow = 23.50 cfs @ 12.46 hrs, Volume= 6.085 af, Atten= 65%, Lag= 19.4 min
Primary = 23.50 cfs @ 12.46 hrs, Volume= 6.085 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 441.54' @ 12.46 hrs Surf.Area= 23,000 sf Storage= 81,437 cf

Plug-Flow detention time= 83.1 min calculated for 6.079 af (100% of inflow)
Center-of-Mass det. time= 82.0 min (842.8 - 760.8)

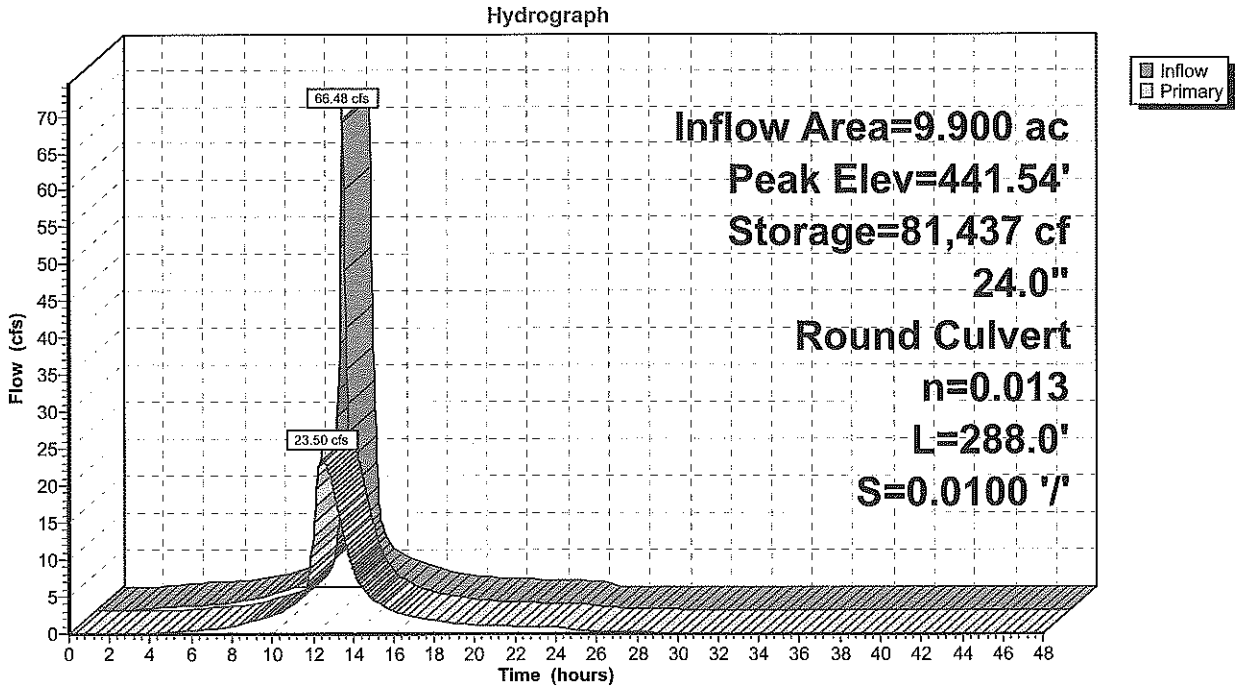
Volume	Invert	Avail.Storage	Storage Description
#1	438.00'	115,000 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
438.00	23,000	0	0
443.00	23,000	115,000	115,000

Device	Routing	Invert	Outlet Devices
#1	Primary	438.00'	**24.0" Round Culvert** L= 288.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 438.00' / 435.12' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=23.49 cfs @ 12.46 hrs HW=441.54' (Free Discharge)
└─**1=Culvert** (Barrel Controls 23.49 cfs @ 7.48 fps)

Pond 6P: Parking Lot Detention



Summary for Pond 9P: UG Detention Option 36"

Inflow Area = 18.780 ac, 85.62% Impervious, Inflow Depth = 7.52" for Orange 100-yr event
Inflow = 126.76 cfs @ 12.14 hrs, Volume= 11.770 af
Outflow = 62.82 cfs @ 12.35 hrs, Volume= 11.754 af, Atten= 50%, Lag= 12.8 min
Primary = 62.82 cfs @ 12.35 hrs, Volume= 11.754 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 419.91' @ 12.35 hrs Surf.Area= 23,000 sf Storage= 112,851 cf

Plug-Flow detention time= 51.6 min calculated for 11.742 af (100% of inflow)
Center-of-Mass det. time= 51.7 min (807.8 - 756.1)

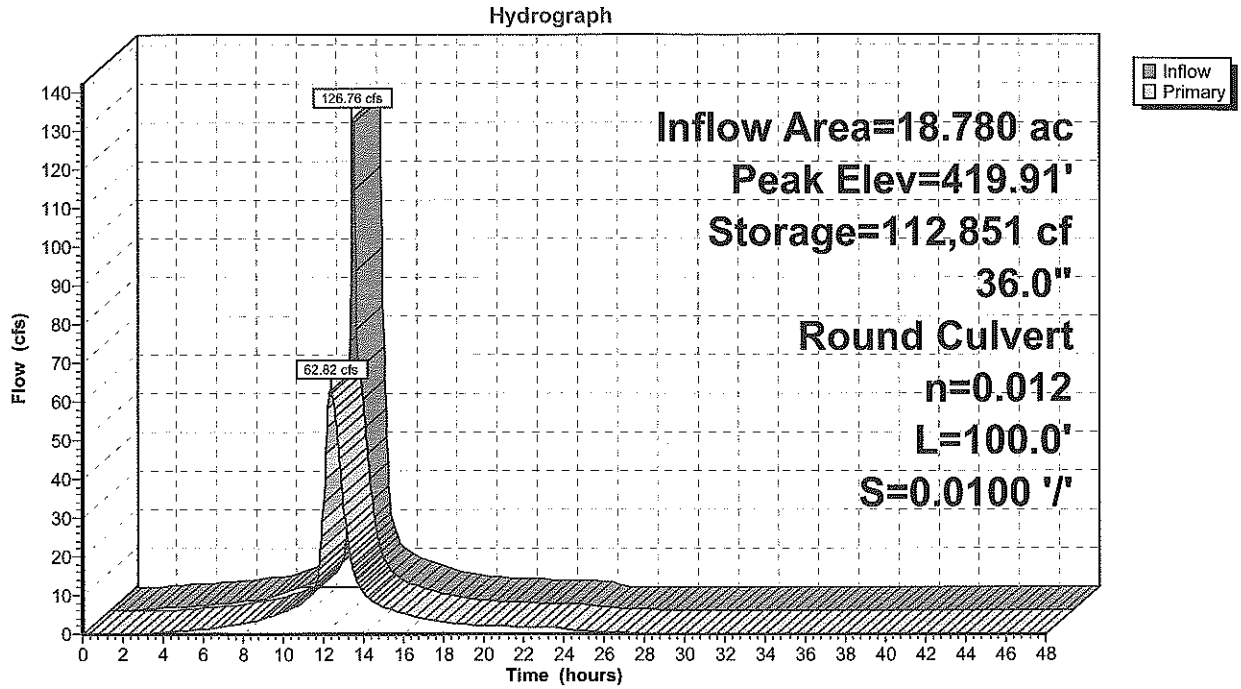
Volume	Invert	Avail.Storage	Storage Description
#1	415.00'	115,000 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
415.00	23,000	0	0
420.00	23,000	115,000	115,000

Device	Routing	Invert	Outlet Devices
#1	Primary	415.00'	**36.0" Round Culvert** L= 100.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 415.00' / 414.00' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 7.07 sf

Primary OutFlow Max=62.82 cfs @ 12.35 hrs HW=419.91' (Free Discharge)
└**1=Culvert** (Inlet Controls 62.82 cfs @ 8.89 fps)

Pond 9P: UG Detention Option 36"

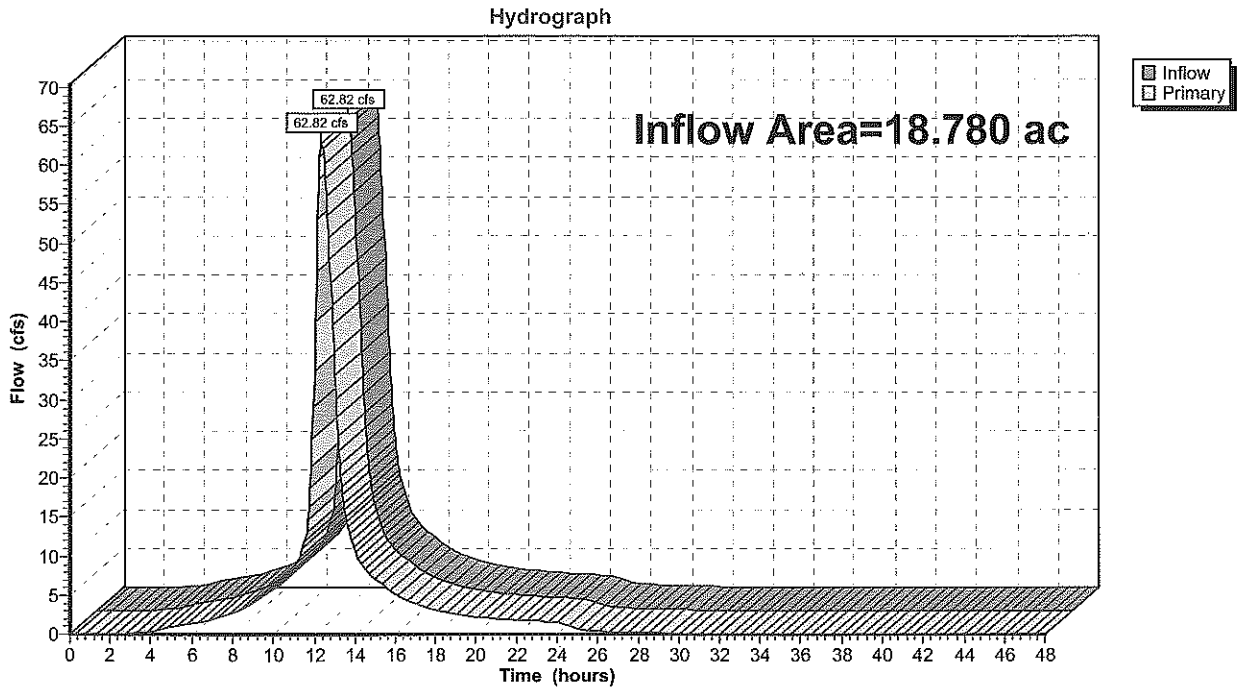


Summary for Link 1L: Bruenig St Sewer

Inflow Area = 18.780 ac, 85.62% Impervious, Inflow Depth > 7.51" for Orange 100-yr event
Inflow = 62.82 cfs @ 12.35 hrs, Volume= 11.754 af
Primary = 62.82 cfs @ 12.35 hrs, Volume= 11.754 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 1L: Bruenig St Sewer

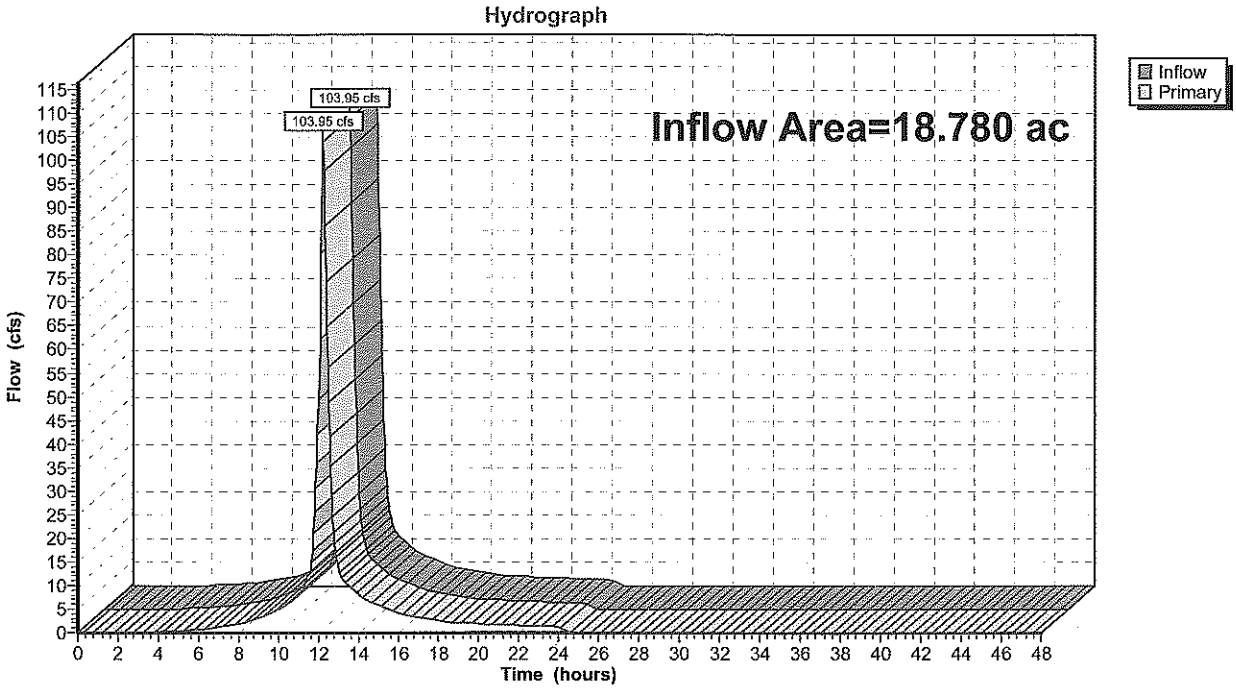


Summary for Link 4L: Bruenig St Sewer

Inflow Area = 18.780 ac, 26.62% Impervious, Inflow Depth = 6.57" for Orange 100-yr event
Inflow = 103.95 cfs @ 12.20 hrs, Volume= 10.279 af
Primary = 103.95 cfs @ 12.20 hrs, Volume= 10.279 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 4L: Bruenig St Sewer

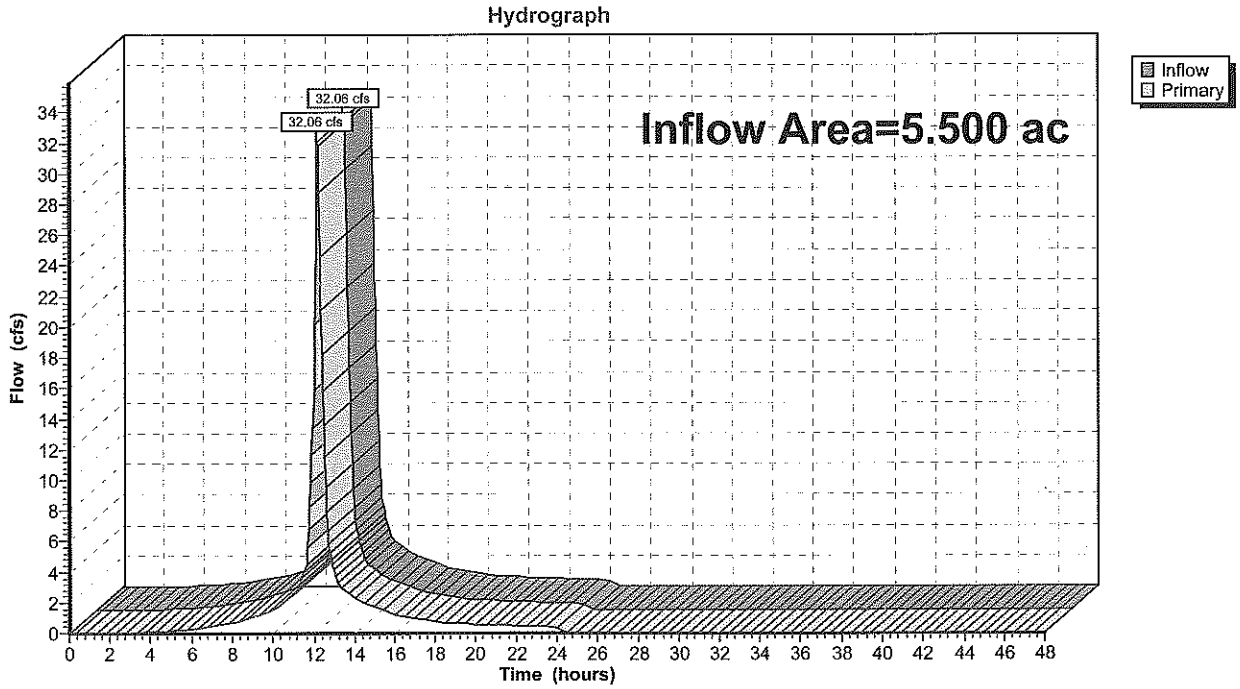


Summary for Link 5L: Reed St Sewer

Inflow Area = 5.500 ac, 41.82% Impervious, Inflow Depth = 6.81" for Orange 100-yr event
Inflow = 32.06 cfs @ 12.18 hrs, Volume= 3.119 af
Primary = 32.06 cfs @ 12.18 hrs, Volume= 3.119 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 5L: Reed St Sewer

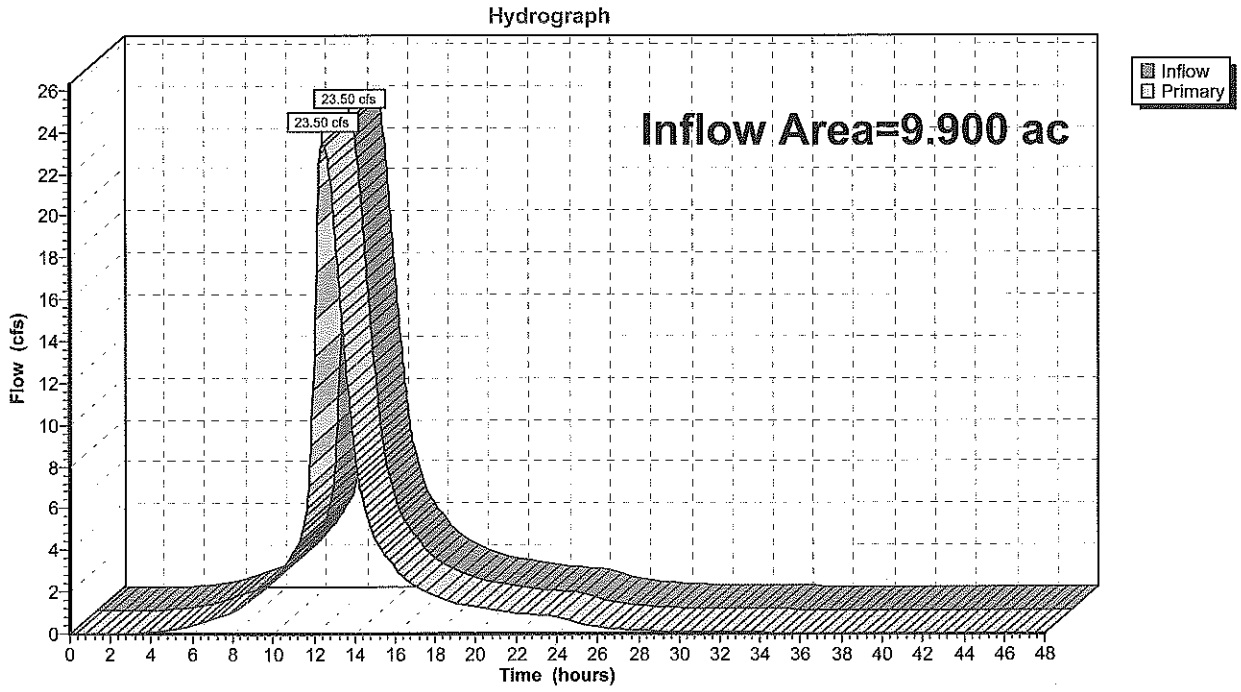


Summary for Link 7L: Reed St Sewer

Inflow Area = 9.900 ac, 85.00% Impervious, Inflow Depth > 7.38" for Orange 100-yr event
Inflow = 23.50 cfs @ 12.46 hrs, Volume= 6.085 af
Primary = 23.50 cfs @ 12.46 hrs, Volume= 6.085 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 7L: Reed St Sewer



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment3S: Retail Site Runoff Area=9.900 ac 85.00% Impervious Runoff Depth=5.91"
Tc=10.0 min CN=95 Runoff=53.65 cfs 4.874 af

Subcatchment5S: Existing Retail Site Runoff Area=5.500 ac 41.82% Impervious Runoff Depth=5.33"
Flow Length=581' Tc=13.7 min CN=90 Runoff=25.47 cfs 2.445 af

Subcatchment6S: RV/Bus Site Runoff Area=6.500 ac 27.69% Impervious Runoff Depth=4.78"
Tc=0.0 min CN=85 Runoff=40.76 cfs 2.587 af

Subcatchment7S: Existing RV/Bus Site Runoff Area=6.500 ac 38.46% Impervious Runoff Depth=5.00"
Tc=0.0 min CN=87 Runoff=42.20 cfs 2.707 af

Subcatchment8S: Casino Site Runoff Area=18.780 ac 85.62% Impervious Runoff Depth=6.03"
Tc=10.0 min CN=96 Runoff=102.53 cfs 9.430 af

Subcatchment9S: Existing Casino Site Runoff Area=18.780 ac 26.62% Impervious Runoff Depth=5.11"
Flow Length=590' Tc=15.0 min CN=88 Runoff=81.91 cfs 7.995 af

Pond 6P: Parking Lot Detention Peak Elev=440.86' Storage=65,682 cf Inflow=53.65 cfs 4.874 af
24.0" Round Culvert n=0.013 L=288.0' S=0.0100 '/' Outflow=20.61 cfs 4.854 af

Pond 9P: UG Detention Option 36" Peak Elev=418.98' Storage=91,490 cf Inflow=102.53 cfs 9.430 af
36.0" Round Culvert n=0.012 L=100.0' S=0.0100 '/' Outflow=53.57 cfs 9.414 af

Link 1L: Bruenig St Sewer Inflow=53.57 cfs 9.414 af
Primary=53.57 cfs 9.414 af

Link 4L: Bruenig St Sewer Inflow=81.91 cfs 7.995 af
Primary=81.91 cfs 7.995 af

Link 5L: Reed St Sewer Inflow=25.47 cfs 2.445 af
Primary=25.47 cfs 2.445 af

Link 7L: Reed St Sewer Inflow=20.61 cfs 4.854 af
Primary=20.61 cfs 4.854 af

Total Runoff Area = 65.960 ac Runoff Volume = 30.038 af Average Runoff Depth = 5.46"
45.28% Pervious = 29.865 ac 54.72% Impervious = 36.095 ac

Summary for Subcatchment 3S: Retail Site

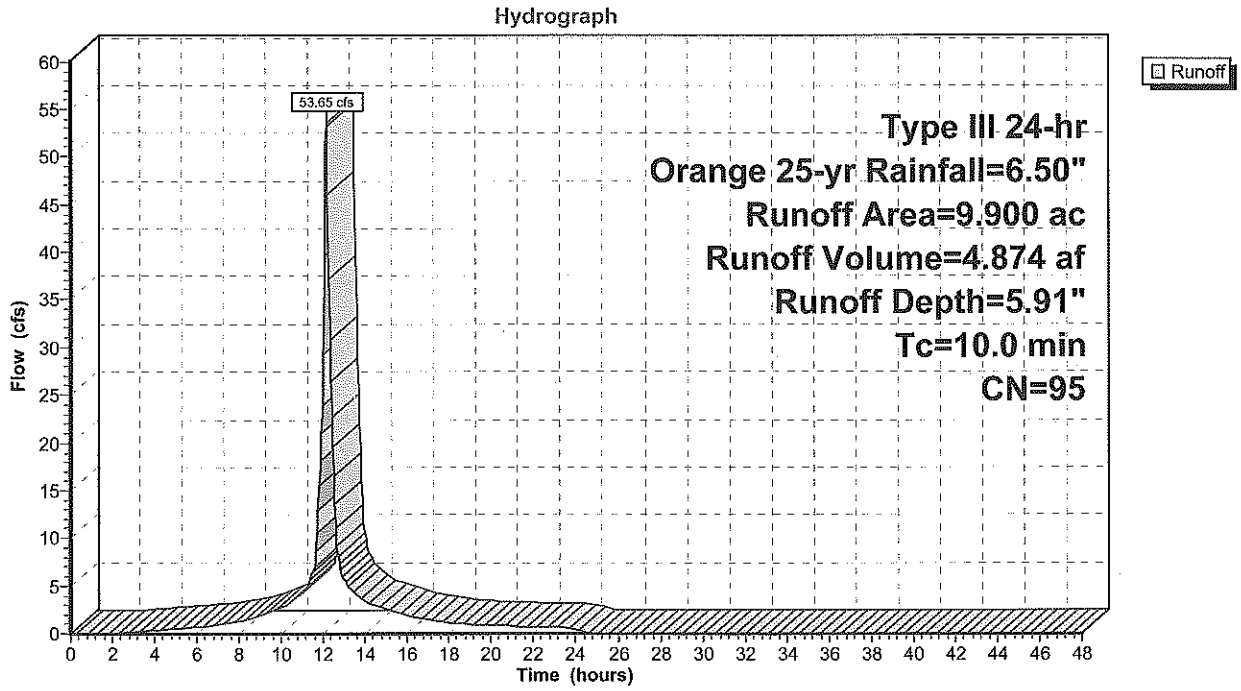
Runoff = 53.65 cfs @ 12.14 hrs, Volume= 4.874 af, Depth= 5.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 25-yr Rainfall=6.50"

Area (ac)	CN	Description
9.900	95	Urban commercial, 85% imp, HSG D
1.485		15.00% Pervious Area
8.415		85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 3S: Retail Site



Summary for Subcatchment 5S: Existing Retail Site

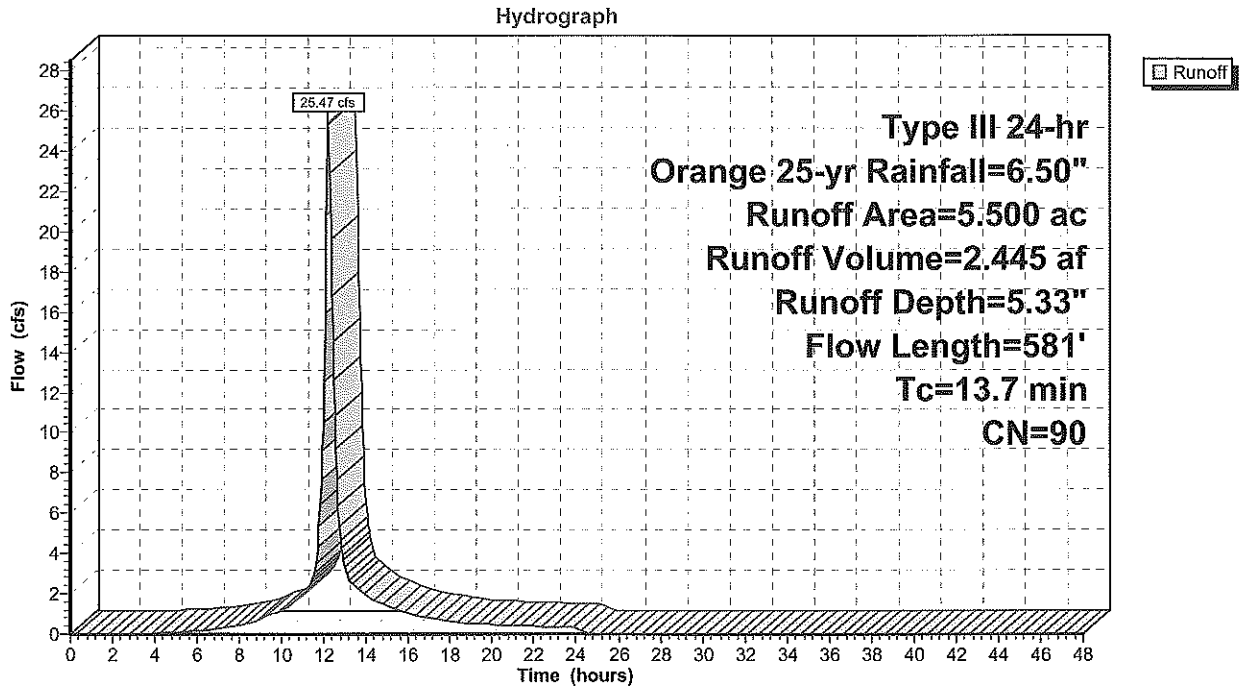
Runoff = 25.47 cfs @ 12.18 hrs, Volume= 2.445 af, Depth= 5.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 25-yr Rainfall=6.50"

Area (ac)	CN	Description
2.300	98	Paved parking, HSG D
3.200	84	Pasture/grassland/range, Fair, HSG D
5.500	90	Weighted Average
3.200		58.18% Pervious Area
2.300		41.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.1000	0.19		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.45"
5.1	481	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.7	581	Total			

Subcatchment 5S: Existing Retail Site



Summary for Subcatchment 6S: RV/Bus Site

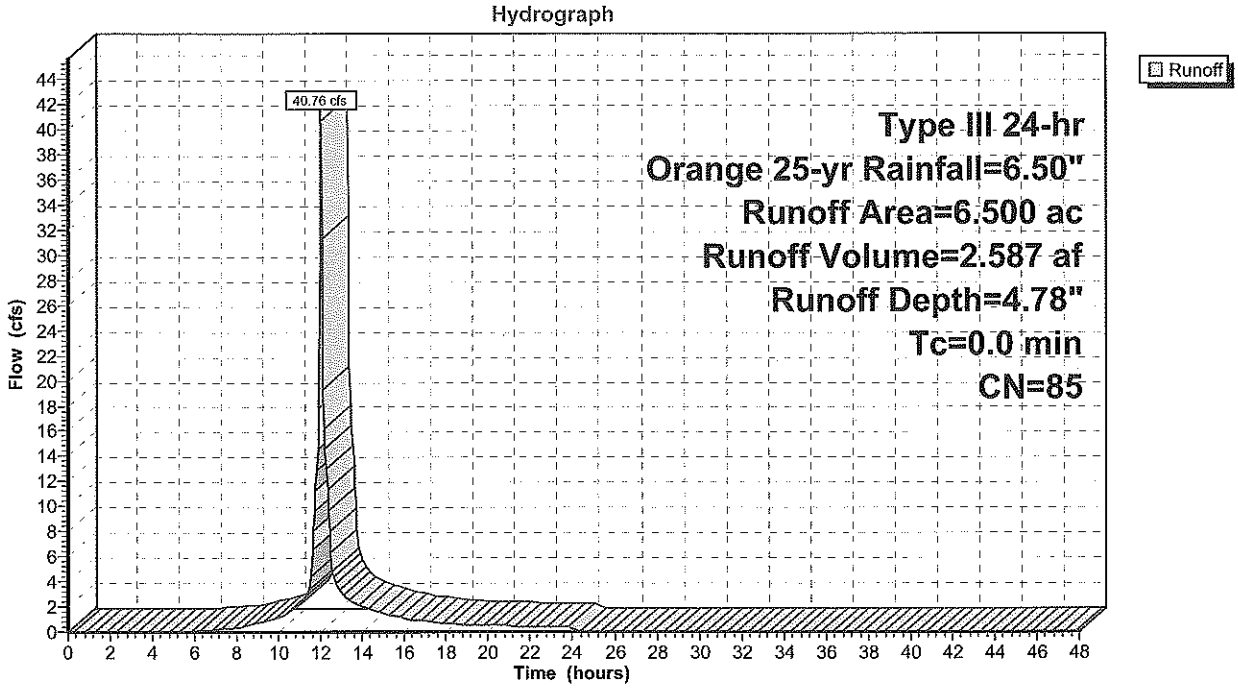
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 40.76 cfs @ 12.00 hrs, Volume= 2.587 af, Depth= 4.78"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 25-yr Rainfall=6.50"

Area (ac)	CN	Description
4.700	80	Pasture/grassland/range, Good, HSG D
1.800	98	Paved parking, HSG D
6.500	85	Weighted Average
4.700		72.31% Pervious Area
1.800		27.69% Impervious Area

Subcatchment 6S: RV/Bus Site



Summary for Subcatchment 7S: Existing RV/Bus Site

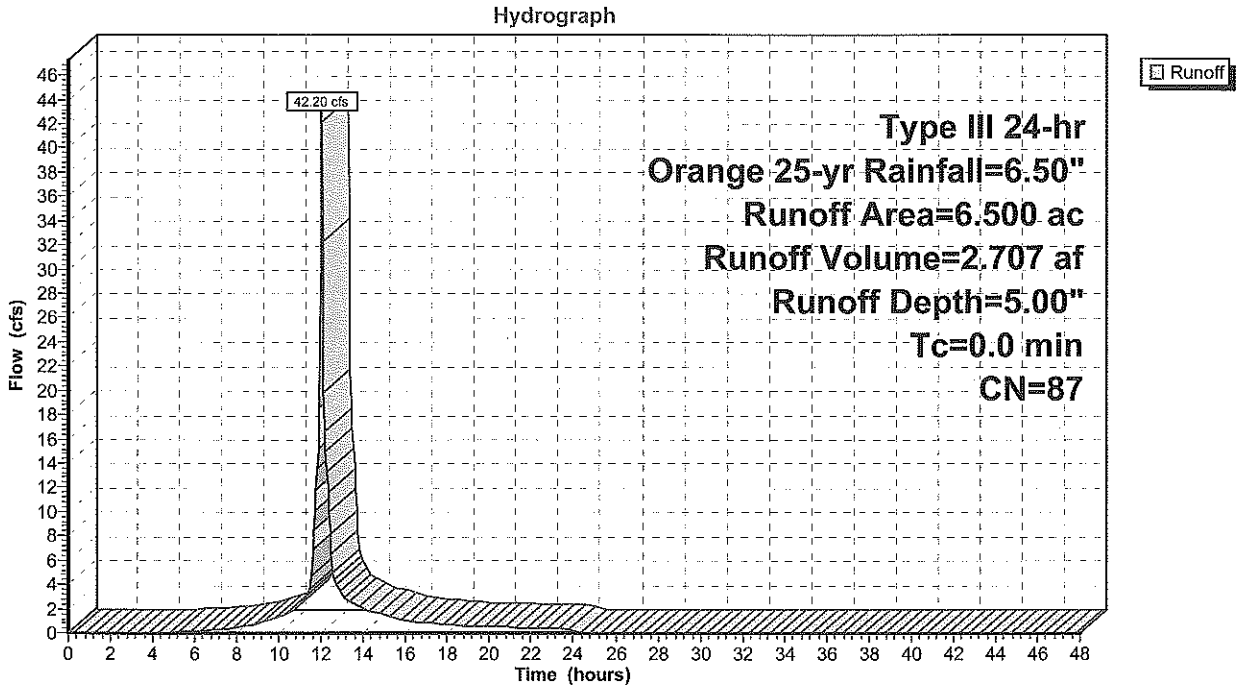
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 42.20 cfs @ 12.00 hrs, Volume= 2.707 af, Depth= 5.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 25-yr Rainfall=6.50"

Area (ac)	CN	Description
4.000	80	Pasture/grassland/range, Good, HSG D
2.500	98	Paved parking, HSG D
6.500	87	Weighted Average
4.000		61.54% Pervious Area
2.500		38.46% Impervious Area

Subcatchment 7S: Existing RV/Bus Site



Summary for Subcatchment 8S: Casino Site

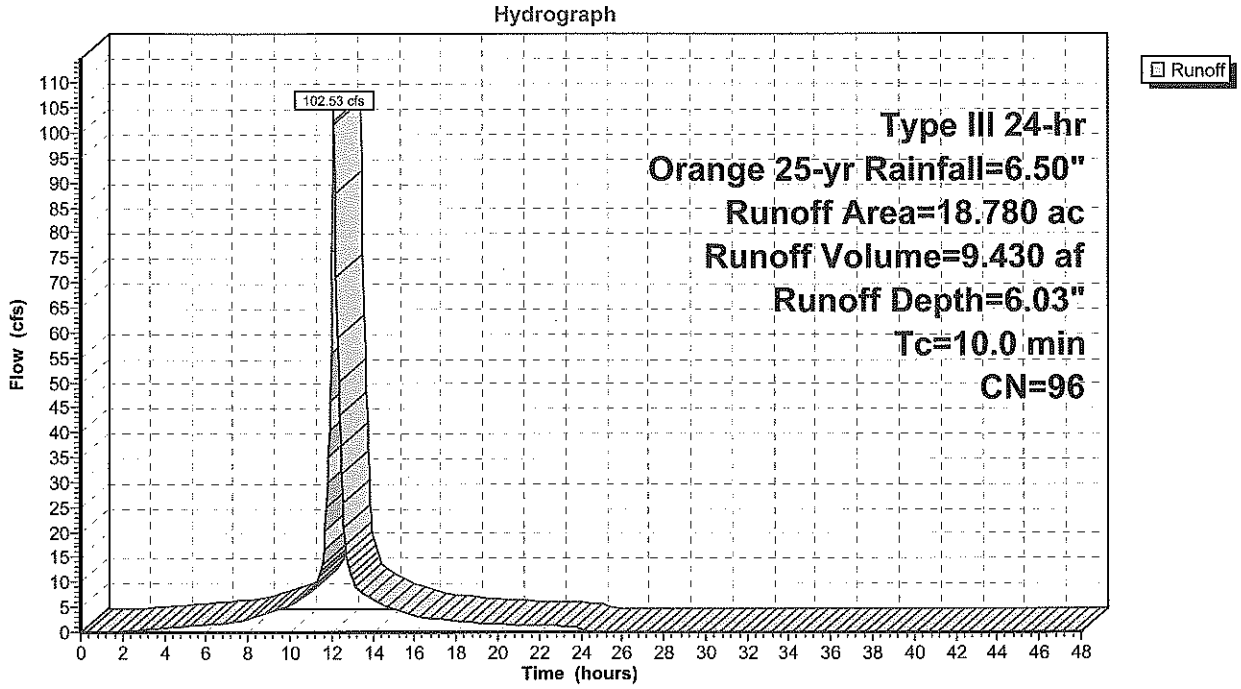
Runoff = 102.53 cfs @ 12.14 hrs, Volume= 9.430 af, Depth= 6.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 25-yr Rainfall=6.50"

Area (ac)	CN	Description
16.080	98	Paved parking, HSG D
2.700	84	Pasture/grassland/range, Fair, HSG D
18.780	96	Weighted Average
2.700		14.38% Pervious Area
16.080		85.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 8S: Casino Site



Summary for Subcatchment 9S: Existing Casino Site

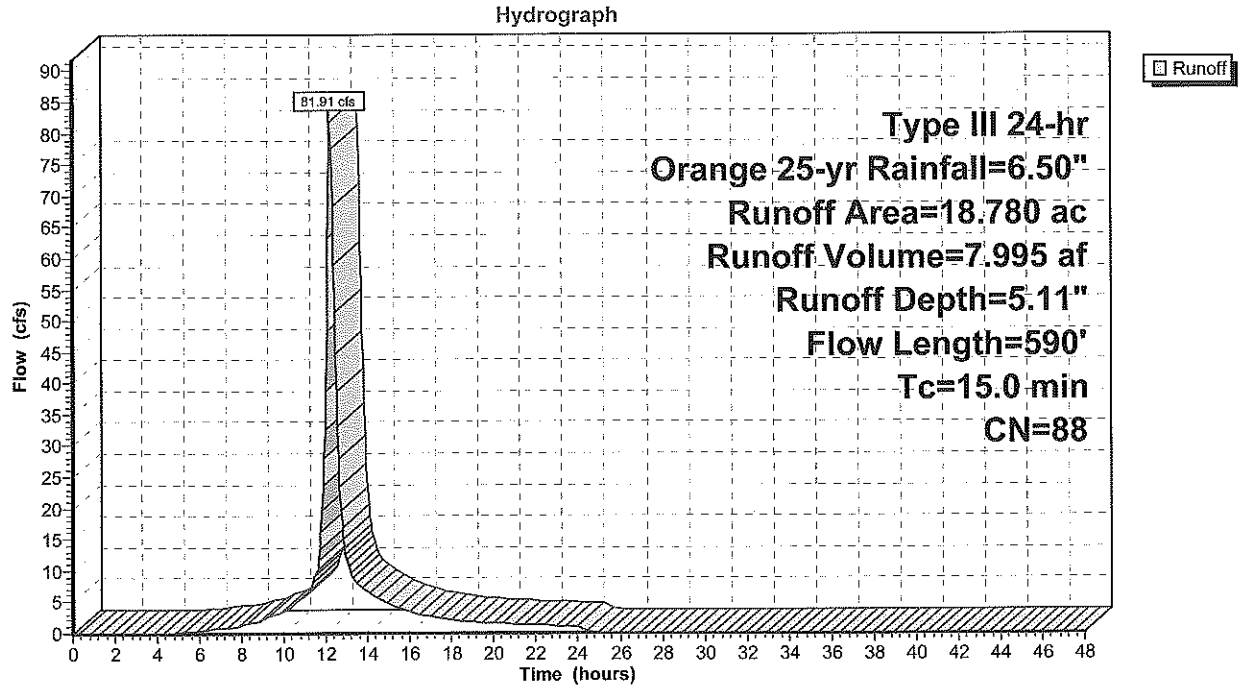
Runoff = 81.91 cfs @ 12.20 hrs, Volume= 7.995 af, Depth= 5.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr Orange 25-yr Rainfall=6.50"

Area (ac)	CN	Description
13.780	84	Pasture/grassland/range, Fair, HSG D
5.000	98	Paved parking, HSG D
18.780	88	Weighted Average
13.780		73.38% Pervious Area
5.000		26.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0767	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.45"
4.2	490	0.0760	1.93		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3					**Direct Entry,**
15.0	590	Total			

Subcatchment 9S: Existing Casino Site



Summary for Pond 6P: Parking Lot Detention

Inflow Area = 9.900 ac, 85.00% Impervious, Inflow Depth = 5.91" for Orange 25-yr event
Inflow = 53.65 cfs @ 12.14 hrs, Volume= 4.874 af
Outflow = 20.61 cfs @ 12.43 hrs, Volume= 4.854 af, Atten= 62%, Lag= 17.8 min
Primary = 20.61 cfs @ 12.43 hrs, Volume= 4.854 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 440.86' @ 12.43 hrs Surf.Area= 23,000 sf Storage= 65,682 cf

Plug-Flow detention time= 90.0 min calculated for 4.854 af (100% of inflow)
Center-of-Mass det. time= 87.1 min (852.6 - 765.4)

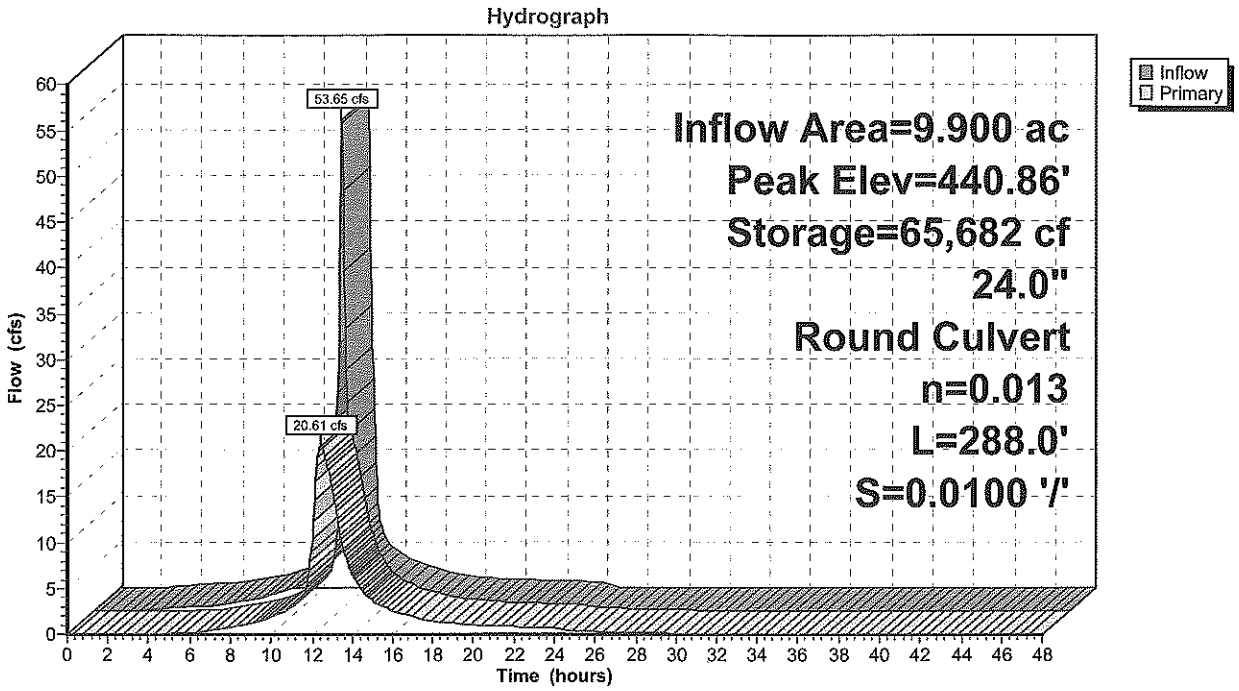
Volume	Invert	Avail.Storage	Storage Description
#1	438.00'	115,000 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
438.00	23,000	0	0
443.00	23,000	115,000	115,000

Device	Routing	Invert	Outlet Devices
#1	Primary	438.00'	**24.0" Round Culvert** L= 288.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 438.00' / 435.12' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=20.59 cfs @ 12.43 hrs HW=440.85' (Free Discharge)
└**1=Culvert** (Inlet Controls 20.59 cfs @ 6.55 fps)

Pond 6P: Parking Lot Detention



Summary for Pond 9P: UG Detention Option 36"

Inflow Area = 18.780 ac, 85.62% Impervious, Inflow Depth = 6.03" for Orange 25-yr event
Inflow = 102.53 cfs @ 12.14 hrs, Volume= 9.430 af
Outflow = 53.57 cfs @ 12.33 hrs, Volume= 9.414 af, Atten= 48%, Lag= 11.7 min
Primary = 53.57 cfs @ 12.33 hrs, Volume= 9.414 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 418.98' @ 12.33 hrs Surf.Area= 23,000 sf Storage= 91,490 cf

Plug-Flow detention time= 56.9 min calculated for 9.414 af (100% of inflow)
Center-of-Mass det. time= 55.7 min (815.9 - 760.2)

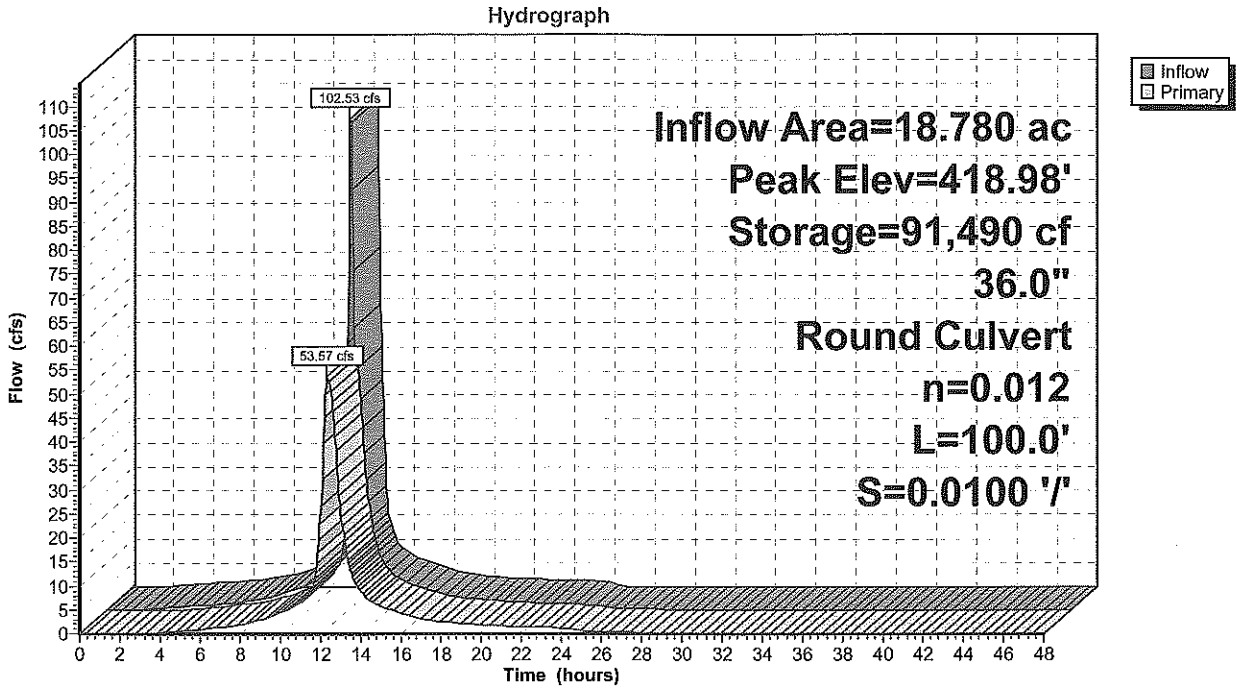
Volume	Invert	Avail.Storage	Storage Description
#1	415.00'	115,000 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
415.00	23,000	0	0
420.00	23,000	115,000	115,000

Device	Routing	Invert	Outlet Devices
#1	Primary	415.00'	**36.0" Round Culvert** L= 100.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 415.00' / 414.00' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 7.07 sf

Primary OutFlow Max=53.50 cfs @ 12.33 hrs HW=418.97' (Free Discharge)
└─**1=Culvert** (Inlet Controls 53.50 cfs @ 7.57 fps)

Pond 9P: UG Detention Option 36"

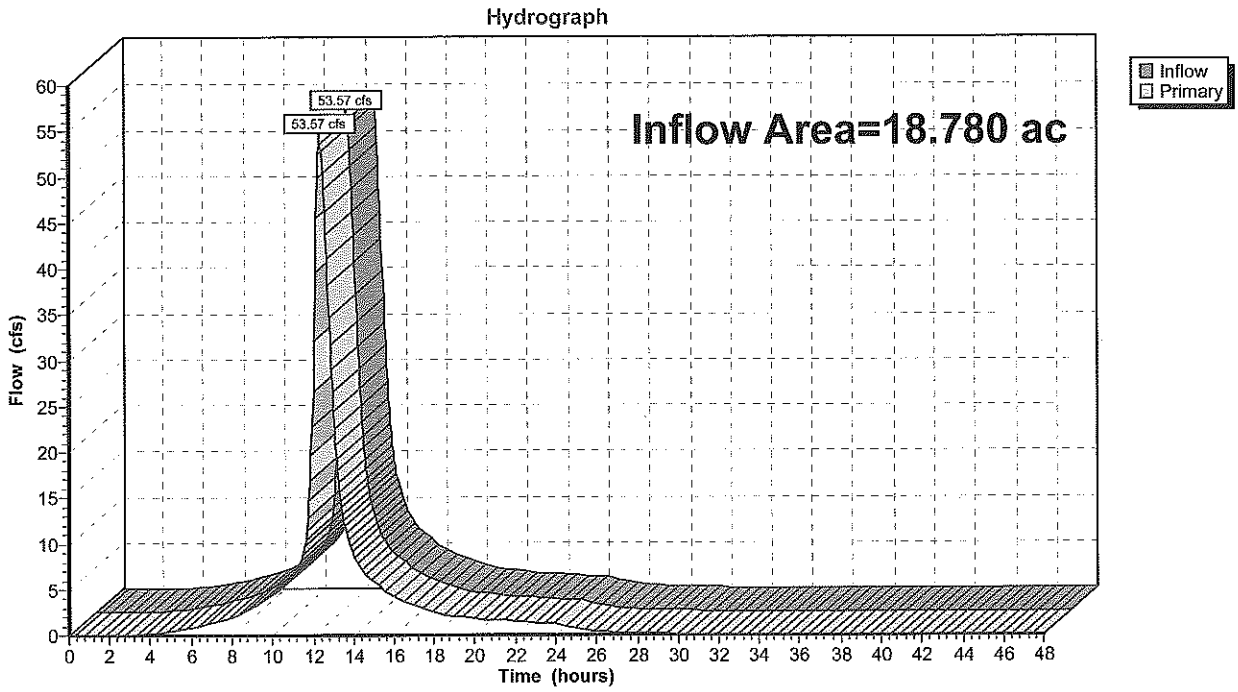


Summary for Link 1L: Bruenig St Sewer

Inflow Area = 18.780 ac, 85.62% Impervious, Inflow Depth > 6.02" for Orange 25-yr event
Inflow = 53.57 cfs @ 12.33 hrs, Volume= 9.414 af
Primary = 53.57 cfs @ 12.33 hrs, Volume= 9.414 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 1L: Bruenig St Sewer

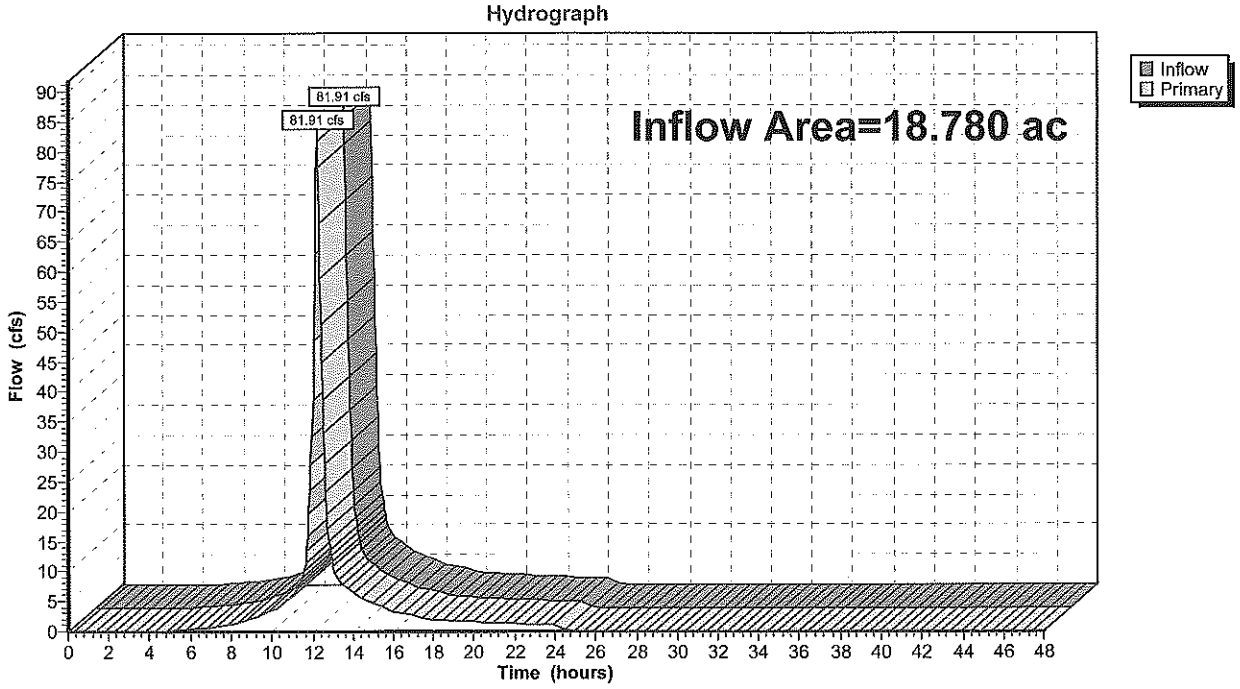


Summary for Link 4L: Bruenig St Sewer

Inflow Area = 18.780 ac, 26.62% Impervious, Inflow Depth = 5.11" for Orange 25-yr event
Inflow = 81.91 cfs @ 12.20 hrs, Volume= 7.995 af
Primary = 81.91 cfs @ 12.20 hrs, Volume= 7.995 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 4L: Bruenig St Sewer

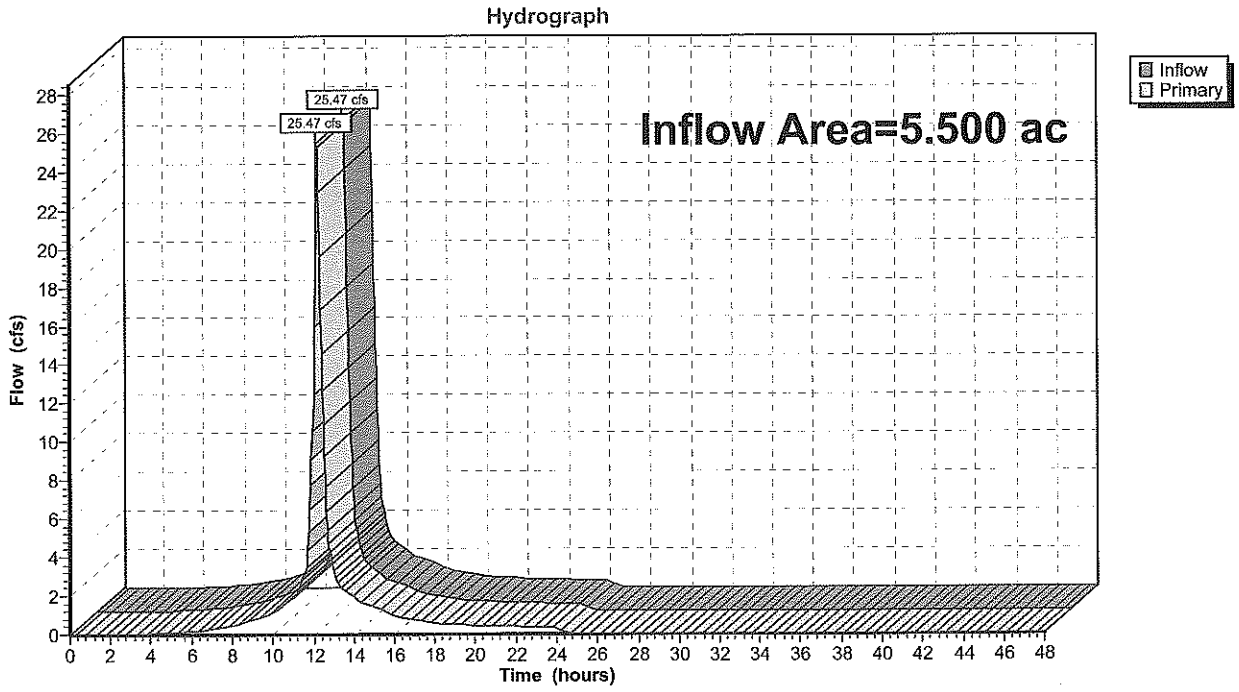


Summary for Link 5L: Reed St Sewer

Inflow Area = 5.500 ac, 41.82% Impervious, Inflow Depth = 5.33" for Orange 25-yr event
Inflow = 25.47 cfs @ 12.18 hrs, Volume= 2.445 af
Primary = 25.47 cfs @ 12.18 hrs, Volume= 2.445 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 5L: Reed St Sewer



Summary for Link 7L: Reed St Sewer

Inflow Area = 9.900 ac, 85.00% Impervious, Inflow Depth > 5.88" for Orange 25-yr event
Inflow = 20.61 cfs @ 12.43 hrs, Volume= 4.854 af
Primary = 20.61 cfs @ 12.43 hrs, Volume= 4.854 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 7L: Reed St Sewer

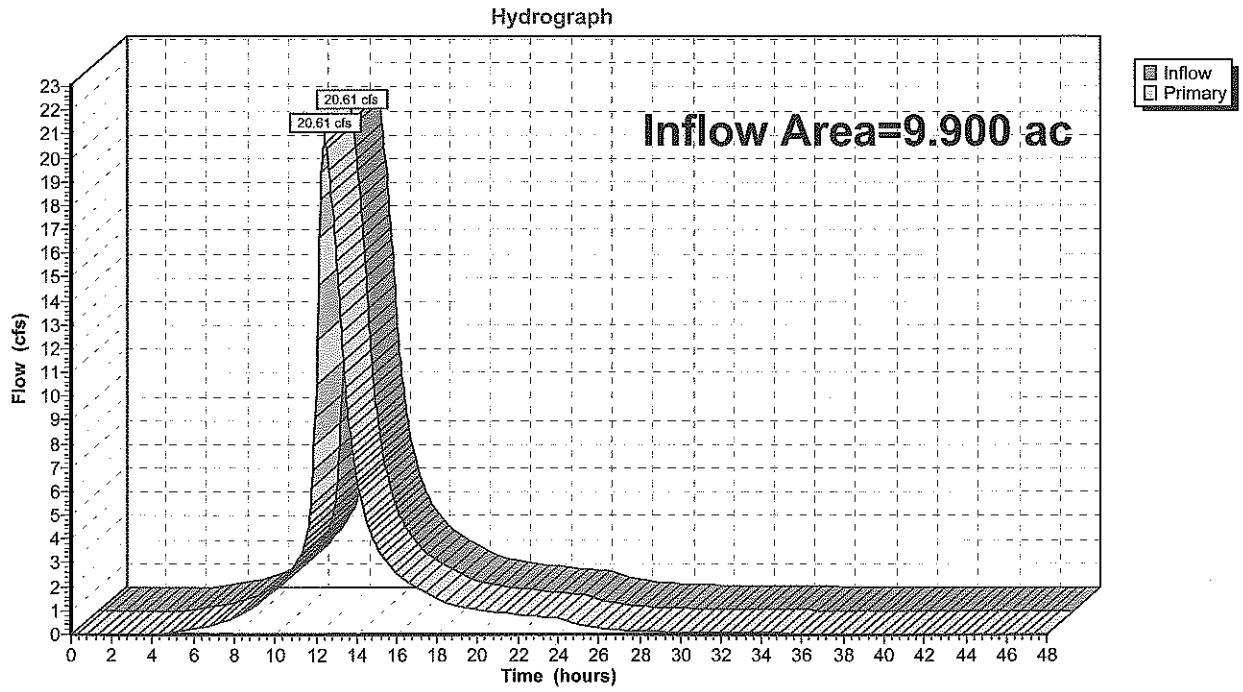


Exhibit VIII.C.17.b Description of Plans to Address Water and Electricity Use Restrictions during Peak Demand Periods

Water

The Town of New Windsor purchases water from New York City under a two-tiered rate structure based upon a per capita allocation with no credit for commercial consumption. Commercial water usage in excess of the per capita allocation is charged an excess rate. The project currently anticipates that the water usage will average 180,000 GPD. The Developer and the Town have agreed in the host agreement that in any month the Town water usage exceeds the regular rate limit established by the New York City Water Board, the Developer will pay for its water usage at the excess water rate up to the Developer's actual usage or the amount of the Town's excess usage, whichever is lower.

Exhibit VIII.C.17.c Description of the Electricity, Sewer, Water, and other Utility Improvements needed to adequately serve the Gaming Facility Site

Sanitary Sewer

It is proposed for the development to install new 8-inch PVC sanitary sewer, manholes, and appurtenances and connect directly to the Town's 30-inch diversion sewer along Breunig Road. Any active existing sewers that would be impacted by the proposed construction would be relocated with new facilities of similar size.

The Town of New Windsor sanitary sewer collection system has more than adequate capacity to transport the wastewater from the development site to the Town WWTP.

In terms of impacts to the Town's Wastewater Treatment Plant, it would appear from comparing the development's proposed wastewater loadings with the Town's WWTP current and design loadings that there is sufficient capacity to handle the proposed loadings. Discussions with Town officials regarding available treatment capacity at the Town WWTP identified there are a number of other proposed developments that have either been committed to or may be pending. This fact and the Town's concern with the age and reliability of the existing WWTP facilities have identified the need for capital investment for additional treatment capacity to be made at the WWTP. The driver of this need are the higher than normal BOD and SS loadings of the proposed development as opposed to the wastewater volumes. Regarding the wastewater volumes, it will be necessary for the Greenetrack Development to purchase Certificates of Sewer Allocation in the amount of 200,000 GPD from the Owners of those Certificates for that sewer allocation capacity at the Town WWTP.

Greenetrack will also participate in making capital improvements at the WWTP for additional treatment capacity. These possible improvements include the following: 16

The Town would propose to modify the influent solids handling system and add a new trickling filter and secondary clarifier to reduce the solids and organic loading down to domestic waste strengths.

The Town would also propose to install a second belt dewatering press and building for sludge dewatering to assist in handling the increased in sludge volume that would result from the addition of the Casino wastewater flows.

The improvements constructed for this project are likely to help reduce infiltration issues and the improvements at the WWTP will enable the Town to accept the "higher strength" wastewater flows from the project. Based on the previous EIS, work completed to date, proposed improvements, and this analysis, it is anticipated that the Project as designed (with proposed improvements) will have no significant impact on surface waters or the Town's wastewater system.

The estimated costs for the onsite sanitary sewer facilities is $467,000 and $5,500,000 for improvements at the Town WWTP. All of these costs will be the responsibility of the Grand Hudson Resort Development Team.

The estimated date of completion for these improvements is November 1, 2015.

VIII.C.17.c. Description of the Electricity, Sewer, Water, and other Utility Improvements needed to adequately serve the Gaming Facility Site

Water

The average daily water consumption of the proposed development is 180,000 GPD. It is proposed for the development to obtain this water from the Town of New Windsor via the existing Town water system infrastructure.

The amount of water usage is significantly less than was proposed for the NYIP project, which projected maximum daily demand for water at 18 333,296 GPD. Based on conversations with the Town Engineer, the Town's system has the capacity to meet the needs of the project.

A looped 12-inch water main is proposed to run through the proposed development for potable water service and fire protection. One of the connections to the water system is proposed to the existing 20 inch water main. Individual connected buildings within the proposed development will be provided with metering and backflow prevention facilities.

The estimated costs for the onsite water facilities is $881,000. All of these costs will be the responsibility of the Grand Hudson Resort Development Team.

The estimated date of completion for these improvements is November 1, 2015.

Exhibit VIII.C.17.d Description of the Roadway and Traffic Improvements Needed to Ensure Adequate Access to the Gaming Facility Site

The following road and traffic improvements would be constructed by the developer as part of the Grand Hudson Hotel and Casino project.

- At the International Boulevard and Main Site Entrance, removal of the existing raised median and construction of dedicated left turn lanes and a new three phase traffic signal consisting of 4 mast arm signal poles, digital ground mounted signal controller and pedestrian countdown pedestrian signal displays on separate poles. All signal equipment shall conform to NYSDOT Standards.
- Restriping of existing left turn lanes to accommodate required queue lengths for proposed secondary site access driveways.
- Accessible routes shall be designed to maintain longitudinal and cross slopes that comply with A.D.A. requirements. Sidewalk width shall be a minimum of 5 ft. ADA compliant ramps and detectible warning strips shall be placed at all curb cuts. All ADA sidewalks shall conform to NYSDOT Standards.
- Pavement resurfacing on Aviation Avenue and Sue Kelly Avenue. Pavement resurfacing shall consist of production profiling cold place milling to a depth of 2 inches and placement of surface course asphalt to a depth of 2 inches. All work shall conform to NYSDOT Standard Specifications for Materials and Construction.
- Pavement Markings shall conform to MUTCD standards as revised by NYSDOT.

The cost for construction of these improvements is $ 800,040. This work would be funded and completed by the developer. Construction of these improvements would coincide with casino construction and be completed prior to opening.

Agencies having jurisdiction over affected roads include the New York State Department of Transportation (NYSDOT) and the Town of New Windsor. Design and construction of improvements would be coordinated with these agencies.

Several intersections may require traffic signal timing adjustments and traffic signal warrant studies due to the anticipated change in traffic patterns. Traffic data collection should be conducted six months after the start of casino operation in order to assess traffic signal needs at these intersections. The locations for potential future traffic signals as follows:

- Route 747 at International Boulevard.
- International Boulevard at proposed site access driveways.
- Breunig Road at proposed site access driveway.

This work would be funded and completed by the developer. Design and construction of improvements would be coordinated with NYSDOT.

The Grand Hudson Hotel and Casino Developer recognizes the existing traffic operation issues on NY Route 207 between the Breunig Road and NY Route 300 intersections. The developer would participate in funding intersection improvements at four of these intersections identified by the Town of New Windsor to accommodate left turns and enhance the through movement of traffic in this corridor. These intersection improvements would consist of construction of dedicated turn lanes as well as installation of traffic signals as warranted. Intersection improvements would include the following:

Exhibit VIII.C.17.d Description of the Roadway and Traffic Improvements Needed to Ensure Adequate Access to the Gaming Facility Site

- NY Route 207 at NY Route 300- Extend the existing dedicated right turn lane on the westbound NY Route 300 approach.
- NY Route 207 at NY Route 300- The town of New Windsor is presently developing a project to extend the existing dedicated left turn lane on the eastbound NY Route 207 approach.
- The turn lane would be extended to the west past the intersection of Moores Hill Road. Greenetrack would participate in the construction of this improvement.
- NY Route 207 at Square Hill Road and Weather Oak Hull Road- Greenetrack will participate in evaluation of potential intersection improvements at these intersections. Improvements would include re-alignment of these offset intersections with a traffic signal.
- NY Route 207 at Breunig Road- Extend the existing dedicated right turn lane on the westbound NY Route 207 approach to the retail strip mall. Widen northbound Breunig Road to provide a second lane to meet the existing four lane section.

Agencies having jurisdiction over affected roads include the New York State Department of Transportation (NYSDOT) and the Town of New Windsor. Design and construction of improvements would be coordinated with these agencies.

Exhibit VIII.C.17.e Description of Plans for Management, Detention and Discharge of Storm Water on and from the Project Site

Stormwater management for the Project will comply with the requirements of the State Pollutant Discharge Elimination System ("SPDES") General Permit for Stormwater Discharges from Construction Activity (GP-0-10-001) and will employ best management practices. Since the project is located on previously developed property with existing buildings and pavements, the project can be classified as a Redevelopment as defined in Chapter 9 of the 2010 New York State Stormwater Management Design Manual and as confirmed by the Town of New Windsor. As indicated in the manual, projects classified as Redevelopment are not required to provide runoff reduction, (RRv). The stormwater design for the project will include proper on-site detention for water quantity controls and will employ proprietary practices along with standard practices and green infrastructure practices (where possible) for water quality treatment. There would be no increase in runoff to any Town or NYSDOT storm sewer facility.

On-site detention will be provided by use of underground storage systems located beneath the parking areas. The systems will provide sufficient storage and control to attenuate the post development 1-year, 10-year, and 100-year 24-hr peak discharge rates to predevelopment 1-year, 10-year, and 100-year 24-hr peak discharge rates. Storage will be provided in pipes, chambers and/or vaults. Storage volumes will vary, depending on whether rainwater harvesting systems or green roofs are used as part of the development.

Hydrodynamic units to be located beneath the parking area are proposed to treat the Water Quality Volume (WQv) requirement for the project. These units will be placed in-line before flows reach the underground detention systems which will reduce the potential for debris to enter the system. Other standard and/or green infrastructure practices may be added/substituted for water quality treatment as the site design progresses. In any case, the minimum WQv requirement will be met.

Stormwater (storm sewers) systems will be designed to convey the 25-yr storm flows.

The Project will result in an increase of impervious surfaces, including buildings, roadways and paved areas. The Project will comply with New York State Stormwater Regulations designed to mitigate these impacts through preparation of a Stormwater Pollution Prevention Plan ("SWPPP") for construction and post-construction activities.

The estimated costs for the proposed stormwater improvements is $2,862,000. All of these costs will be the responsibility of the Grand Hudson Resort Development Team.

The estimated date of completion for these improvements is May 25, 2015.

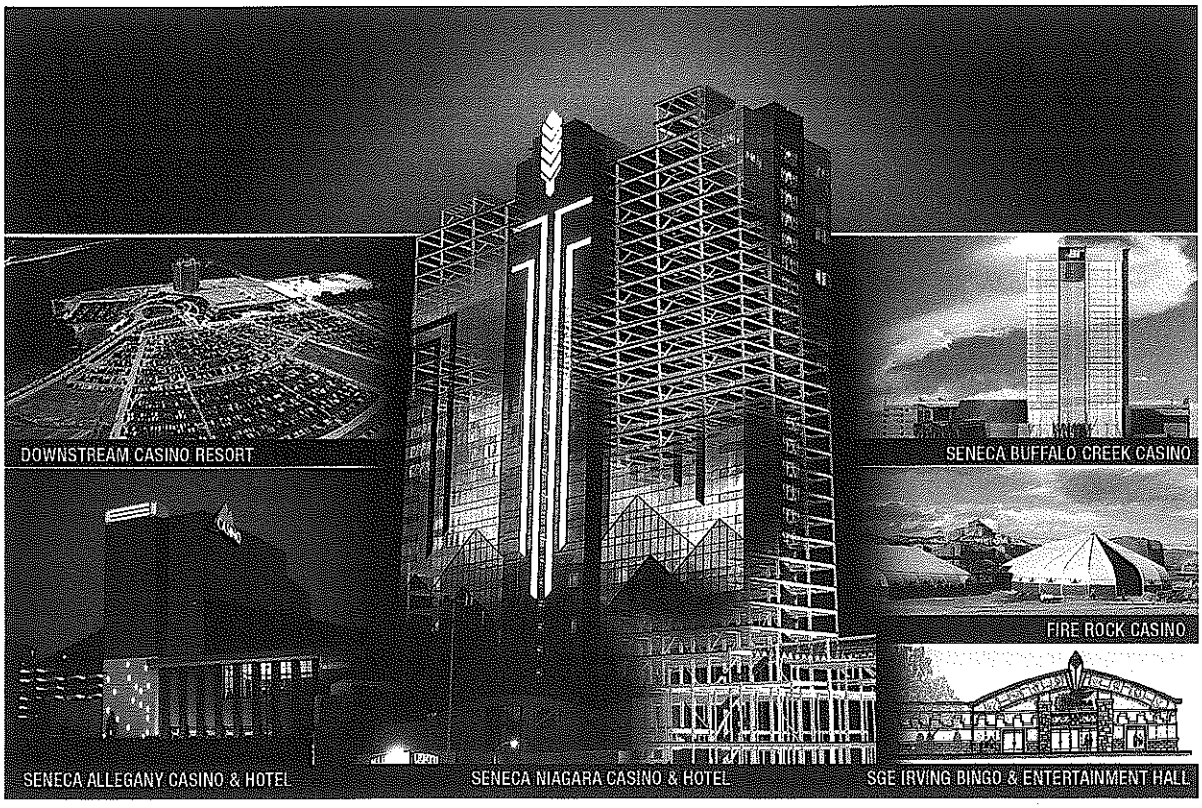
A Notice of Intent (NOI) will be submitted to the New York State Department of Environmental Conservation (NYDEC) for review of the stormwater calculations. Once approval is granted, the NYDEC will issue a letter to the owner and include a permit number. Plans for the stormwater conveyance, detention, and treatment improvements along with a copy of the SWPPP will be submitted to the Town of New Windsor for review and approval as part of the site plan application process. A copy of the NOI and permit number from the NYDEC will be provided to the Town. No conditions by the Town are estimated as the stormwater design will meet all State and Local standards. Approval of the stormwater improvements by the local government will be parallel with site plan approval process and is anticipated to occur by December 2014.

With over 200 people, Wendel is a professional design firm that specializes in providing structural engineering, permitting, civil engineering and landscape architectural services to the Gaming Industry. Since 2003, we have been involved with over $2.0 billion worth of projects across the United States. The majority of these projects have had a high-rise structure component, a particular expertise of our firm.

As structural and civil engineers, we are usually first out of the gate and help to set the pace for the entire project. The faster a facility is completed, the sooner our clients begin to generate revenue. Once underway, we help lead, organize, focus, and drive projects so they stay on track. We take great pride in providing collaborative, budget-minded, and creative solutions within the context of fast-track and phased project delivery with extremely ambitious schedule constraints. Our value to each project has been our team's ability to keep pace with tight schedules, facilitate the work of others, balance efficiency and constructability, and lead by example – while providing the highest levels of service, responsiveness, collaboration, technical expertise, and quality of our design project.

Some of our recent projects include the $30 million Saratoga Casino and Raceway Hotel Addition, $120 million Seneca Buffalo Creek Casino for the Seneca Nation of Indians, the $80 million Seneca Allegany Casino Hotel for the Seneca Nation of Indians, and the $280 million Empire Resorts Racetrack and Casino.

Wendel's corporate headquarters are in Buffalo, NY, with other regional offices in the NY Metro; Minneapolis, MN; Phoenix, AZ; Richmond, VA; and Washington, DC areas.



wendel

OVERVIEW

The key to any successful project is the experience and quality of the people who you work with. As a multidiscipline firm, Wendel seeks to integrate different types of expertise into the leadership of its projects.

LEADERSHIP TEAM

Mark D. Molnar, PE has more than 28 years of practical experience in the planning, design and management of multi-disciplined facilities projects of all sizes. He has managed a variety of projects throughout the United States, concentrating on gaming/hospitality, transportation and industrial/commercial facilities. Mark has significant expertise in fast-track/design-build projects, and managing complex projects that involve the collaboration and coordination of large consultant teams.

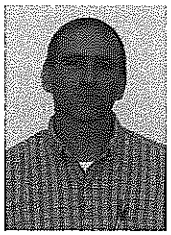
Craig A. Alexander, SE, PE, LEED AP has 17 years of experience working as a civil/structural engineer. He has provided his engineering expertise on a variety of gaming/hospitality, commercial and Industrial projects responsible for design development, structural analysis and design, preparation of construction document, specifications, and support throughout construction.

Orest P. Ciolko, PE has over 30 years experience of consulting and heavy construction expertise ranging from power plant mechanical systems to site design, water, wastewater, and storm water design for municipal, campus, private clients and hospitality/gaming projects. He brings innovative and appropriate solutions to project issues as a result of his experience and expertise.

STRUCTURAL ENGINEERS

James A. Boje, PE has experience in the planning, design and construction of hospitality/gaming, commercial, transportation, education, healthcare and municipal projects. Jim brings over 32 years of experience in structural analysis, design, detailing, computer modeling, construction administration and project management for projects of all shapes and sizes. During his career, he has utilized a host of building materials including structural steel, reinforced concrete, masonry, cold formed steel and precast concrete.

Peter D. Kukulka, SE, PE, LEED AP has 5 years experience working as a structural engineer practicing structural analysis, design, detailing, computer modeling and construction administration for projects of all shapes and sizes. He has provided his engineering expertise in the planning, design, and construction of hospitality, public transportation, commercial, education, and healthcare projects. During his career, he has utilized a host of building materials including structural steel, reinforced concrete, masonry, cold formed steel, wood and precast concrete.



William H. Merrill, III has over 20 years of design experience bringing comprehensive knowledge gained from having worked on various phases of design development. His experience encompasses civil, structural, and architectural design, and he has coordinated drafting between engineering and architectural disciplines. Mr. Merrill's field experience includes survey of site topography and construction observation. Bill has specific expertise in 3-D modeling using REVIT.

CIVIL ENGINEERS

Jeffrey D. Telecky has 36 years of professional experience in public and private engineering, planning, design, construction, and consultation. His primary focus is on wastewater and water projects and as client leader, project manager or as Quality Assurance / Quality Control, he has successfully implemented a wide range of projects to meet the needs of all levels of public and private clients including Tribal Governments, Towns, Villages, Counties, Special Districts, Federal, and Military.

Thomas A. Reynolds, PE, LEED AP over 15 years experience in the Civil Engineering and Land Surveying industries. He is proficient in Autodesk products, Land Desktop®, Civil Design®, and Civil 3D®. Mr. Reynolds also has a general understanding of WSPG Hydraulic Modeling Software for pipeline design.

LANDSCAPE ARCHITECTS

Dean W. Gowen, RLA, CLARB, ASLA has extensive professional experience as a Landscape Architect and Site Planner, including projects for historic landscape preservation, land use and community master planning, gaming/hospitality, parks and recreation design, urban design, campus planning, neighborhood revitalization, transportation-related planning and streetscape design, waterfront planning, tourism-related facilities, residential master planning, landscape enhancement and environmental planning.

David L. Kenyon, RLA, LEED AP BD+C, ASLA has 26 years of experience in landscape architecture and site development involving construction documentation for a wide range of projects including parks and recreation facilities, gaming/hospitality, streetscapes, bikeways, public transportation facilities, schools and sports facilities. As a project landscape architect his responsibilities include site design, layout, utilities, grading, drainage, planting design and specifications.

REGULATORY APPROVAL/SEQR

Andrew C. Reilly, PE, AICP has 30 years of professional experience in planning, environmental, and engineering projects for municipalities. As manager of Wendel's Environmental and Planning Group, he oversees SEQRA, zoning, and planning proposals. His focus is on government services and he has worked with local legislative boards, planning boards, town/village/city departments and committees, private developers and the public. He has completed over 40 Comprehensive Master and Strategic Plans and most importantly, led the implementation of these plans, including major zoning revisions, new laws and policies, and projects.

Ellen L. Parker, MUP, AICP, LEED Green Associate has over 25 years of professional urban planning experience. She has expertise in a broad range of planning areas, with a specialization in economic development and comprehensive planning issues. She has been responsible for projects addressing downtown revitalization, tourism, housing, community development and strategic planning. She has also assisted a number of communities with comprehensive planning services, and has authored municipal comprehensive plans, land use studies, zoning amendments and other municipal codes.

Seneca Niagara Casino and Hotel

PROJECT DESCRIPTION

Design of a 725,000 square foot, 26 story facility that includes casino gaming spaces, restaurants, retail and entertainment spaces, a large multi-purpose events hall, meeting rooms, a spa, salon and pool on the 3rd level, and a 600 room hotel tower.

Wendel has performed structural engineering, civil engineering and surveying as part of a design-build team lead by Seneca Construction Management Corporation and JCJ Architecture. The foundation system was complicated by the fact that an abandoned and filled-in, 100' wide by 40' deep former hydraulic canal traversed the site directly below the central elevator core of the 26 story tower. Outside the canal, the foundations are drilled piers socketed into rock for proper bearing and uplift resistance connected by a network of concrete grade beams. Inside the canal, tower columns are also supported on drilled piers to the rock base of the 40' deep canal. To transfer the tower's 2,500 kips of lateral shear force to the canal's adjacent shallow rock surface, Wendel utilized a 24" thick concrete diaphragm/mat-foundation that spans between the canal walls and is supported vertically by the tower column drilled piers. The tower lateral bracing system utilizes braced frames in the transverse direction and moment frames in the longitudinal direction. To control lateral drift in the longitudinal direction of the narrow hotel tower, the braced frames incorporate a unique blend of two story "super diagonals" and "hat-truss" type frames that were closely coordinated with room separation walls, room to room door openings and the main corridor at each hotel level. At the pre-construction conference, the successful steel fabricator/erector remarked that this was the "finest set of structural steel drawings they had seen in 30 years of doing projects of this type".

CLIENT
Seneca Nation of Indians

PROJECT LOCATION
Niagara Falls, NY

SERVICES PERFORMED
Structural Engineering
Civil Engineering
Survey

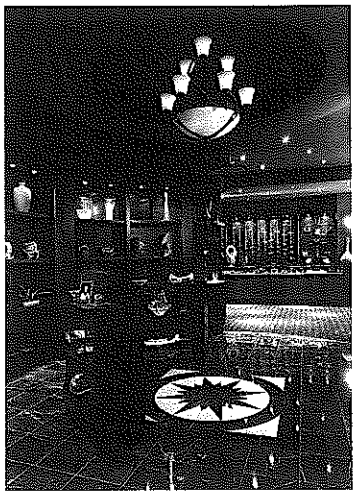
COMPLETION DATE
2006

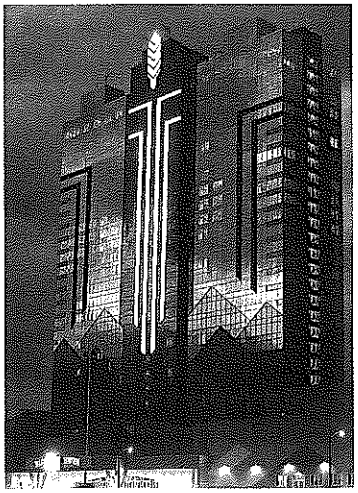
PROJECT COST
$240,000,000

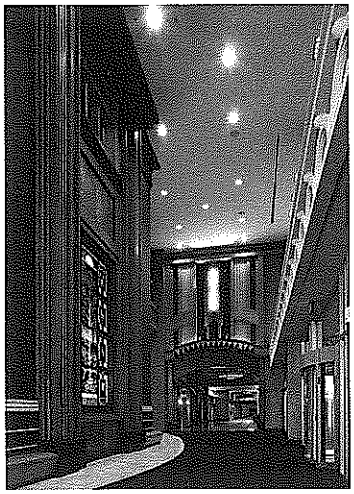
CLIENT CONTACT
JCJ Architecture
Mr. William Dow
(860) 247-9226

Seneca Gaming Corporation
Mr. Robert Chamberlain
(716) 501-2473

Awards & Recognition
2007 Gold Award for Engineering Excellence from the American Council of Engineering Companies of New York.







wendel

Seneca Niagara Casino and Hotel

Master Plan

PROJECT DESCRIPTION

The Seneca Gaming Corporation assembled a team of consultants to prepare a Master Plan for the 50-acre site surrounding the existing Seneca Niagara Casino and Spa Hotel. In conjunction with SOSH Architects, Wendel provided Master Planning services relative to structural, transportation and civil / site engineering.

To support the Master Planning effort, Wendel prepared an existing utility base map of the entire 50-acre site utilizing existing historical mapping and topographic survey. Wendel worked with the private and public utility companies to evaluate likely routes for utility relocations within and outside the 50-acre site and investigated capacity of the existing utilities for the proposed complex. Flow monitoring and modeling of existing sanitary sewer and combined sewer were conducted to evaluate capacity limitations.

Transportation engineering was performed to evaluate the capacity of the existing area road network and to evaluate alternatives to promote convenient traffic circulation.

Structural analysis was performed on conceptual building geometries to support the planning and decision-making process as part of the Master Plan, including the conceptual design of a proposed 60 story Hotel tower.

Preliminary cost estimates were also prepared for utility relocations, traffic system improvements, and structural components of the Master Plan.

CLIENT
Seneca Nation of Indians

PROJECT LOCATION
Niagara Falls, NY

SERVICES PERFORMED
Civil Engineering
Transportation Engineering
Structural Engineering
Survey

COMPLETION DATE
2007

EST. PROJECT COST
Over $1,000,000,000

CLIENT CONTACT
Seneca Gaming Corporation
Mr. Robert Chamberlain
(716) 501-2473

SOSH Architects
Mr. Nory Hazaveh
(212) 246-2770

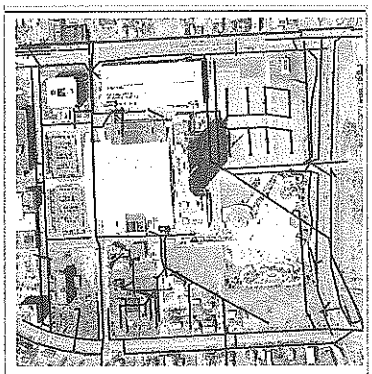


FIGURE 8
EXISTING ELECTRICAL

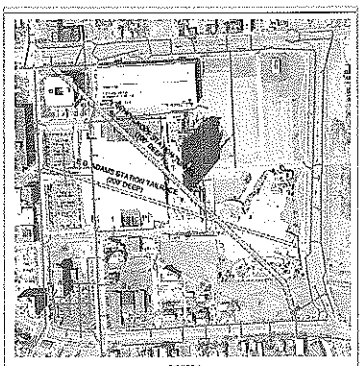


FIGURE 1
EXISTING STORM SEWER

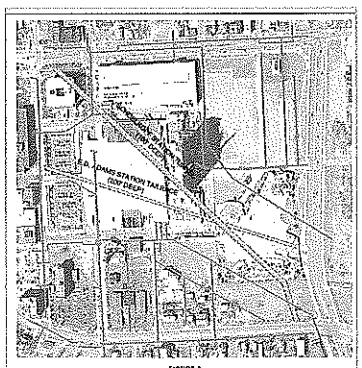


FIGURE 3
EXISTING SEWER

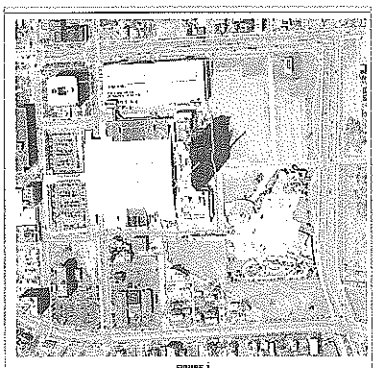


FIGURE 2
EXISTING GAS LINES

wendel

Seneca Niagara Casino and Hotel

Central Plant

PROJECT DESCRIPTION

The Seneca Niagara Central Plant was designed to provide electrical power and chilled water to the adjacent Seneca Niagara Hotel and Casino. It contains three 2- megawatt, gas-fired power generation engines, three dual fuel 500-horsepower hot water boilers, two 1400-ton centrifugal chillers, two 1400-ton cooling towers, and heat recovery heat exchangers. All required hot water, chilled water and condenser water pumps and all associated starters, and variable speed drives and controls. This plant is dedicated to serve the Seneca Niagara Casino and Hotel facility.

To meet the aggressive schedule required for the Casino and Hotel opening, the facility was delivered as a fast-track, design-build project. The structure had to fit on a small irregular shaped parcel. It contains three stories above ground, plus a full basement. The above grade structure is a steel braced frame. The equipment loads are extremely heavy.

CLIENT
Seneca Nation of Indians

PROJECT LOCATION
Niagara Falls, NY

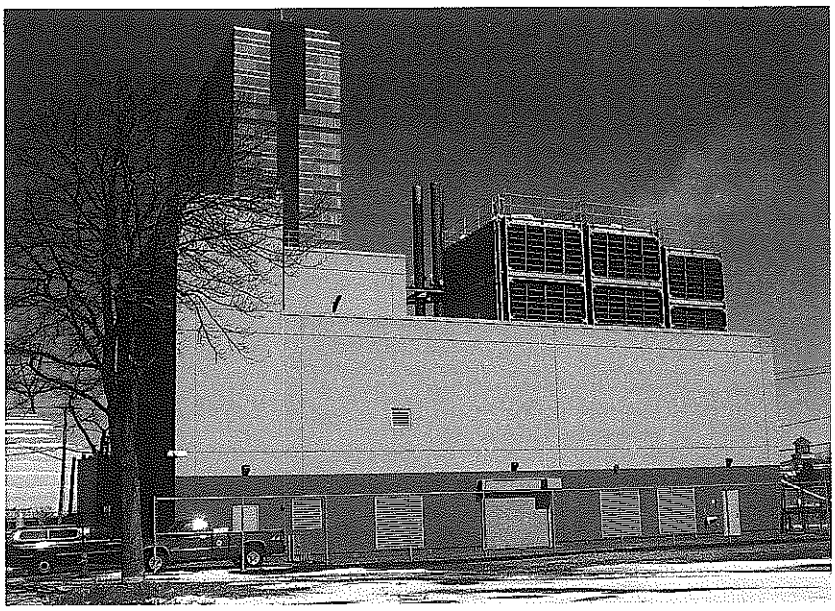
SERVICES PERFORMED
Structural Engineering
Civil Engineering
Survey

COMPLETION DATE
2006

PROJECT COST
$10 million

CLIENT CONTACT
William Dow
JCJ Architecture
(860) 247-9226

Mr. Robert Chamberlain
Seneca Gaming Corporation
(716) 501-2473



wendel

Seneca Buffalo Creek Casino

PROJECT DESCRIPTION

Wendel was retained for the Seneca Buffalo Creek Casino (SBCC) project, Buffalo's first world-class gaming and entertainment facility. This fast-track, phased project was led by the Seneca Gaming Corporation, SOSH Architects and Hnedak Bobo Group.

Wendel, on behalf of the Seneca Gaming Corporation, served as the prime consultant leading the following initiatives:

- Environmental Assessments (NEPA and SEQRA) for the acquisition of the proposed 9 acre parcel and former Fulton Street Right of Way
- Geotechnical and environmental site investigations
- Existing building and utility demolition, and environmental remediation design
- Boundary, topographic and utility surveys
- Traffic studies and utility impact reports
- Conceptual site and ROW improvement plan preparation and facilitation of the permitting and approval process with the City of Buffalo

Wendel was then retained by SOSH Architects for a $333 million casino and hotel. After the economic downturn in 2008, the extravagant project was put on hold, only to be abandoned for a more economical version.

The plans for SBCC were revisited and redesigned to reflect a smaller, $120 million budget, excluding a hotel. Wendel was retained by Hnedak Bobo Group as structural and civil engineer on the SBCC. Wendel had the idea to reuse the previously erected (and rusted) steel, which accounts for 95% of the final structure.

CLIENT
Seneca Nation of Indians

PROJECT LOCATION
Buffalo, NY

SERVICES PERFORMED
Project Management
Planning
Civil/Site Engineering
Structural Engineering
Traffic Engineering
Survey
SEQR
Environmental Engineering
Stormwater Engineering

COMPLETION DATE
2013

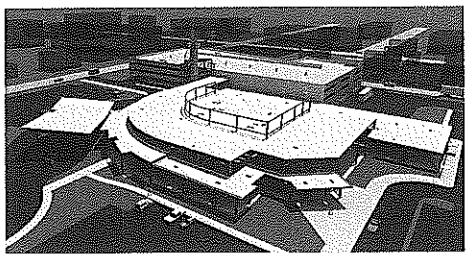
PROJECT COST
$120,000,000

CLIENT CONTACT
Seneca Gaming Corporation
Mr. Robert Chamberlain
Senior Vice President
(716) 501-2473

Seneca Construction Management Corporation
Mr. Todd Gates
(716) 945-3300

Hnedak Bobo Group
Mr. Paul Bell
(901) 525-2557

SOSH Architects
Mr. Nory Hazaveh
(212) 246-2770



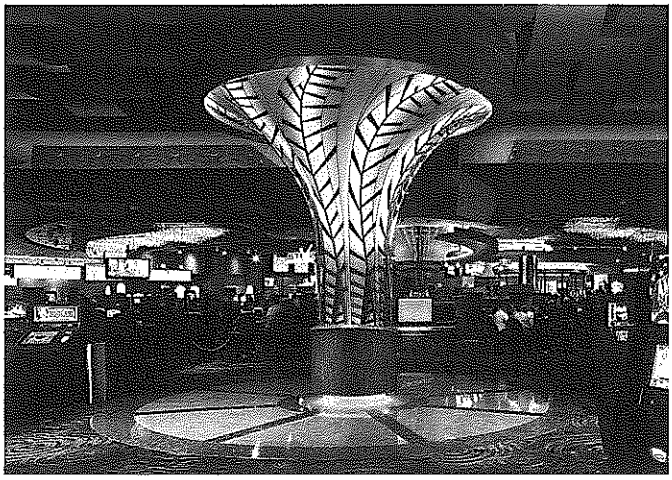
wendel

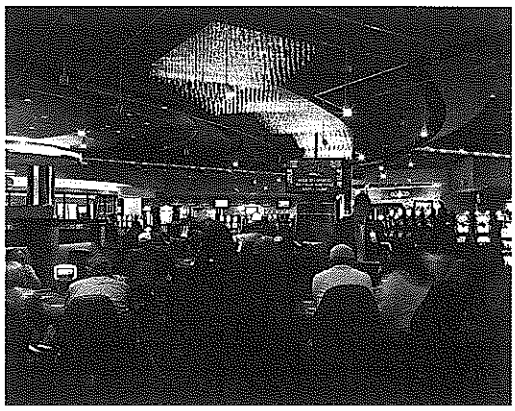
Seneca Buffalo Creek Casino

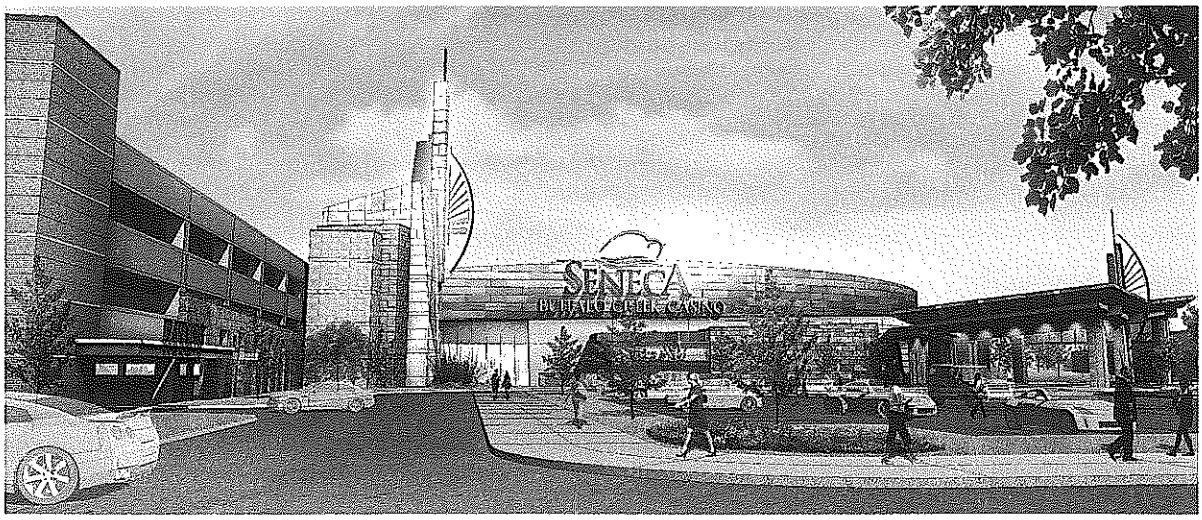
(continued)

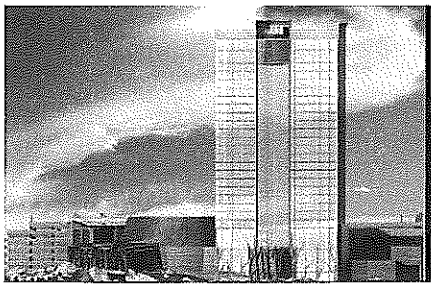
"In recognition of the significant investment that had been previously made at the site, one of the key design briefs was to maximize the use of that prior investment to the maximum "practical" extent possible. In addition to lining up the new casino on the same 60' by 60' grid as the original project and using piles and foundations already in place, Wendel was highly successful in adapting and designing the new casino such that 95% of the materials used in the new structure were sourced from the initial development project. We very much appreciate the efforts of Wendel in looking at our projects not simply as a design exercise but also from the perspective of good business practice."

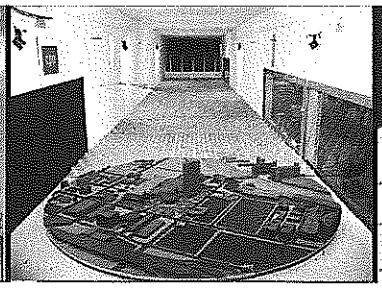
Rob Chamberlain
Senior VP Design & Construction
Seneca Gaming Corporation

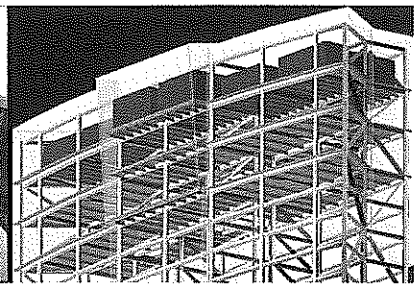












Left to right: The original design; wind tunnel testing of the casino and hotel; and slosh tanks in the hotel.

wendel

Downstream Casino Resort, Phase I

PROJECT DESCRIPTION

Wendel was retained to deliver structural engineering and civil engineering services for the Downstream Casino Resort, a design-build phased project led by JCJ Architecture and Manhattan Construction. The project, which also includes a high rise hotel and is situated on 140 acres of land near the borders of Oklahoma, Missouri, and Kansas.

The aggressive schedule required multiple fast-track bid packages to meet the 11-month construction schedule set by the client.

Phase I of the project includes:

- A one-story, 175,000 sq. ft. casino with 2,000 gaming positions, public spaces, restaurants, back-of-house areas, and administrative spaces.
- A 12-story, 240-room hotel including a ground level outdoor pool.
- At grade parking for 2,750 vehicles.
- Roadway, intersection, storm water management and utility service improvements.

Phase II of the project includes:

- A two-story, approximately 30,000 sq. ft. addition, housing a spa and salon on the first floor and a large, clear-span, multi-purpose room on the second floor.
- Site work and utility service modifications within the footprint of the new addition.

CLIENT
The Quapaw Tribe

PROJECT LOCATION
Miami, OK

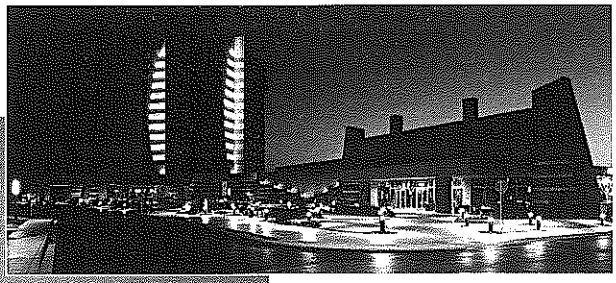
SERVICES PERFORMED
Structural Engineering
Civil Engineering

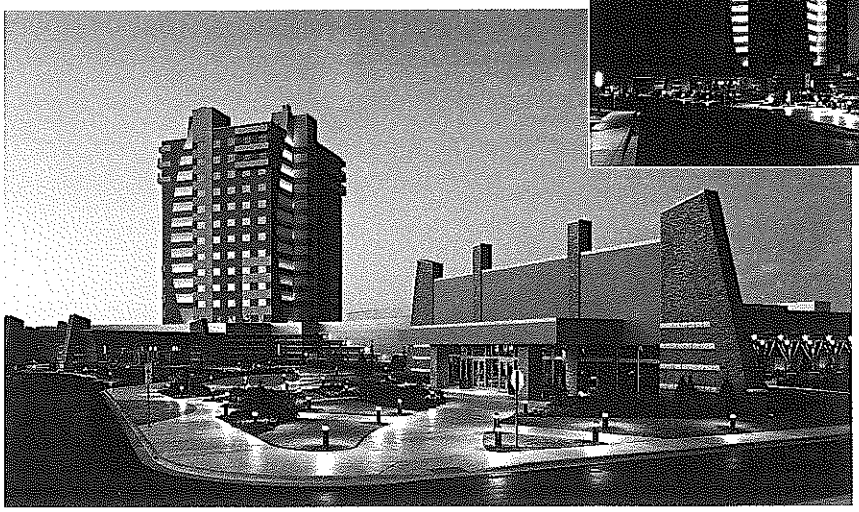
COMPLETION DATE
2008

PROJECT COST
$140,000,000

CLIENT CONTACT
JCJ Architecture
Mr. William Dow
(860) 247-9226

John Berry, Chairman
Quapaw Tribe of Oklahoma
(918) 542-1853





wendel

Saratoga Casino and Raceway Hotel

PROJECT DESCRIPTION

Wendel is the structural engineer on this approximately $30 million hotel addition project located at the existing Saratoga Gaming and Raceway facility led by Saratoga Gaming & Raceway, JCJ Architecture, and BBL Construction.

The project includes:

- 4-story, steel-framed 110-room hotel tower
- Lobby & Porte Cochere drop off
- Restaurant and Meeting Rooms
- Pool & Spa

CLIENT
Saratoga Gaming & Raceway

PROJECT LOCATION
Saratoga Springs, NY

SERVICES PERFORMED
Structural Engineering

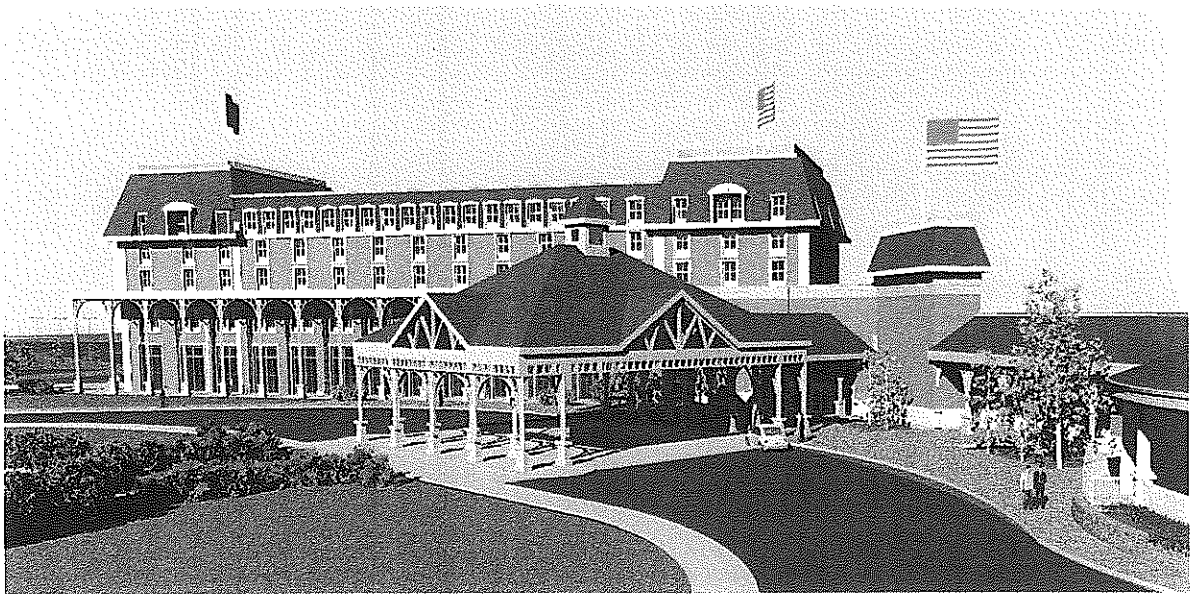
COMPLETION DATE
Fall 2015

PROJECT COST
$30,000,000

CLIENT CONTACT
JCJ Architecture
Mr. Jeff Wynkoop
Project Manager
(646) 597-5398

Saratoga Gaming & Raceway
Mr. Dan Gerrity
President
(518) 581-5725

BBL Construction
Mr. Jon DeForest
Principal
(518) 452-8200



SARATOGA HOTEL & EVENT CENTER

JCJARCHITECTURE

wendel

Akwesasne Mohawk Casino Phase II

PROJECT DESCRIPTION

Wendel was retained as the civil and traffic engineer and landscape architect on Phase II of the $120 million, phased project led by Encompass Develop, Design & Construct, LLC and NORR Limited.

One of the key aspects of this project was mobility management. A facility of this type required a well-organized, logical site master plan. The heavy pedestrian traffic flow, when inter-mixed with valet parking, limousines, tour buses and various types of service vehicles, demanded a well-executed plan to satisfy all the needs of the casino and hotel.

As part of our overall infrastructure analysis and design improvements Wendel also prepared an evaluation of existing water, sanitary sewer and stormwater facilities. The evaluation led to the construction of water system improvements, on and off-site, wastewater collection system improvements, and upgrades to onsite stormwater conveyance and detention facilities to meet current federal/state design standards.

Phase II of the project includes:

- Relocation of the Mohawk Bingo Palace (650 bingo seats and 250 Class II slots) to the sprung structure
- A one-story, 50,000 square foot casino addition with 2,000 gaming positions, back-of-house areas and administrative spaces
- A seven-story, 150-room hotel, including an enclosed, ground level pool building
- A 14 bay RV park, bus drop-off, pedestrian and vehicular site circulation, and signage improvements
- A Traffic Impact Study, off-site signal and roadway improvements along NYS Route 37
- Complete site landscape improvements unifying existing and new facilities consisting of a wide variety of native trees, perennials and grasses

CLIENT
Saint Regis Mohawk Tribe

PROJECT LOCATION
Akwesasne, NY

SERVICES PERFORMED
Civil/Site Engineering
Structural Engineering
Traffic Engineering
Landscape Architecture

COMPLETION DATE
Phase I - 2009
Phase II - 2013

PROJECT COST
Phase I - $45,000,000
Phase II - $75,000,000

CLIENT CONTACT
NORR Limited
Mr. David Northcote
(860) 247-9226

Encompass Develop,
Design & Construct, LLC
Mr. John Stewart
(502) 992-5105

Saint Regis Mohawk Tribe
Mr. Ernie Thompson
(518) 358-2272

wendel

Apache Nugget Casino & Travel Plaza

PROJECT DESCRIPTION

The Design-Build Team of Kennedy Wendel and Worth Group Architects have been retained to prepare a Preliminary Design and Guaranteed Maximum Price budget for an approximately 15,000 square foot new Travel Plaza that includes a casino with approximately 140 gaming positions, a convenience store, deli, trucker's lounge, administrative and back-of-house areas, a single-bay self-serve car wash facility, gasoline fueling islands for automobiles, diesel fueling islands for tractor-trailer trucks and RV's, paved parking for 60 automobiles and gravel parking for 25 tractor-trailer trucks and 10 RV's. The site is an undeveloped 10 acre site at the intersection of U.S Highway 550 and State Highway 537 approximately 20 miles northwest of Cuba, New Mexico.

The Kennedy Wendel/Worth Group Team has performed the following tasks:

- Worked with the client to develop a building program for gaming, c-store, deli, back of house, and public areas
- Performed a preliminary geotechnical investigation and topographic survey
- Prepared alternative floor plan layouts and building elevations
- Prepared site development layouts showing alternate configurations for building locations, access roadways, automobile and truck/RV parking, service vehicle access, fueling islands, utility services and site drainage systems
- Prepared approximately 50% complete Construction Documents
- Developed a Draft budget cost estimate for owner review and approval
- Developed schedule for Design-Build procurement
- Update and renovation of the ceramics room and kiln ventilation

CLIENT
Jicarilla Apache Tribe

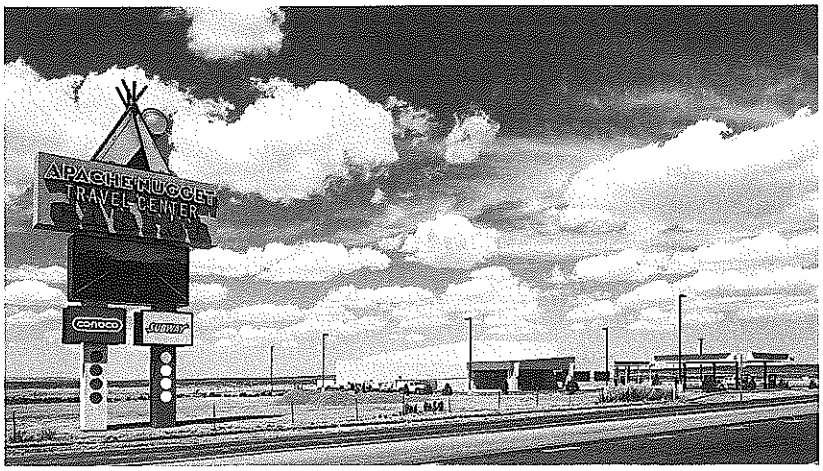
PROJECT LOCATION
Dulce, New Mexico

SERVICES PERFORMED
Design-Build
Construction Management

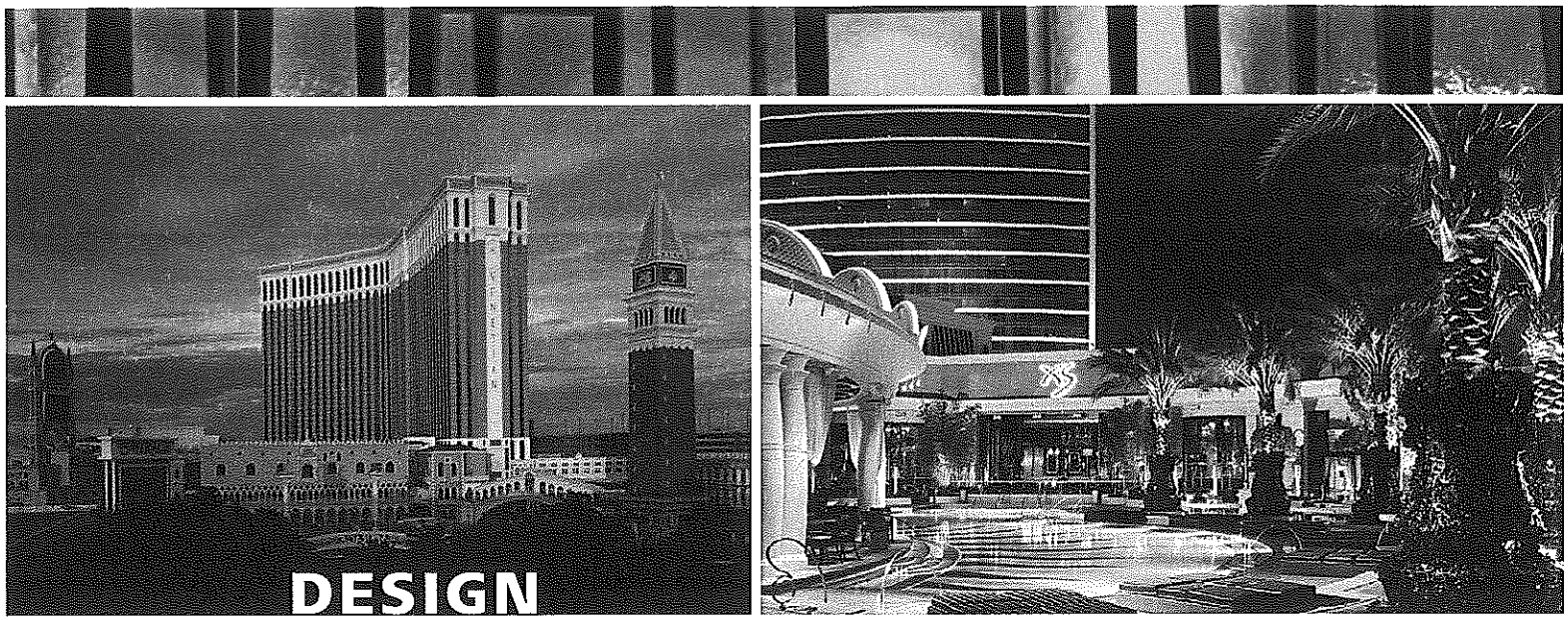
COMPLETION DATE
2012

PROJECT COST
$8,600,000

CLIENT CONTACT
Turk Cobell
Native Hospitality Advisors
7733 Arden Grove Street
Las Vegas, NV 89113
(702) 429-0203
turkni@cox.net



KENNEDY WENDEL
CONSTRUCTION • PROJECT MANAGEMENT



experience

WATG Wimberly INTERIORS

Company Profile

WATG Wimberly INTERIORS

WATG has been **designing destinations for over 65 years**—places that delight their visitors and satisfy their owners, too. The work of WATG spans more than 160 countries and territories and is highly acclaimed for excellence in design and creativity.

The **firm's policy** is to respect the unique environment and cultural heritage of each host country, region or community, and to make a positive contribution to the lives and culture of that area. Our mission, *"designing destinations that lift the spirit."*

Having designed **more hospitality projects than any other firm in the world**, WATG has had the privilege of assisting preeminent owners, developers, operators and governments on six continents. No two places, no two clients, no two projects are alike. Yet they all succeed in achieving these critical balances: the needs of clients and the expectations of visitors; the wishes of the local community and the preferences of the international marketplace; the desire for design innovation and the reality of economic restraints.

From offices in Irvine, Los Angeles, New York, London, Singapore, Honolulu, and various project site offices, WATG offers strategy, planning, architecture, interior design, and landscape architecture services. A talented and multicultural staff of over 300 professionals specializes in hospitality, leisure and entertainment projects. As an industry leader with over a half-century of experience, WATG has been involved in the successful completion of over 290 hotel projects totaling more than 100,000 new guestrooms; and another 12,000 guestrooms are currently under construction.

WATG has been involved in the design of a variety of gaming projects including over 80 casinos. Completed projects include: Encore at Wynn Las Vegas; Atlantis, Paradise Island Casino Resort in the Bahamas; The Palace Tower at Caesars Palace, Las Vegas; Regency Casino Thessaloniki, Greece; San Manuel Indian Bingo & Casino in Highland, California; Spa Resort Casino in Palm Springs; Tropicana, Atlantic City; The Venetian in Las Vegas; several casino projects for Ameristar, MGM and Lotte.

In addition to designing casinos, **WATG has been internationally acclaimed for creativity and bottom-line success of projects** that include:

- hotels and resorts
- convention centers and conference facilities
- golf resorts and clubhouses
- marinas/waterfront developments
- master planned resort and recreational communities
- mixed use developments
- residential: apartments, extended stay, assisted-living, custom
- restaurants and clubs
- retail, dining and entertainment venues
- spas, sports clubs, and wellness centers
- theme parks, water parks and themed environments
- vacation ownership/timeshare resorts

Regardless of the project type or location, WATG offers clients **a cost-effective system for expediting the development process** and producing award-winning designs that consistently rank among the top in the world by the most discerning travelers. For further information about WATG, visit watg.com.

A corporation organized in 1945

IRVINE
8001 Irvine Center Drive, Suite 500
Irvine, California 92618 USA
Tel +1 949 574 8500
Fax +1 949 574 8550

LOS ANGELES
WIMBERLY INTERIORS
446 South Cañon Drive
Beverly Hills, California 90212 USA
Tel +1 310 282 0626
Fax +1 310 282 9996

NEW YORK
WIMBERLY INTERIORS
75 Spring Street, Suite 700
New York, New York 10012 USA
Tel +1 212 274 2626
Fax +1 212 274 2627

LONDON
36–38 Fitzroy Square
Boston House
London, W1T 6EY UK
Tel +44 (0) 20 7906 6600
Fax +44 (0) 20 7906 6660

SINGAPORE
8 Commonwealth Lane #02-03
Singapore 149555
Tel +65 6227 2618
Fax +65 6227 0650

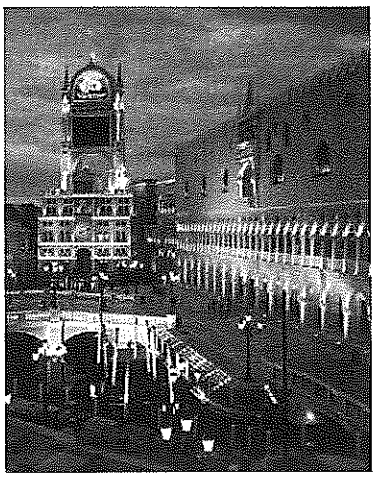
HONOLULU
700 Bishop Street, Suite 1800
Honolulu, Hawaii 96813 USA
Tel +1 808 521 8888
Fax +1 808 521 3888

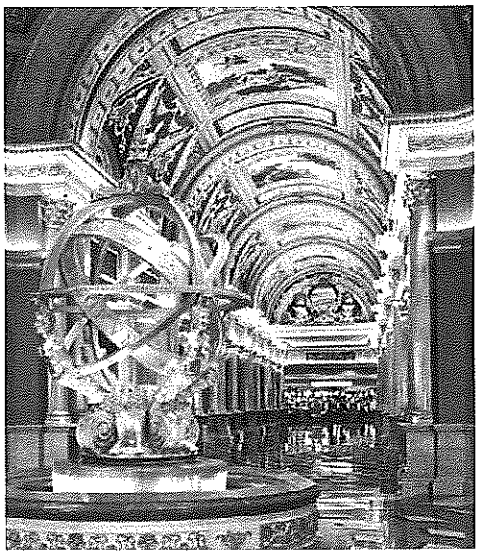
watg.com
wimberlyinteriors.com

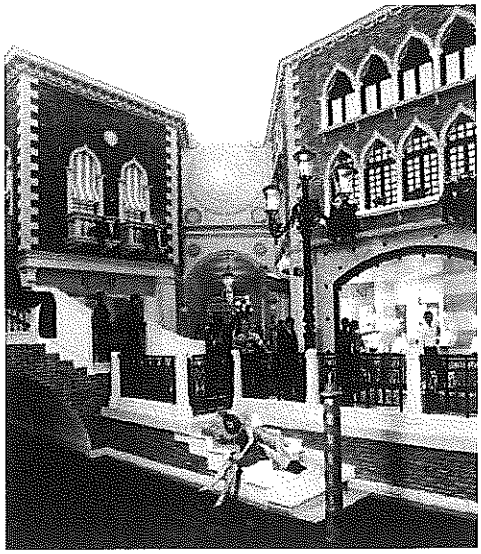
The Venetian Resort-Hotel-Casino

Las Vegas, Nevada, USA

WATG







challenge

The design challenge was to create a 3,036-suite, luxury hotel, casino, convention, resort and entertainment complex that replicates the architecture and opulence of Italy's most romantic city. Other challenges included the placement of a canal and swimming pool on the upper level, locating the retail area on top of the casino, and a fast-track schedule.

solution

To capture the evocative allure of Venice, its well-known icons—The Doge's Palace, Campanile, Bridge of Sighs, and Rialto Bridge—were meticulously incorporated into the design, within a setting of lagoons graced by gondolas and traversed by high arched bridges. The Venice theme was carefully woven throughout the entire project.

client

Las Vegas Sands, Inc.

size

36 acres
3,036 suites; 35 stories
120,000-square-foot casino

amenities

All-suites average 700 square feet; Grand Canal Shoppes with over 500,000 square feet of retail and entertainment space; Canyon Ranch SpaClub; 11 restaurants; grand ballroom; over a half-million square feet of new convention space linked to the adjacent Sands Expo and Convention Center

services provided

Architectural design and theming

key collaborator

TSA of Nevada, associate architect

awards

Casino Executive - Gold Medallion Design Award; Las Vegas Chapter, AIA Merit Award; ULI Award of Excellence; *Casino Player* magazine - Best Overall Casino Hotel, Best Hotel in America, Best Rooms, Best Theme, and Best Health Spa

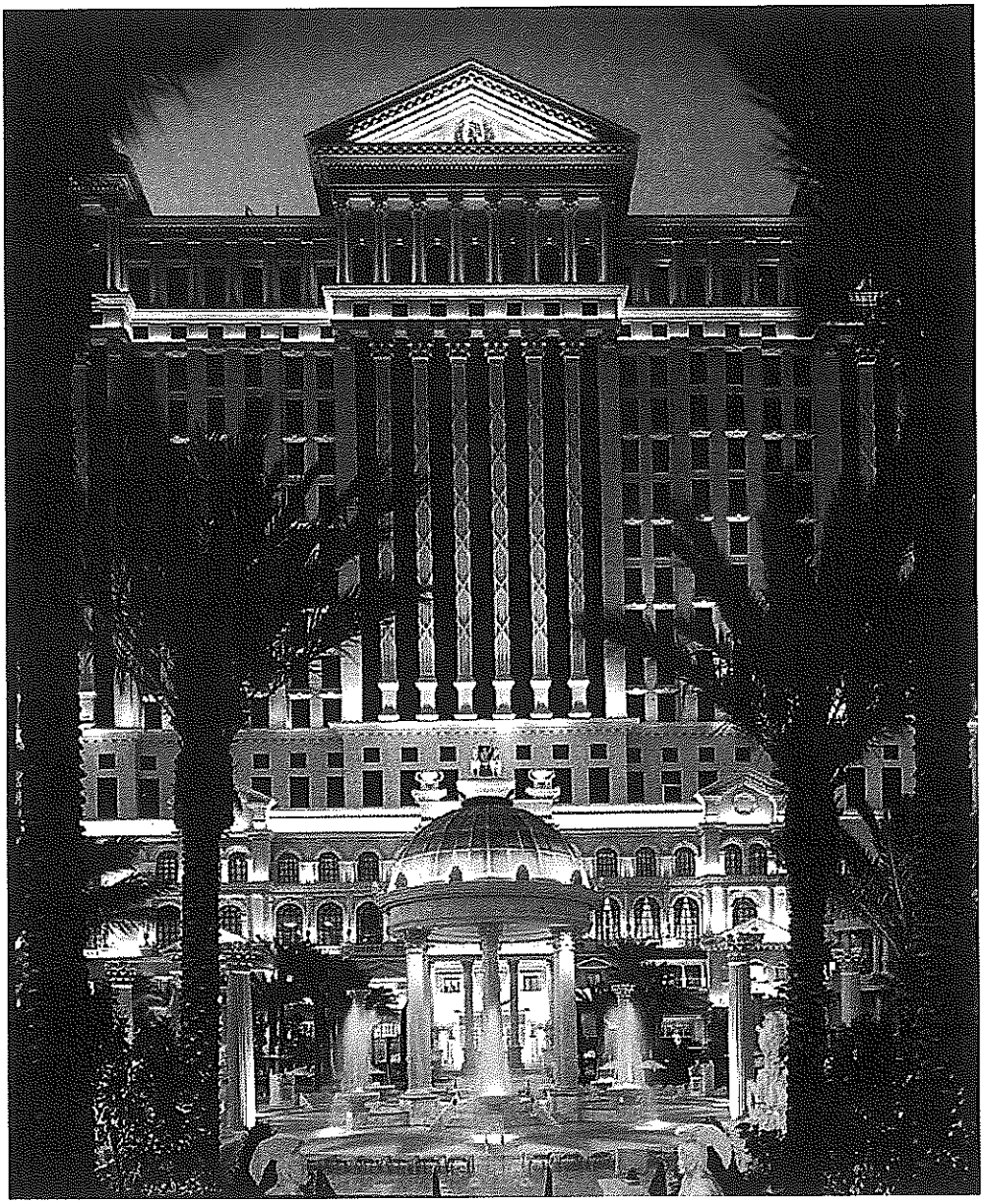
results

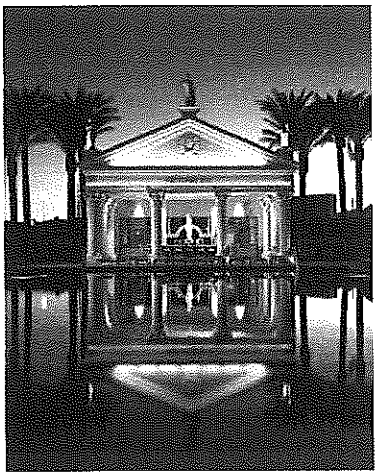
The hotel consistently achieves room rates, occupancies and RevPAR that are among the highest in Las Vegas.

The Palace Tower at Caesars Palace

Las Vegas, Nevada, USA

WATG





client

Caesars Palace, Inc.

size

86 acres
1,134 guestrooms
30 luxury suites

amenities

110,000 square feet of banquet and meeting facilities; full-service spa and fitness center; retail shops; casino; restaurants; three tennis courts; 4.5 acre swimming complex with three marble-lined pools, two whirlpools, and pool bar

services provided

Architectural design

awards

Readers of *Travel + Leisure* magazine ranked Caesars Palace as among the 'Best Hotels in the Continental United States and Canada.'

challenge

The challenge was to design a stunning new hotel structure and conference facility that would cater to an influx of high-end corporate travelers, and become the centerpiece of the hotel's expansion.

solution

A 29-story tower was designed in the resort's trademark Roman architecture style, with exterior fluted columns and Corinthian capitals and pediments. Following the line of the Greco-Roman façade, new guestrooms vary in size from 500 to 750 square feet, each with 9-foot ceilings to enhance the feeling of spaciousness. Two of the tower's floors are devoted to banquet and meeting facilities. An elaborate 'Garden of the Gods' swimming complex was designed with landscaped gardens, statuary and fountains.

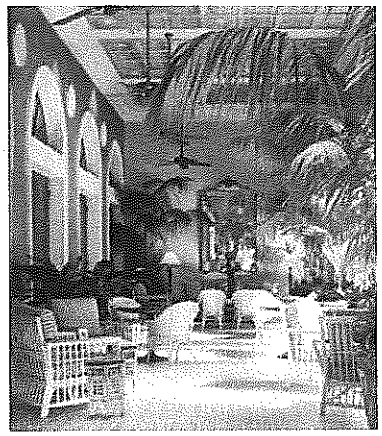
results

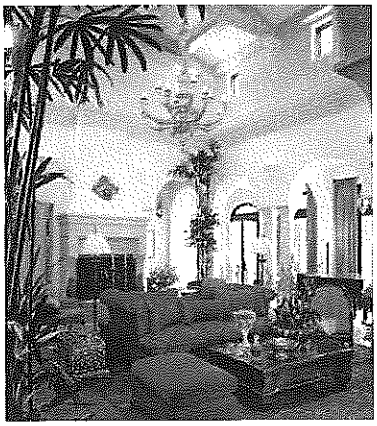
Caesars Palace—the first themed hotel and casino in Las Vegas—is still distinguishing itself and delighting tourists. Its revenues are among the highest in the city.

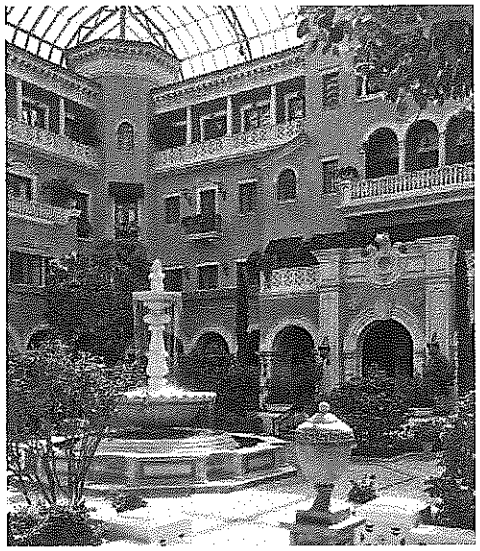
The Mansion at MGM Grand

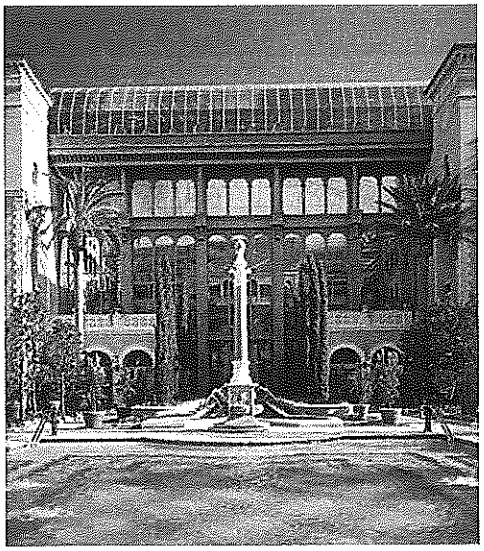
Las Vegas, Nevada, USA

WATG









challenge

The design challenge was to transport guests to another place, specifically, the Tuscan region of Italy. On a site crowded by urban buildings and unpleasant outward views, 29 spacious and unique villas were to be designed, ensuring the greatest level of privacy, security and comfort.

solution

Design details, colors, finishes, and materials were researched to capture the sense and feel of Tuscany, providing guests with the ambiance and amenities of a mansion and the elegance and exclusivity of an Italian palazzo. All villas are planned to allow guests access to any villa and to the casino without going outdoors.

results

The Mansion capitalizes on a private environment that caters to the exquisite taste of the special guests of the MGM Grand Casino.

client

MGM Grand, Inc., MGM Grand Development, Inc.

size

5.35 acres
29 villas
290,000 square feet

amenities

Private entrance; Grand Salon; indoor and outdoor pools; spa; restaurant; wine room; formal gardens; fountains and reflecting pools; enclosed climate-controlled atrium

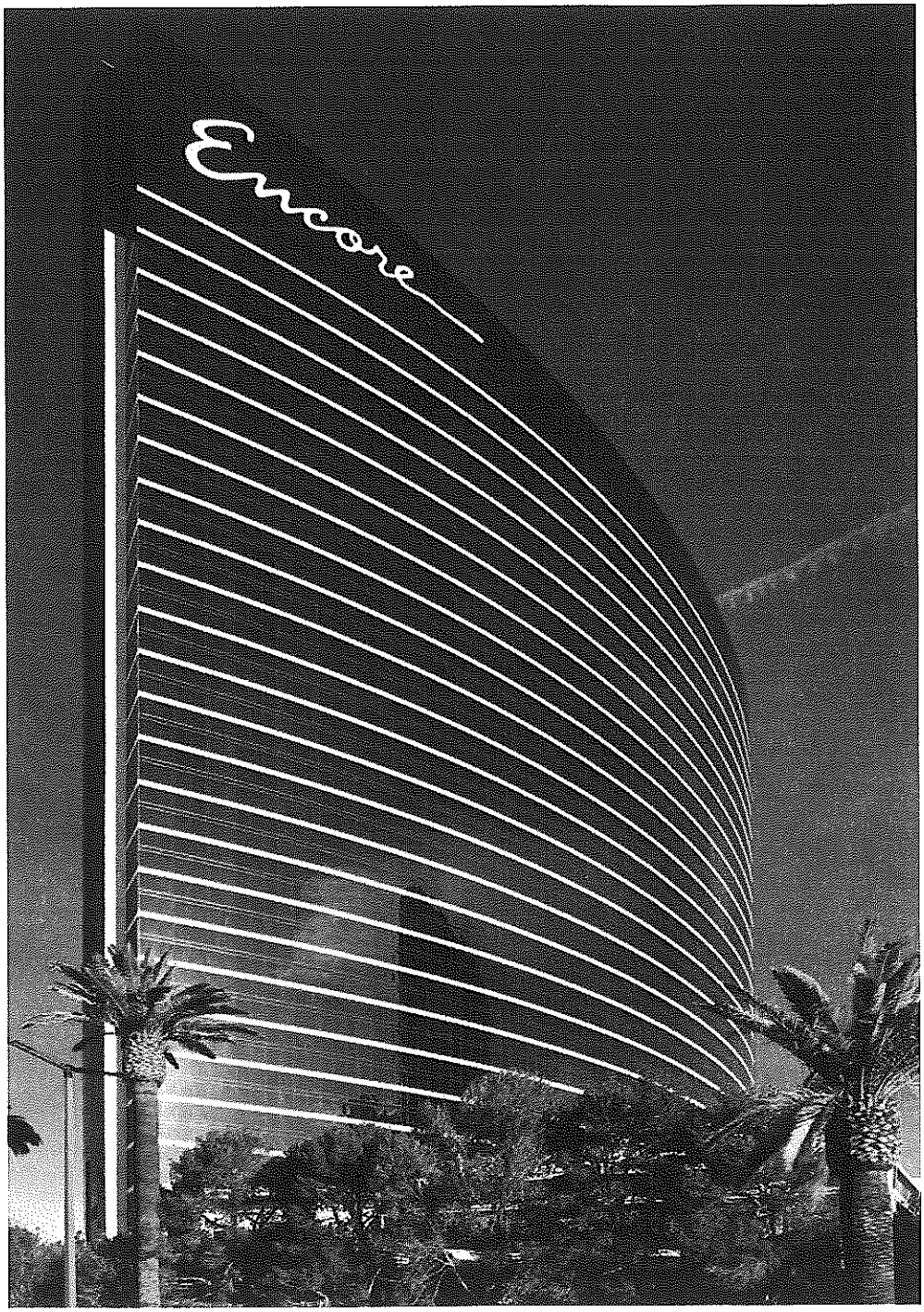
services provided

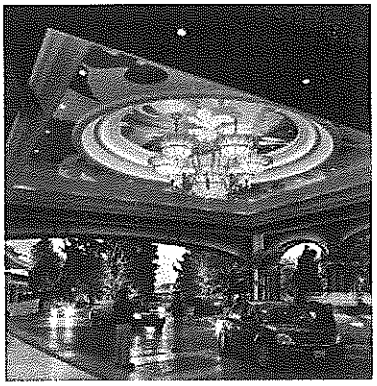
Architectural design

Encore at Wynn Las Vegas

Las Vegas, Nevada, USA

WATG





client

Wynn Design & Development

size

Site: 240 acres
2,034 guestrooms (48 stories)
72,000-square-foot casino
10-level parking structure
4.5 million-square-foot expansion

amenities

Spa and salon; pool and recreation area; private boardrooms, meeting rooms and column-free ballroom; 11 retail outlets; five restaurants; seven bars and lounges; nightclubs

services provided

Architecture (architect of record)

key collaborators:

MHA Studio (associate architect)
Wynn Design & Development
LifeScapes International, Inc. (landscape architect)

challenge

The challenge was to design a new luxury hotel tower to be fully integrated with the neighboring Wynn Las Vegas hotel, containing all of the elements for a complete resort experience.

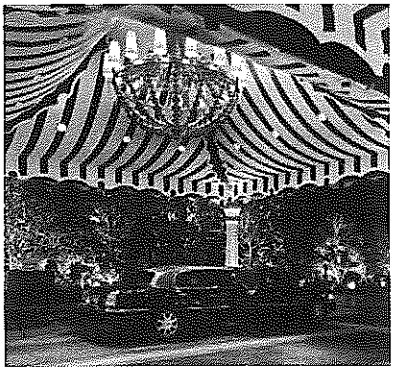
solution

Conceived as a collection of unique neighborhoods, the resort was designed in a casually elegant approach that is both intimate and indulgent. Spacious suites offer a cosmopolitan style and sophistication in a residential feel. A European-inspired pool area and vibrant atrium are centerpieces of Encore Suites' festive atmosphere.

Encore at Wynn Las Vegas

Las Vegas, Nevada, USA

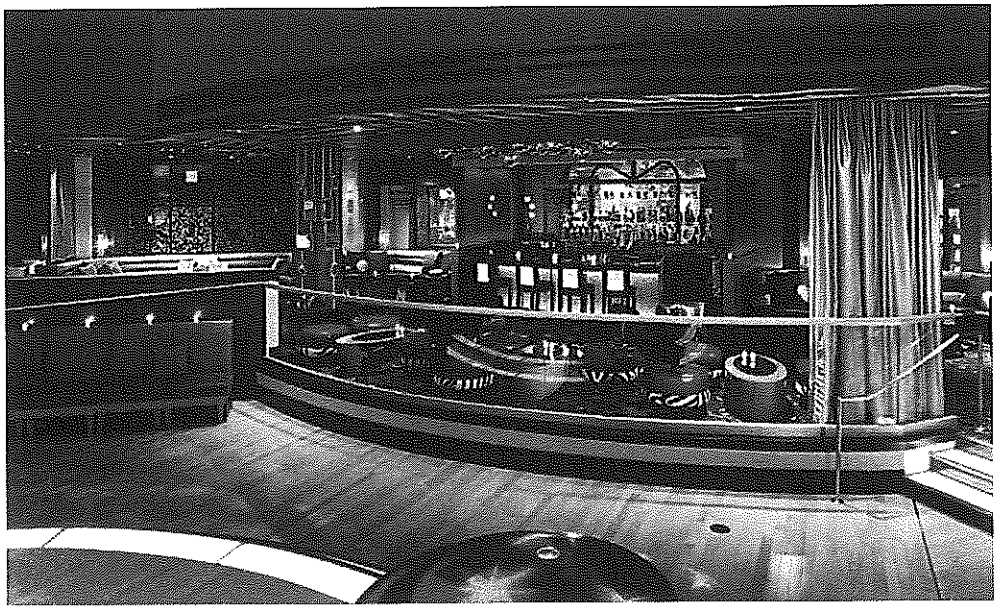
WATG

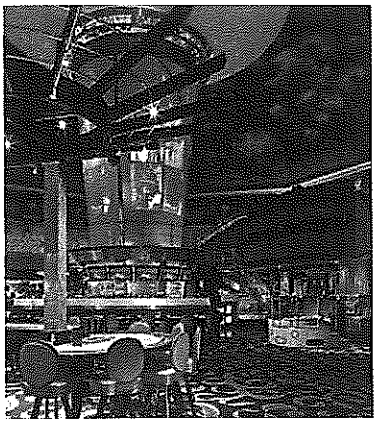


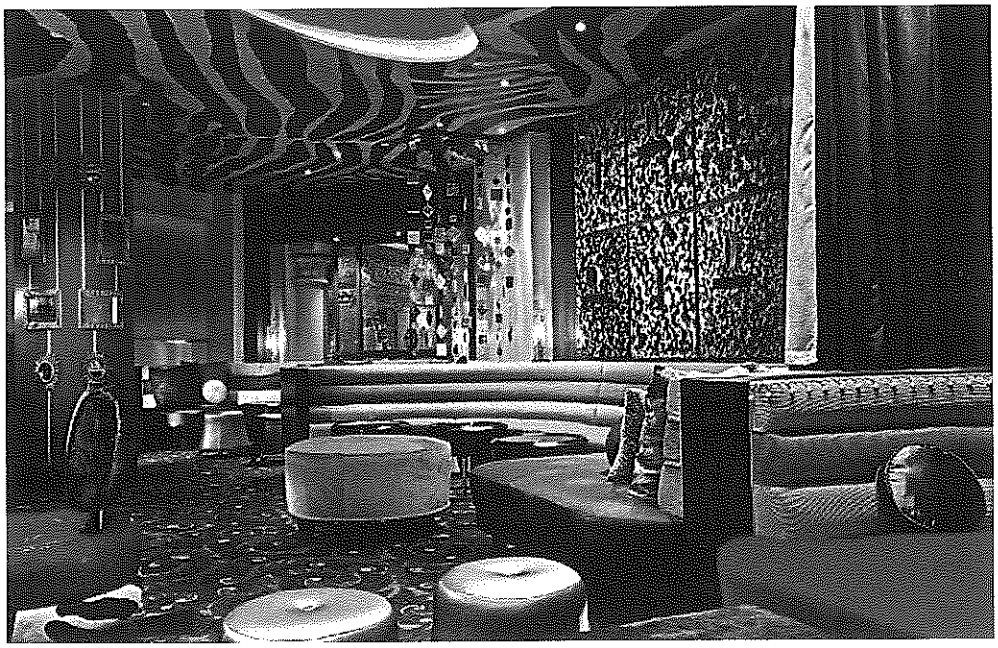
Masquerade at Harrah's New Orleans

New Orleans, Louisiana, USA

WATG







client

Harrah's Entertainment, Inc.

size

13,000 square feet

amenities

2,400-square-foot ultra lounge; 42-foot tall high-tech video tower; 32-foot ice bar; live shows and music; table games and slots; night sky-themed ceiling mural

services provided

Architectural design
Interior design

associate architect

Montgomery Roth

challenge

The design challenge was to create a one-of-a-kind, hip and ultra-modern casino entertainment venue to become the focal point of the existing casino.

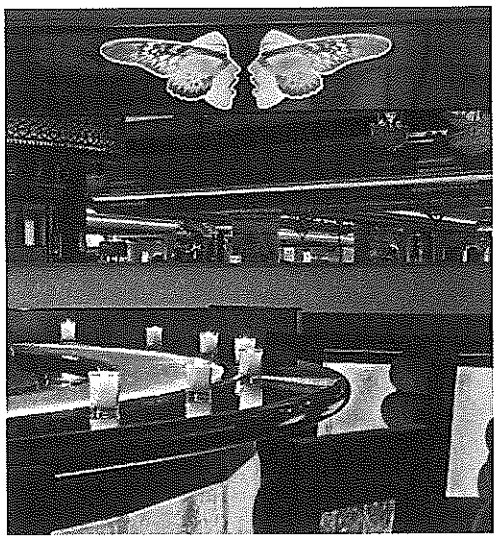
solution

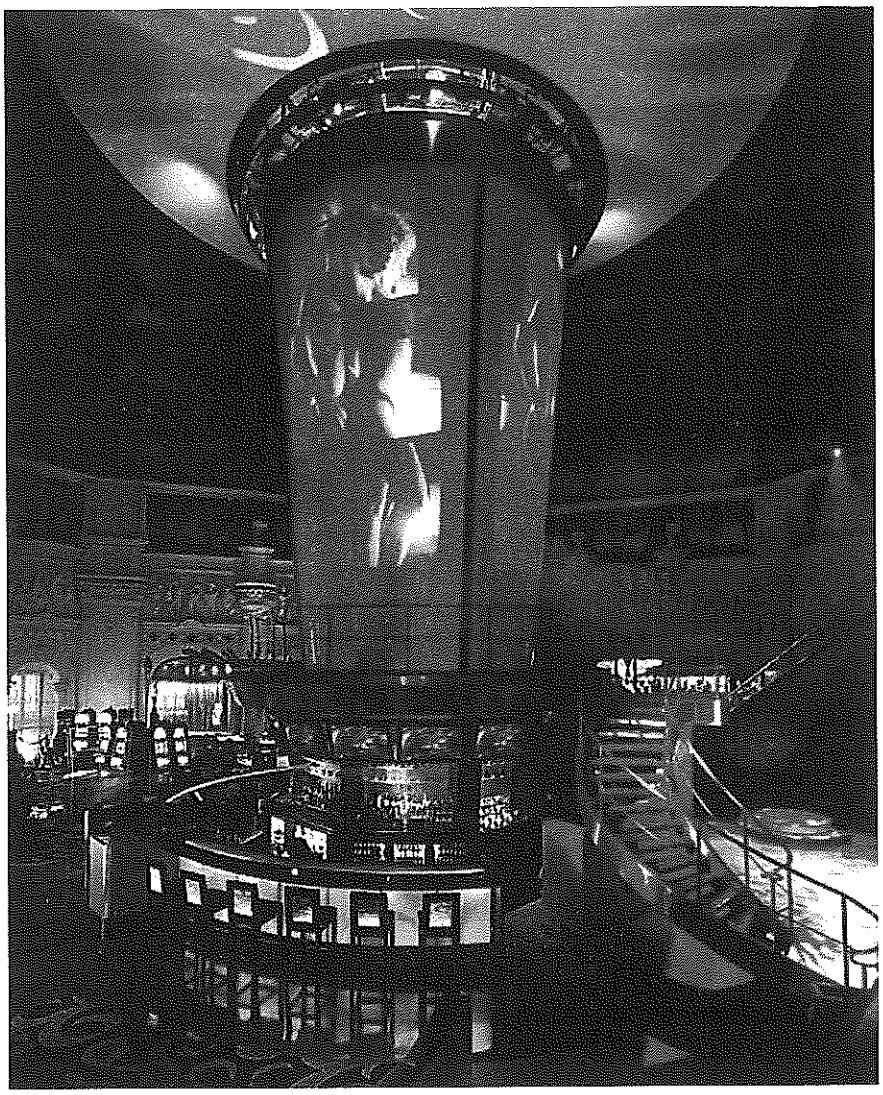
The design team created a "Masquerade" themed entertainment piece at the center of the casino in the former passive Jazz Court area. The space was designed in a New Orleans baroque, contrasting with a sleek and ultra modern video tower. The 42-foot-tall tower serves as the centerpiece and merges art and technology to create a sensory experience with audio, video and special effects including faux-fire and intelligent lighting. A 53-foot ceiling displays a night sky themed mural and fiber optic galaxy to give the space a dramatic outdoor feel. Completing the experience is an intimate private lounge, 32-foot ice bar, dance floor, stage for live shows, table games and slots.

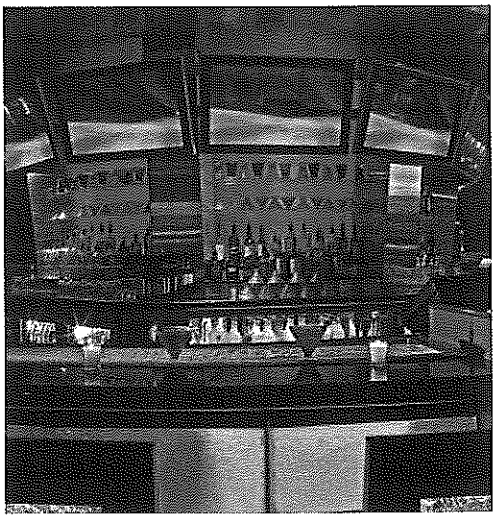
Masquerade at Harrah's New Orleans

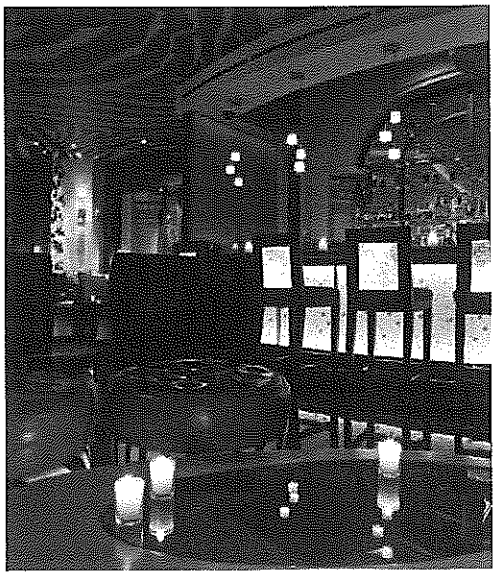
New Orleans, Louisiana, USA

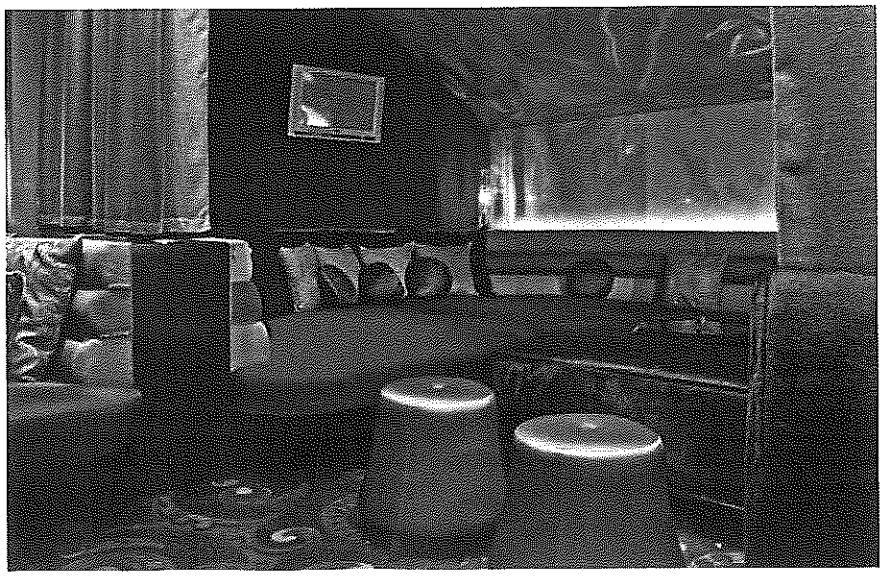
WATG







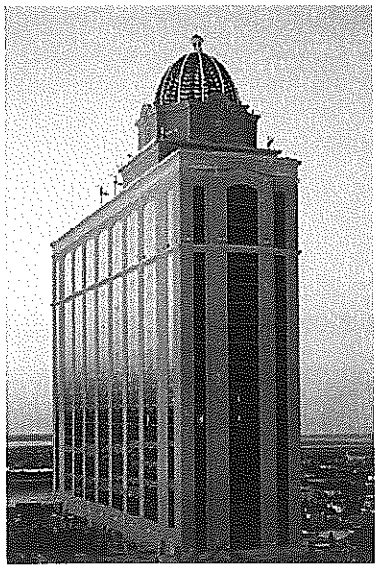


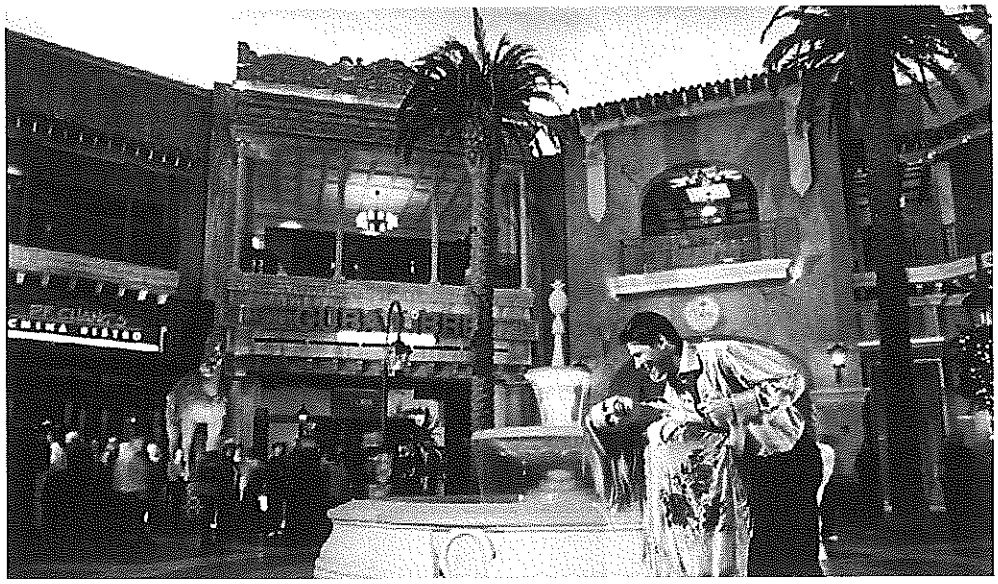


The Quarter at Tropicana Casino and Resort Atlantic City

Atlantic City, New Jersey, USA

WATG





client

Aztar Corporation

size

3.4-acre site
200,000 square-foot retail, dining and entertainment area; 502-room hotel tower; 15,000 square-foot casino renovation; 45,000 square feet of meeting space; 2,400-car parking garage

amenities

502-room Havana Tower; casino; several high-end restaurants and dining areas; two-level themed retail plaza ("The Quarter")

services provided

Architectural services (full-service)

associate architect

SOSH Architects, Atlantic City

"Everything around you is from Cuba. There is nothing like it in Atlantic City."

—Dennis Gomes, President Tropicana Casino & Resort

challenge

The challenge was to create a new dynamic retail, dining, and entertainment venue at the Tropicana Casino Resort that would attract a wider-range of visitors and increase their length of stay at the property. Integral to the program was the design of a new hotel tower and expansion and renovation of the casino.

solution

An indoor shopping and entertainment environment was designed based on the traditional architecture of historic Havana, with an outdoor feel. Visitors access the district from the casino floor and new parking structure, and circulate through it to new guestrooms and meeting spaces.

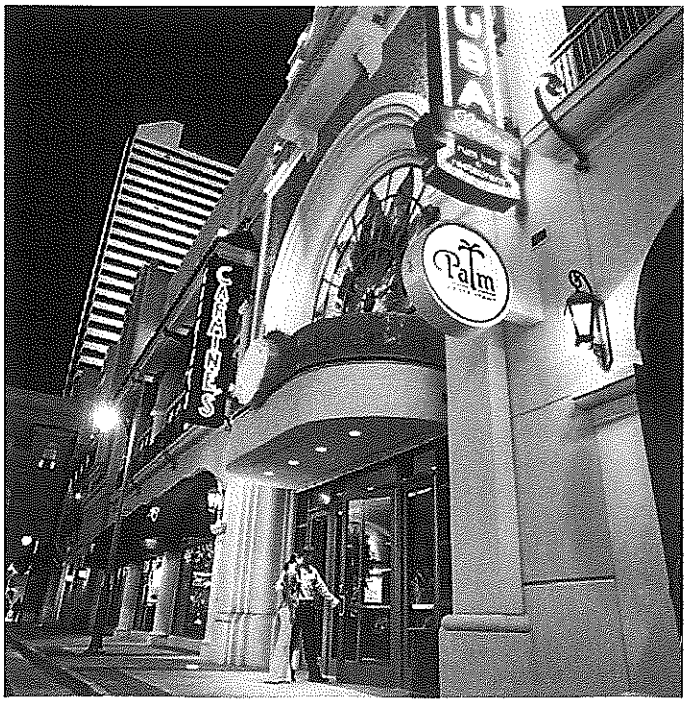
results

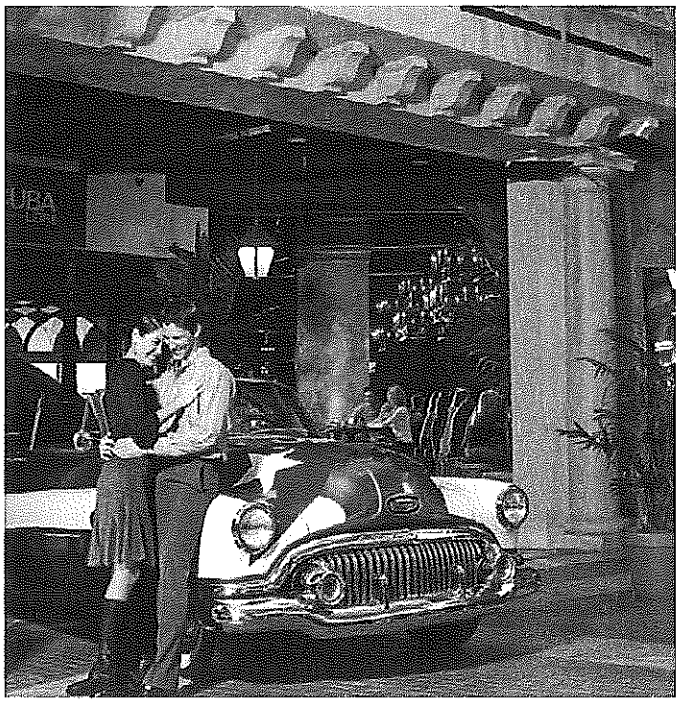
The Tropicana Atlantic City now offers more options under one roof than any other hotel or casino on the East Coast.

The Quarter at Tropicana Casino and Resort Atlantic City

Atlantic City, New Jersey, USA

WATG

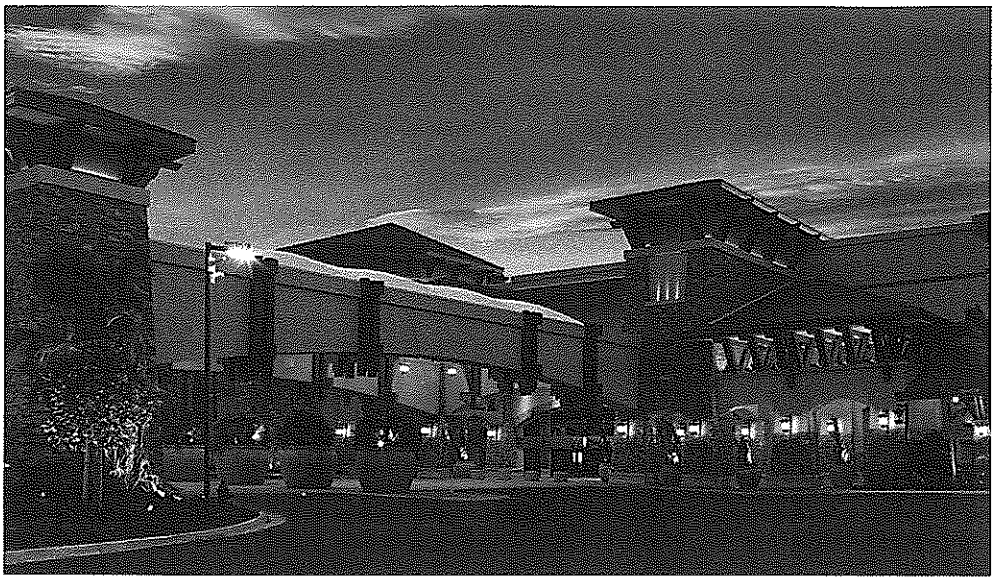


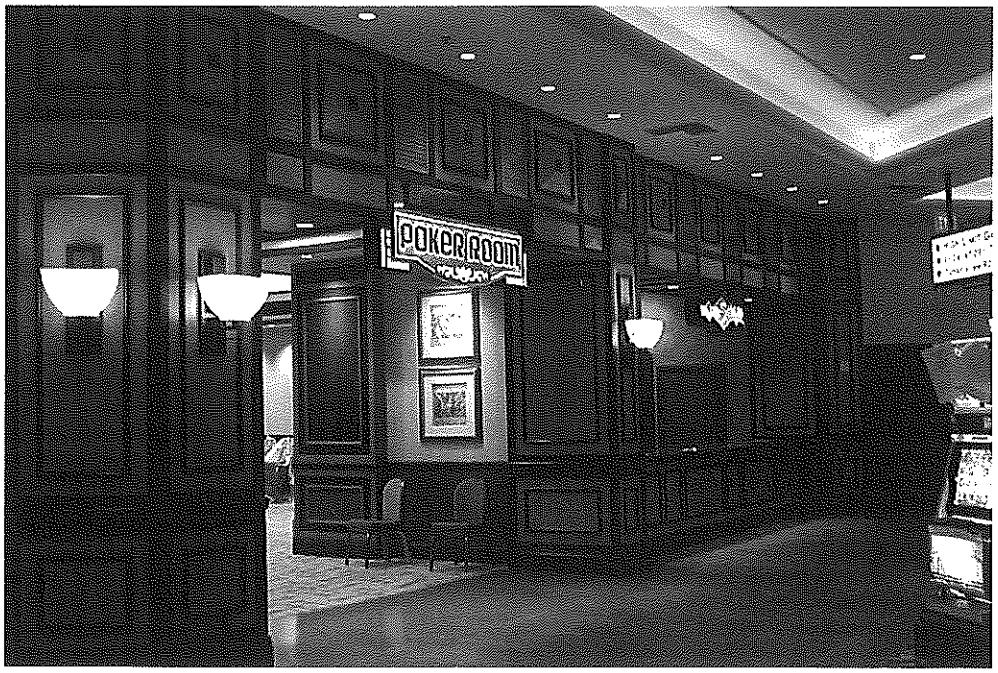


San Manuel Indian Bingo and Casino Expansion

Highland, California, USA

WATG





client

San Manuel Band of Mission Indians

size

Casino: 222,160 square feet (new)
Gaming floor: 85,000 square feet
Total area: 450,000 square feet

amenities

Bingo hall; poker room; high limits area; retail shop; bars; buffet restaurant; food court; entertainment lounge; multi-purpose room; overhead pedestrian bridge; basement parking

services provided

Architectural design

schedule

Fast-track design
Design start: June 2003
Construction start: December 2003
Completed: January 2005

awards

Best of 2005 Southern California

--Gaming: Honorable Mention by *California Construction* magazine

challenge

The design challenge was to create a simple, comfortable and inviting gaming environment that would complement the surrounding area and provide enough flexibility to accommodate change. The client required a casino space for 2,000 slot machines and a bingo/concert hall for 2,000 people.

solution

Two gaming levels were designed to provide the required space for 2,000 machines on one level and the bingo/concert hall on the lower level. A pedestrian bridge connects the upper level of the casino with the parking structure, and elevators connect both gaming floors to an underground VIP parking area. The tribe's cultural motifs were articulated in various areas including the paving and in glass etching on entry doors.

Spa Resort Casino

Palm Springs, California, USA

WATG

client

Agua Caliente Band of Cahuilla Indians

size

6.8 acres
130,000 square feet (building area)
43,000 square feet (gaming floor)

amenities

Casino with 1,000 slots; three restaurants; bar and grille; 150-seat entertainment lounge; several water features

services provided

Architectural design (full-service)

"We were very serious about creating a unique destination that would transform the region, and we have chosen the best creative team to bring that vision to reality."

— Richard Milanovich
Tribal Chairman,
Agua Caliente Band of Cahuilla Indians

challenge

The design challenge was to create a new upscale casino—one with a casual elegance—that would become a prominent feature of downtown Palm Springs and blend harmoniously with the surrounding residential and commercial areas.

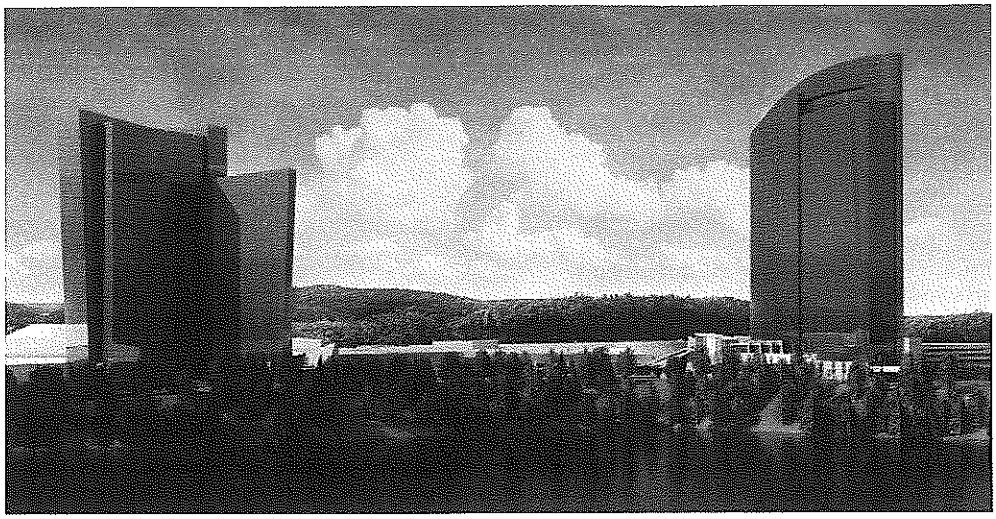
solution

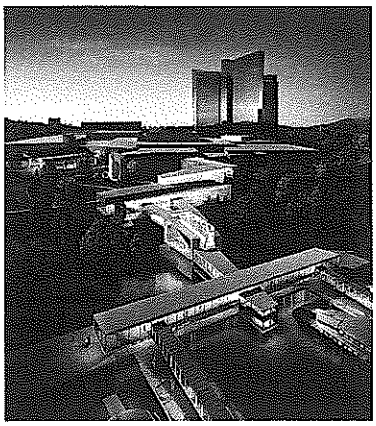
Situated diagonally across from the existing property, a two-story casino structure was designed to represent the Agua Caliente people, with cream-colored exterior stucco walls, blue tiled roof, rounded turrets, numerous water features and abundant foliage around the exterior. The main entrance incorporates a circular driveway ringed by a plant-covered trellis sidewalk and palm trees. The decor includes a tribute to the tribe's history and various appropriate tribal artifacts.

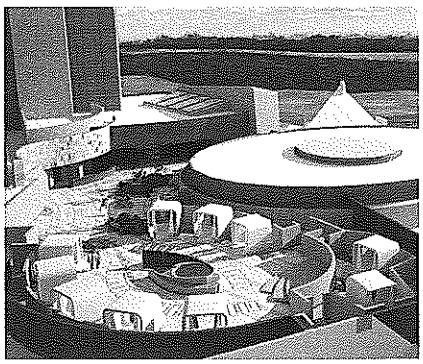
Mohegan Sun's Project Horizon

Uncasville, Connecticut, USA

WATG Wimberly INTERIORS







client

Mohegan Sun / The Mohegan Tribal Gaming Authority

size

Site: 700 acres
919 guestrooms:
658 Mohegan Sun rooms
261 House of Blues themed rooms
64,000 SF casino addition including 45,000 SF of gaming space ("Casino of the Wind")
150,000 SF of retail and F&B
23,000 SF of meeting space
750,000 SF podium
20,000 SF spa
Total over 1.2 million SF

amenities

Casino with 42-table poker room and 680 slot machines; Mandara spa; pool; sun lounge; House of Blues Music Hall and Foundation Room; special events facility including retail concourses with restaurants and food court

services provided

Architectural design (full-service)
Interior design (hotel guestrooms & hotel public spaces)

key collaborators

Rockwell Group (interior design of public areas)
Idletime Networks (House of Blues design consultant)

challenge

The challenge was to organically and seamlessly master plan and design an addition of a 900-room hotel and 1 million square feet of podium expansion to the existing Mohegan Sun Resort in 3 different phases without disrupting existing infrastructure, and keeping the existing resort fully functional during the entire expansion undertaking. The clients goal was that the design expand upon the existing design narrative based on the past culture of the Mohegan Nation, and further consolidate the Resort's position as the premier entertainment destination in North America.

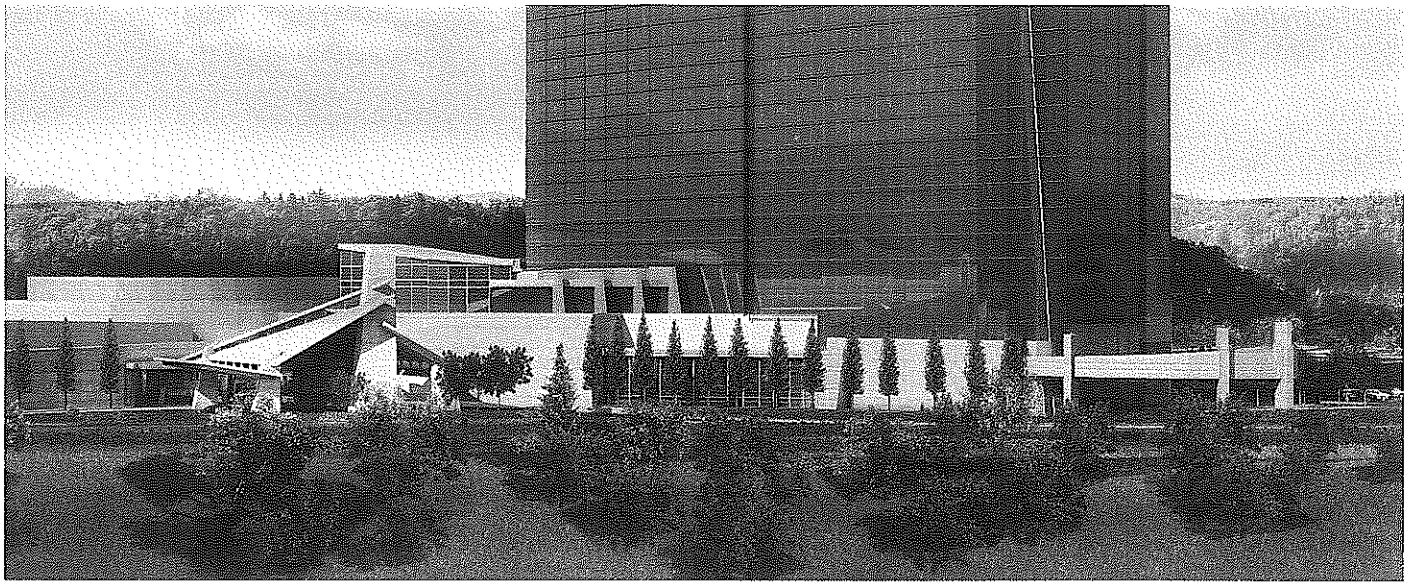
solution

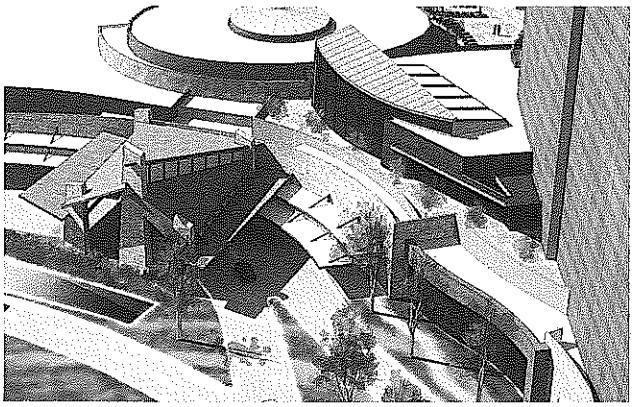
WATG's designers inserted innovating thinking into the expansion master plan, creating a solution that blended seamlessly and effortlessly into the existing resort fabric, while enhancing the guest experience and creating a heightened connection of the senses to the resort's beautiful and serene surroundings. References to the natural elements and the heritage of the Mohegan Nation were layered in at the macro- and micro-level to create a consistently luxurious design statement.

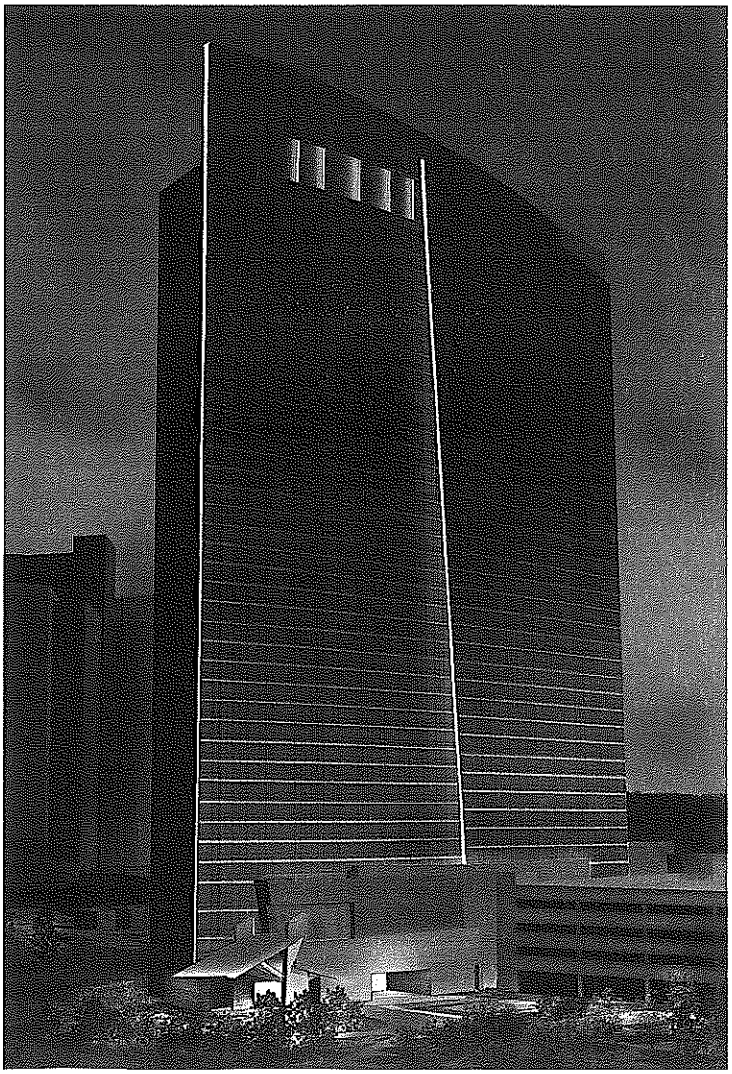
Mohegan Sun's Project Horizon

Uncasville, Connecticut, USA

WATG Wimberly INTERIORS







ADDITIONAL information

WATG Wimberly INTERIORS

Gaming Projects

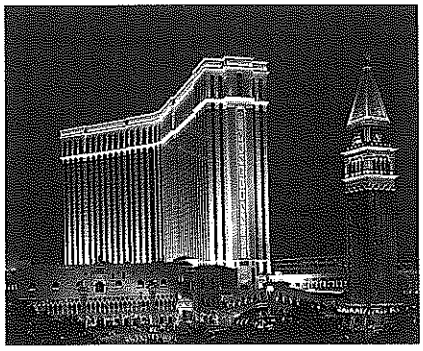
WATG

WATG's gaming experience includes the following selected projects

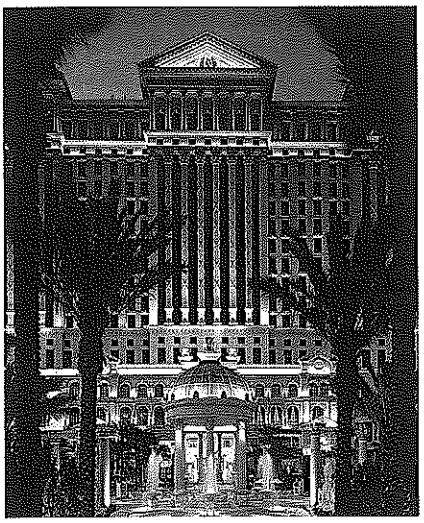
projects completed	location
Ameristar Black Hawk Casino Expansion	Black Hawk, Colorado
Ameristar Cactus Pete's Hospitality Suites Renovation	Jackpot, Nevada
Ameristar Cactus Pete's Hotel Tower Interior Design	Jackpot, Nevada
Ameristar Casino Hotel Kansas City Lobby Renovation	Kansas City, Missouri
Ameristar Casino Hotel, St. Charles	St. Charles, Missouri
Ameristar Kansas City Casino Hotel & Entertainment Center Renovation	Kansas City, Missouri
Ameristar Casino Reserve Renovation	Henderson, Nevada
Ameristar Entertainment Center – St. Charles	St. Charles, Missouri
Ameristar St. Charles Conference Center & Guestrooms	St. Charles, Missouri
Ameristar Casino Riverboat Renovation	Council Bluffs, Iowa
Ameristar Casino Vicksburg Riverboat Renovation and Expansion	Vicksburg, Mississippi
Atlantis, Paradise Island Hotel & Casino Resort	Nassau, Bahamas
Caesars Palace (The Palace Tower)	Las Vegas, Nevada
Casino Lisboa Refurbishment	Amizade, Macau, China
Casino MonteLago at The Ritz-Carlton Lake Las Vegas Resort	Las Vegas, Nevada
Cheju Shilla Casino Hotel	Cheju, Korea
Encore at Wynn Las Vegas - New Hotel Tower & Casino	Las Vegas, Nevada
Grail Theatre Showroom at Wynn Las Vegas	Las Vegas, Nevada
Gulfstream Racino Clubhouse	Hallendale, Florida
Hyatt Regency Cheju Hotel & Casino	Cheju, Korea
Kangwon Casino Resort	Kohan, South Korea
Lotte Hotel Cheju Resort & Casino	Cheju, Korea
The Mansion at the MGM Grand Luxury High Roller Suites	Las Vegas, Nevada
Masquerade at Harrah's New Orleans	New Orleans, Louisiana
The Palace of the Lost City Resort Hotel & Casino	South Africa
Players Metropolis (Harrah's) Casino & Entertainment	Metropolis, Illinois
Regency Casino - Thessaloniki*	Thessaloniki, Greece
Royal Oasis Golf Resort & Casino	Bahamas
San Manuel Indian Bingo & Casino (new facility) (San Manuel Band of Mission Indians)	Highland, California
Sinan Master Plan	Imja-Do, South Korea
Spa Resort Casino (Agua Caliente Band of Cahuilla Indians)	Palm Springs, California
Tropicana Atlantic City Casino and Resort Expansion	Atlantic City, New Jersey
The Venetian Resort-Hotel-Casino	
Mohegan Sun - Project Horizon (Phase III)	Las Vegas, Nevada

projects in progress	location
Ameristar Black Hawk Casino Hotel Tower	Black Hawk, Colorado
Bimini Bay Resort & Casino	Bimini Island, Bahamas
Dry Creek Rancheria Resort (formerly River Rock Casino) (Dry Creek Rancheria Band of Pomo Indians)	California
	Uncasville, Connecticut
San Manuel Indian Bingo & Casino Shell Expansion	Highland, California
Track 61 Mixed-Use Development	Las Vegas, Nevada

completed concept/design	location
Ak-Chin Casino (Harrah's)	Maricopa, Arizona
Ameristar Birmingham Resort Casino (Concept)	Birmingham, England
Ameristar Cardiff Resort Casino (Concept Master Plan)	Cardiff, England



The Venetian Resort-Hotel-Casino
Las Vegas, Nevada



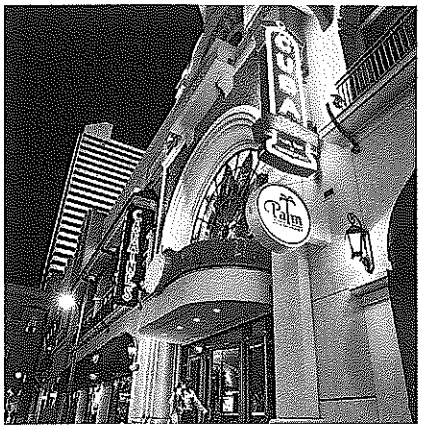
The Palace Tower at Caesars Palace
Las Vegas, Nevada

Encore at Wynn Las Vegas, New Hotel Tower & Casino
Las Vegas, Nevada

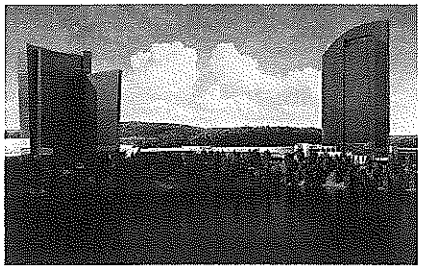
Gaming Projects

WATG

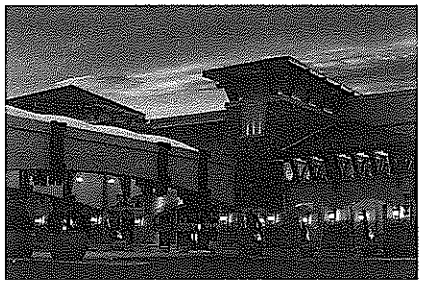
Ameristar Casino – St. Louis at Lemay	St. Louis, Missouri
Ameristar Casino Hotel Kansas City New Hotel Tower	Kansas City, Missouri
Ameristar Casino Hotel, Vicksburg	Vicksburg, Mississippi
Ameristar Casino Vicksburg New Hotel Tower	Vicksburg, Mississippi
Arica Casino	Arica, Chile
The Broadwater Casino & Hotel	Biloxi, Mississippi
Cache Creek Hotel & Casino (Rumsey Band of the Wintun Indians)	Brooks, California
Cacique del Mar Casino Resort	Costa Rica
Caesars Palace – South Tower	Las Vegas, Nevada
Caesars Palace Casino	New Orleans, Louisiana
Caesars Palace Casino & Entertainment Center	Atlantic City, New Jersey
Caesars Palace High Roller Suites (Olympic Tower)	Las Vegas, Nevada
Caesars Spain Casino Hotel (Harrah's)	Ciudad Real, Spain
Caesars Villa & Casino	Summerlin, Nevada
Casino Hotel, Sullivan County	New York
Casino-Resort-Cultural Center Master Plan (Viejas Indian Reservation)	Viejas, California
Chemehuevi Lakeside Resort Casino Master Plan (San Manuel Band of Mission Indians/Chemehuevi)	Lake Havasu, California
Coconut Hall Resort & Casino	Antigua
Condado Beach Resort & Casino	San Juan, Puerto Rico
Completed Concept/Design (Continued)	Location
El Reino de Don Quijote de la Mancha (Concept) Casino-Resort-Hotel	Ciudad Real, Spain
Fantasy Springs - Cabazon Resort Expansion (Cabazon Band of Mission Indians)	Indio, California
Galaxy City Club – Casino & Mixed-Use	Macau, China
Harrah's Casino Strip Resorts Study	Robinsonville, Mississippi
Harrah's Rincon Expansion (Concept)	Valley Center, California
Harvey's Casino Resort	Las Vegas, Nevada
Hotel Cipriani Casino	Las Vegas, Nevada
Johannesburg Convention Centre & Casino	South Africa
Kinnari Casino Resort	Pattay, Thailand
KP Project - Kumamoto	Kyushu, Japan
Las Vegas Hilton Expansion	Las Vegas, Nevada
Legends Sun - Kansas City	Kansas City, Missouri
Macau Grand Amagao Five-Star Hotel & Casino (Concept)	Macau
Marrakesh Casino/Mixed-use Resort Planning	Marrakesh, Morocco
The Marriott Marquis & Casino at the MGM Grand	Las Vegas, Nevada
Medellin Casino	Medellin, Colombia
Melbourne Casino	Melbourne, Australia
MGM Grand Atlantic City	Atlantic City, New Jersey
MGM Grand Detroit Casino	Detroit, Michigan
MGM-Mirage Atlantic City	Atlantic City, New Jersey
Mohegan Casino	Montville, Connecticut
Nexus Naga Casino and Hotel Expansion	Phnom Penh, Cambodia
Palmas Del Mar Caribbean Village & Casino*	Humacao, Puerto Rico
Palm Beach Resort Hotel & Casino*	Cannes, France
Paris Casino-Resort (Bally's)*	Las Vegas, Nevada
Phuket Entertainment Center Master Plan	Phuket, Thailand
Players Island Hotel & Casino Master Plan	Lake Charles, Louisiana
Regency Casino - Athens*	Athens, Greece



Tropicana Casino and Resort Expansion
Atlantic City, New Jersey



Mohegan Sun - Project Horizon
Uncasville, Connecticut



San Manuel Indian Bingo & Casino
Highland, California

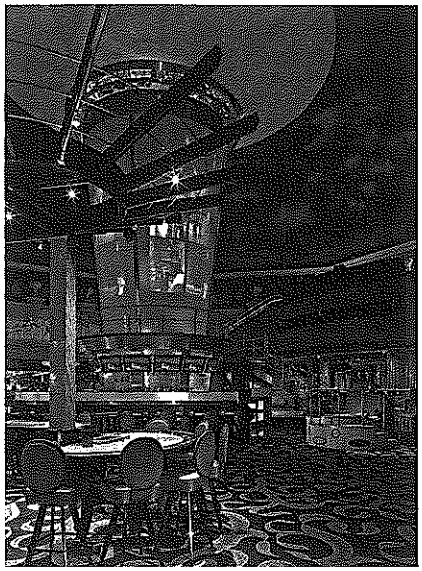
Atlantis, Paradise Island Hotel & Casino
Bahamas

Gaming Projects

WATG

Seminole Grand Hotel & Casino	Hollywood, Florida

completed concept/design (continued)	location
Silver Star Resort & Casino (Mississippi Band of Choctaw Indians)	Philadelphia, Mississippi
SJM Casino Resort	Amizade, Macau, China
Spa Resort Hotel & Casino Expansion (Agua Caliente Band of Cahuilla Indians)	Palm Springs, California
St. Kitts Casino & Commercial Complex*	St. Kitts, West Indies
St. Maarten Marriott Casino Resort	St. Maarten, Netherlands
Taebaek Casino Resort, Kangwon Do	Korea
Trinity Pointe Resort & Casino	Cairns, Australia
Tropicana Atlantic City Casino & Resort Interior Renovation (through partial Schematic Design)	Atlantic City, New Jersey
Tropicana Las Vegas Casino Resort	Las Vegas, Nevada
Umnini Casino, Durban	South Africa
William and Punch Resort & Casino	St. Croix, USVI



Masquerade at Harrah's New Orleans
New Orleans, Louisiana

Regency Casino - Thessaloniki
Thessaloniki, Greece

Spa Resort Casino
Palm Springs, California

** Includes Theater/Showroom*

CONTACT INFORMATION

HONOLULU

700 Bishop Street, #1800

Honolulu, HI 96813 USA

Tel +1 (808) 521-8888

Fax +1 (808) 521-3888

IRVINE

8001 Irvine Center Drive

Suite 500

Irvine, CA 92618 USA

Tel +1 (949) 574-8500

Fax +1 (949) 574-8550

LONDON

Boston House

36-38 Fitzroy Square

London, W1T 6EY

United Kingdom

Tel +44 (0) 20-7906-6600

Fax +44 (0) 20-7906-6660

NEW YORK

75 Spring Street, Suite 700

New York, NY 10012 USA

Tel +1 (917) 847-6471

Fax +1 (949) 574-8550

SINGAPORE

Utraco Greentech Building

8 Commonwealth Lane #02-03

Singapore 149555

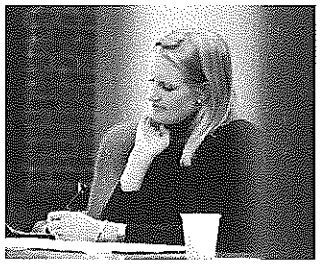
Tel +65 6227-2618

Fax +65 6227-0650

WATG Wimberly INTERIORS

Company Overview

Vanderweil Engineers



About Us

Vanderweil Engineers is a mechanical, electrical, plumbing, technology services, and power engineering firm dedicated to providing value-added services. As seen in the listing below, our 420 person staff has expertise in many areas. We are committed to developing customized and innovative solutions.

Founded in 1950, Vanderweil is a company that values its clients, its employees and the environment - and we have built our practice accordingly. To enable us to provide personalized services, we have organized the firm around a series of specialty groups, each focused on a particular area of expertise. This allows us to create an experienced and responsive engineering team for each project. We try to involve young engineers in our projects, working closely with our senior engineers - a combination that provides energy, enthusiasm, and experience. Our portfolio includes projects of all types and sizes.

Over the last decade, Vanderweil has designed MEP systems for buildings of all types and central plants. Our buildings have incorporated many sustainability provisions, and over 100 have obtained LEED® certification. The firm is an active participant in the AIA 2030 Commitment. We use Revit MEP/Navisworks as our BIM platform, and a variety of software for project management, energy modeling, computational fluid dynamics, pipe stress analysis, transmission tower foundation design, and other analytical work.

Services

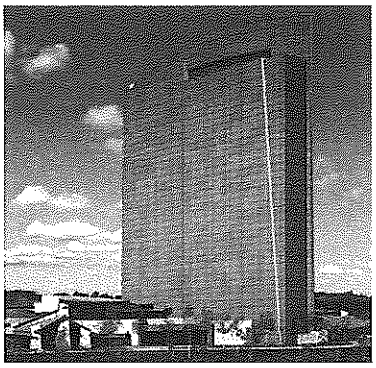
- **Building Services Engineering**
  - HVAC
  - Plumbing
  - Fire Protection
  - Electrical
  - Energy Management
- **Central Plants**
  - Steam & HT HW Plants
  - Chiller Plants
  - Cogeneration
  - Thermal Distribution
  - District Energy Plants
- **Building Performance Simulation**
  - Energy Analysis
  - Solar Analysis
  - CFD Analysis
  - BIM Integration
- **Transmission & Distribution Engineering**
  - Transmission Line Engineering & Design to 765 kV
  - Distribution and Sub-transmission Line Engineering & Design 4 kV to 69 kV
  - Substation Engineering & Design to 345 kV AIS & GIS
- **Life Support Systems**
  - LSS for Aquariums, Zoos, and Marine Research Laboratories
  - Facilities Assessments / Energy Audits
  - Plant Upgrades
  - Denitrification
  - Disinfection
  - Protein Skimming
  - Synthetic Sea Water
- **Commissioning**
  - Whole Building Cx
  - Retro-Cx Activities
  - Comprehensive System Integration
  - Operating Procedures
  - Cx Design Review
- **Technology Services**
  - System Consulting & Needs Assessment
  - Structured Cabling Systems
  - Security Systems
  - Access Control
  - Intrusion Detection + CCTV
  - Audiovisual Systems

Marina Bay Sands
Singapore

Cotai Strip Parcel 7&8, Macau, SAR
Project is an approximately 11 million sf, 6,000 key hotel and casino resort located on two parcels of land. Parcels 7&8 include two main hotel towers of 3,000 rooms each with two residential components within. Additionally the project has two theaters, a 1.5 million sf meeting/convention center complex, 800,000 sf of retail shopping, and a large gaming facility.

Marina Bay Sands, Singapore
Design of a new 9.5 million sf Marina Bay Sands complex. The main features of the project include three (3) 57-story hotel towers, totaling 3,000 guest rooms connected at the top by a three acre rooftop sky garden that includes swimming pools, restaurants, and a spa. The project also includes a 220,000 Arts/Science museum as its icon, 800,000 sf of retail space, 275,000 sf casino, an ice skating rink, a 2.5 million sf state-of-the-art expo/convention center and meeting complex, two 2,000-seat theaters, and 1.4 million sf of underground parking.

Mohegan Sun, Earth Expansion, Uncasville, CT
This new 1.3 million sf, 42-story podium and hotel complex for the Mohegan Tribe features a new 1,000-room hotel, three major restaurants, retail space, banquet meeting rooms, back of house areas, and valet and garage parking.



Mohegan Sun, Earth Expansion
Uncasville, CT

Sands Casino Resort Bethlehem, Bethlehem, PA
Engineering design services provided for the development of a new hotel/casino and entertainment venue totaling 2.4 million sf. The project features include a 300-room hotel with pools, 250,000 sf of casino and gaming space, 250,000 sf of retail and restaurant space, 25,000 sf of expo/convention space, and a one million sf parking structure.

Santa Fe Station, North Expansion, Las Vegas, NV
This expansion project consists of a new two-story addition to the existing complex comprised of gaming space and conferencing. Vanderweil provided engineering services for both the core & shell and interior fit-out, as well as the central plant expansion.

Showboat at Riversouth, St. Louis, MO
A 70,000 sf, three-story floating pavilion for gaming and back-of-house office space, and a 3-story, 36,000 sf floating vessel casino.

Sands Casino Resort Bethlehem
Bethlehem, PA

Showboat Casino and Hotel, Central Utility Plant, Atlantic City, NJ
Renovation and expansion of the central chiller and boiler plants to accommodate the addition of 284 rooms, 15,000 sf of gaming space and 20,000 sf of office space.

Showboat Casino and Hotel, Due Diligence, Las Vegas, NV
A due diligence report for MEP upgrades to the casino.

Showboat Casino and Hotel, Restaurant Lobby, Atlantic City, NJ
A renovation of the restaurant lobby's electrical and fire protection systems including specialty lighting, a recirculating water fountain display, fire alarm modifications and fire protection relocations.

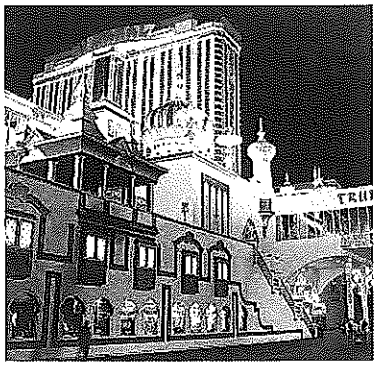
Showboat Casino and Hotel
Atlantic City, NJ

Showboat Casino and Hotel, Steam Central Utility Plant, Atlantic City, NJ
Engineering and construction documents were provided for the installation of a steam central utility plant consisting of a 70,000 lb/hr, 125 psig steam generation system with ancillary equipment including deaerators, condensate, and boiler feed systems.

Showboat Casino and Hotel, Time and Attendance System, Atlantic City, NJ
A fitup involving planning and specification of a time and attendance system, and installation of over 60 time clocks interconnected by over 80,000 sf of communication cable, service hubs, and power supplies.

Showboat Casino and Hotel, Tower #3, Atlantic City, NJ
An analysis of the capacities of the existing MEP systems to determine the impact of a casino expansion and 300-room addition on the central plant, and the feasibility of a new 500-room, 23-story tower.

Showboat Mardi Gras Casino, East Chicago, IN
This new 90,000 sf gaming vessel is moored to a 110,000 sf pavilion with restaurants, food and beverage preparation areas, office and casino support space, and housekeeping, plus an attached 1,500-car parking garage.



Trump Taj Mahal Casino Resort
Atlantic City, NJ

Tropicana Casino, Atlantic City, NJ
A study reviewing the existing chilled water system capacity in relation to present and future loads, including those generated by a new 600-room tower. The study addressed the performance of the existing systems and their capacities as well as providing options and recommendations for expansion and/or replacement. In addition, schematic design, construction documentation, and construction administration services were provided for a temporary direct fired gas absorption chiller and cooling tower.

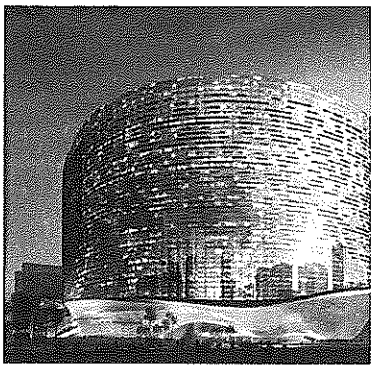
Trump Taj Mahal Casino Resort, Atlantic City, NJ
A new 63,000 sf casino forming part of the existing resort containing 2,400 slot machines, service bars, two expanded entrances, and one new entrance.

Trump Taj Mahal Casino Resort, Restaurant, Atlantic City, NJ
A new 25,000 sf sports theme restaurant and entertainment facility serving the casino resort. The project was fast-tracked.

Venetian Resort Hotel Casino, The Palazzo
Las Vegas, NV

Trump World Fair Casino, Atlantic City, NJ
Renovation of the 22-story high-rise hotel tower bringing it into compliance with current building codes.

Venetian Resort Hotel Casino, The Palazzo, Las Vegas, NV
Design for 7.5 million sf of gaming and hospitality space. The project includes a 50-story, 3,000-room hotel with a private concierge service, hospitality suites, villas and a Presidential wing, a two-story podium with gaming, 310,000 sf of retail space, restaurants, back-of-house services, a performance theater and a 4,000-car underground parking garage. This building achieved LEED®-NC Silver certification. Sustainable initiatives included reducing lighting, photovoltaic array, water conserving fixtures, and solar thermal panels.



Cotai Strip Parcel 7&8
Macau, SAR

Baltimore Convention Center Headquarters Hotel, Baltimore, MD
This new 866,000 sf, 750-room luxury hotel serves as the headquarters hotel for the new Baltimore Convention Center and is situated immediately adjacent to Oriole Park at Camden Yards and the historic Camden Train Station. The program consists of full service food and beverage facilities, ballrooms, meeting rooms, kitchens, health club, retail facilities, pre-function rooms, and a four-level parking garage. This project was completed through Design Development Service for turnover to a Design Builder.

Boston Park Plaza, Boston, MA
The project consisted of converting the HVAC system for this 1,000 guest room hotel from a combination fan coil unit/induction unit system to a one hundred percent fan coil unit system. Each guest room fan coil unit contains a hot water coil for heating and a chilled water coil for controls provided to allow for simultaneous heating or cooling in any of the rooms throughout the seasons.

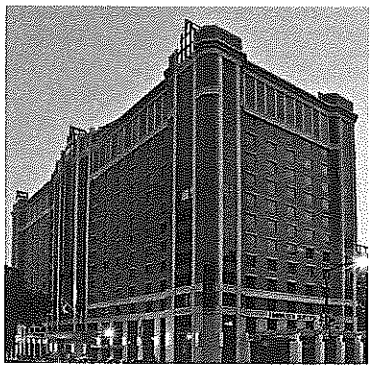
Castle Harbour Resort, Tucker's Town, Bermuda
Engineering master planning and schematic design services for the redevelopment of this existing golf resort site. The project programming included "cottage style" guest rooms, luxury "time share" units, golf club, beach club - 5,000 sf, staff dormitories redevelopment, golf wing units - townhouses and flats, Ships Hill - luxury homes and townhouses, and retail village and spa.

Crosstown Center
Boston, MA

Copley Plaza Hotel, Boston, MA
Renovation of 350 rooms including new fan coil units, infrastructure piping changes, and upgraded electrical distribution.

Cotai Strip Parcel 7&8, Macau, SAR
Project is an approximately 11 million sf, 6,000 key hotel and casino resort located on two parcels of land. Parcels 7&8 include two main hotel towers of 3,000 rooms each with two residential components within. Additionally the project has two theaters, a 1.5 million sf meeting/convention center complex, 800,000 sf of retail shopping, and a large gaming facility.

Crosstown Center, Boston, MA
Multi-use development consisting of a 175-room Hampton Inn & Suites, 21,500 sf of retail, restaurant and commercial space, and a 650-space garage.



Embassy Suites
Washington, DC

Doral Arrowwood, Corporate Training and Data Center, Rye Brook, NY
A 150,000 sf conference center addition and a 50,000 sf hotel addition were added to the existing 350,000 sf conference center and hotel. The project included the design of a new utility plant with centrifugal chillers and fire tube boilers as well as a new electrical service and emergency generator.

Embassy Suites, Providence, RI
A new $40 million, 300-room hotel with a 12-story atrium, retail, restaurants and underground parking.

Hilton Baltimore BWI Airport Hotel
Baltimore, MD

Embassy Suites, Washington, DC
A new 14-story addition provides 385 two-room guest suites to this 400,000 sf four-star hotel located in the downtown area. The hotel's lobby is the lowest level of a 6-story atrium, and contains several water features including a 40-foot waterfall. The facility includes a full-service kitchen and restaurant, 6,700 sf of meeting/ conferencing rooms, private dining space, a presidential suite, office space, and four below-ground parking levels.

Five Star Hotel, Mosul, Iraq
A nine-story, 300-room international luxury hotel including an atrium, restaurants, greenhouses, health and sports facilities, a bomb shelter, function halls, and ballrooms.

Guest Quarters Suites Hotel, Boston, MA
A 15-story hotel with a full atrium, 310 executive suites, offices, function areas, a kitchen, garage and indoor pool.

Hilton Baltimore BWI Airport Hotel, Baltimore, MD
Provided full mechanical, electrical, plumbing, and fire protection engineering design services for this 11-story, 250,000 sf, 280 deluxe guest rooms and suites, including three Executive Level Suites and one Presidential Suite. The hotel features a full service kitchen and upscale dining restaurant, ballroom, meeting rooms, 12,000 sf of flexible function space, indoor heated pool and whirlpool, state-of-the-art fitness center and underground parking.

The Jefferson Hotel
Washington, DC

Hilton Garden Inn Renovation, Arlington, VA
Renovations to this 189 room hotel located in Arlington, Virginia, including updated entry lobby, new fitness center, upgraded dining facility, new ADA compliant guest rooms and finish and fixture improvements throughout the facility.

Hilton Hotel and Conference Center, Norfolk, VA
Schematic design services were provided for the development of this new hotel and conference center. The project programming included a 235 room hotel totaling 300,000 sf comprised of retail space, main lobby, meeting and ballroom space, and a pool. The plans also included 235,000 sf of parking.

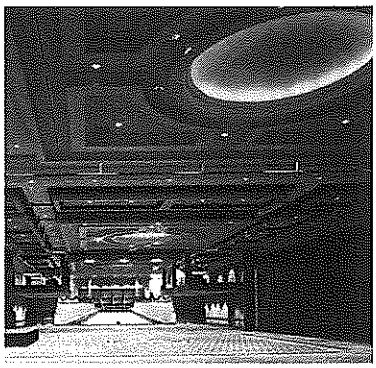
Hilton Vista, Liberty Center, Pittsburgh, PA
Design of mechanical and electrical systems for a 620-room convention hotel, incorporating a swimming pool, health club, ballroom, function rooms and restaurants.

Marina Bay Sands
Singapore

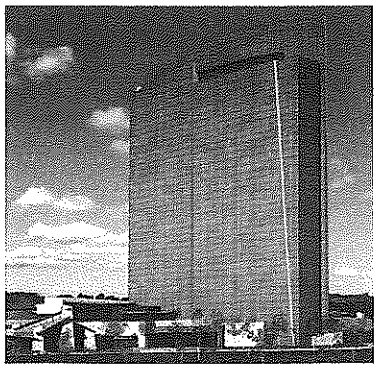
Hyatt Place Baltimore Hotel, Baltimore, MD
New 8-story, hotel with 205 guestrooms, retail space and a parking garage. The hotel features a lounge, café, meeting space, housekeeping facilities, a fitness center, locker rooms, and a pool. Provided energy recovery units (air cooled) for guestroom and public/shared space ventilation.

Hyatt Regency, Guestroom and Public Areas Renovation, Princeton, NJ
Renovation of 339 guest rooms and public corridors including lighting, power and plumbing upgrades. Public area upgrades include renovations to lobby, atrium, restaurant, bar, comedy club, ballroom, conference rooms and all pre-function spaces.

Marriott Renaissance Boston
Boston, MA



Marriott Wardman Park Hotel
Washington, DC



Mohegan Sun, Earth Expansion
Uncasville, CT

The Jefferson Hotel, Washington, DC
Historic fitup renovation of a 9-story 89,500 beaux-arts brick hotel. The renovation encompasses all 99 guestrooms, including 21 suites, and all public spaces – a new fine dining restaurant that is surrounded by hand-painted scenes from Monticello, two "Jefferson Cabinet" meeting rooms, an exclusive spa, and a 24-hour well-equipped fitness room.

Marina Bay Sands, Singapore
Design of a new 9.5 million sf Marina Bay Sands complex. The main features of the project include three (3) 57-story hotel towers, totaling 3,000 guest rooms connected at the top by a three acre rooftop sky garden that includes swimming pools, restaurants, and a spa. The project also includes a 220,000 Arts/Science museum as its icon, 800,000 sf of retail space, 275,000 sf casino, an ice skating rink, a 2.5 million sf state-of-the-art expo/convention center and meeting complex, two 2,000-seat theaters, and 1.4 million sf of underground parking.

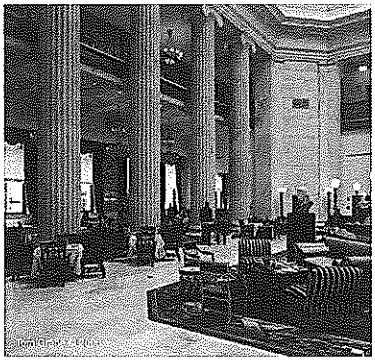
Marriott Hotel at Dulles Airport, Chantilly, VA
Survey, design and renovation of a 400-room hotel. The scope of work included increasing ventilation in all four buildings, replacing the hot water recirculation system in two of the buildings, and increasing the number of electrical circuits in all four buildings to meet current Marriott standards. The MEP renovation work was coordinated with the room finishes upgrade work, and was done in a phased manner, building by building.

Marriott Renaissance Boston Waterfront Hotel, Boston, MA
Located near the new Boston Convention and Exhibition Center, this new 22-story, 390,000 sf waterfront hotel was designed to Marriott Renaissance Standards. This hotel includes 470 guest rooms, 10,000 sf of ballroom space, 3,500 sf of junior ballroom, 8,000 sf of meeting space, 5,500 sf restaurant and bar, and a 3,500 sf recreation center including an indoor pool.

Marriott Residence Inn, Washington, DC
Transformation of a 240,000 sf office building into hotel space for Marriott. The new mechanical systems included perimeter, vertical water source heat pumps throughout with floor-by-floor direct expansion units providing ventilation to the corridors. The project also included the renovation of approximately 60,000 sf of below-grade parking.

Marriott Wardman Park Hotel, Washington, DC
This vintage building, originally opened in 1918, is a 1,324 room hotel and the largest convention hotel in the Washington, DC, area. The first stage of the $38 million phased renovation was to provide a face-lift to approximately 22,000 sf of ballroom space, over 100,000 sf of exhibit halls, state suites, pub, kitchen, health club, and other meeting room areas, as well as interior renovations to the historic Wardman Tower. The fast track project required complete MEP/FP construction drawings in four months.

Melrose Hotel, Washington, DC
Completed a renovation of 250-plus rooms and public spaces in a full-service eight-story, four-star hotel in downtown Washington, DC. All rooms were completely renovated, along with the lobby area, bar, restaurant, and meeting rooms.



Ritz Carlton Hotel
Philadelphia, PA

Mohegan Sun, Earth Expansion, Uncasville, CT
This new 1.3 million sf, 42-story podium and hotel complex for the Mohegan Tribe features a new 1,000-room hotel, three major restaurants, retail space, banquet meeting rooms, back of house areas, and valet and garage parking.

Nassau Inn, Renovation and Addition, Princeton, NJ
MEP design was provided for the renovations of the Colonial Wing's 70 guest rooms and the Prince William Ballroom. The design included a new 6-story addition with 50 guest rooms/suites, ballroom, commercial catering kitchen, retail shops, new fitness center, meeting and banquet rooms, and offices. The addition is designed for LEED®-NC Silver certification.

The Reefs, Southampton, Bermuda
This project included the design and construction of nineteen new fractional-ownership luxury residential units and the renovation of existing hotel core areas. The residential units are two- and three-bedroom units with kitchens and bathrooms. The renovated core areas include the new hotel kitchen, spa, fitness center, pool and club room. The area of new construction and renovation totals approximately 70,000 sf.

Salamander Resort & Spa
Middleburg, VA

Ritz Carlton Hotel, Philadelphia, PA
Conversion of a turn-of-the-century landmark office building into a hotel. The 285,000 sf, thirty-floor historic building included renovation of chilled water systems, replacement of house systems and switchgear equipment installation. Additional renovations included a new fire pump, standpipes and risers, as well as the design of a new sprinkler distribution system.

Salamander Resort & Spa, Middleburg, VA
A 195,000 sf, five-star resort and hotel facility that includes 168 hotel guest rooms, a spa, fitness center, indoor and outdoor pool, cooking studio, conference center, equestrian center and restaurant. The resort was designed for LEED®-NC Silver certification.

Sands Casino Resort Bethlehem, Bethlehem, PA
Engineering design services provided for the development of a new hotel/casino and entertainment venue totaling 2.4 million sf. The project features include a 300-room hotel with pools, 250,000 sf of casino and gaming space, 250,000 sf of retail and restaurant space, 25,000 sf of expo/convention space, and a one million sf parking structure.

Sands Casino Resort Bethlehem
Bethlehem, PA

Sheraton 4-Points Hotel, Philadelphia Airport, Philadelphia, PA
Project consists of upgrades and renovations to public areas of the hotel including the restaurant, bar, kitchen, conference rooms, fitness center and lobby areas of the hotel. It also includes lighting and toilet upgrades of all guest rooms in the hotel to new corporate standards.

Sheraton Suites Hotel, Philadelphia Airport, Philadelphia, PA
Project consists of upgrades and renovations to public areas of the hotel including the restaurant, bar, kitchen, conference rooms, fitness center and lobby areas of the hotel. Renovations were done to the indoor pool area as well including new showers and a new dehumidification unit. Project also includes lighting and toilet upgrades of all guest rooms in the hotel to new corporate standards.

Venetian Resort Hotel Casino, The Palazzo
Las Vegas, NV

Showboat Casino and Hotel, Atlantic City, NJ
Renovation and expansion of the central chiller and boiler plants to accommodate the addition of 284 rooms, 15,000 sf of gaming space and 20,000 sf of office space.

Sonesta Hotel, Cambridge, MA
Provided design services for a 12-story addition, consisting of a new 200-room guest tower on top of an expanded podium, including a basement, ballrooms, meeting rooms, offices, a kitchen, restaurant, and parking for 190 cars.

Sonesta Hotel, Philadelphia Crowne Plaza Conversion, Philadelphia, PA
Renovation of this 270,000 sf, 25-story building included 445 guest rooms, suites, club lounge, board rooms, hospitality suites, corridors, reception, coffee bar, concierge, seating areas, new entry canopy, main ballroom, junior ballroom, and various meeting rooms.

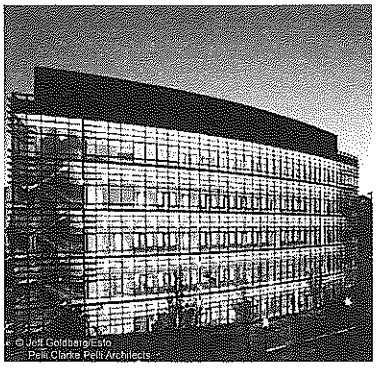
Trump World Fair Casino, Atlantic City, NJ
Renovation of the 22-story high-rise hotel tower bringing it into compliance with current building codes.

Venetian Resort Hotel Casino, The Venezia
Las Vegas, NV

Venetian Resort Hotel Casino, The Palazzo, Las Vegas, NV
Design for 7.5 million sf of gaming and hospitality space. The project includes a 50-story, 3,000-room hotel with a private concierge service, hospitality suites, villas and a Presidential wing, a two-story podium with gaming, 310,000 sf of retail space, restaurants, back-of-house services, a performance theater and a 4,000-car underground parking garage. This building achieved LEED®-NC Silver certification. Sustainable initiatives included reducing lighting, photovoltaic array, water conserving fixtures, and solar thermal panels.

Venetian Resort Hotel Casino, The Venezia, Las Vegas, NV
Provided mechanical, plumbing and hydraulic pool design for the Phase 1A expansion to the Venetian Resort Hotel Casino. Phase 1 consisted of 3,000 rooms, retail, gaming and restaurants totaling 6 million sf. This project adds 1,000 rooms on top of the existing south parking garage. The hotel is 14 stories high and approximately 1,100,000 sf, which includes a hotel check-in desk, lobby, retail, housekeeping, back-of-house services, a wedding chapel, pools and spas, a 350-seat restaurant, kitchen and room service kitchen.

Boston Children's Museum
Boston, MA
LEED®-NC Gold Certified



Yale University, Malone Engineering Research Building, New Haven, CT
LEED®-NC Gold Certified

The Palazzo, Venetian Resort Hotel Casino, Las Vegas, NV
LEED®-NC Silver Certified

LEED® Design

As a firm, we believe that green buildings result from proper application of fundamentals combined with innovation and an effective delivery process. Vanderweil's Green Integration Group contributes to each of these areas: integrating the team, the process for evaluating and later implementing strategies, the tools that may be used for production and analysis, and project goals. We incorporate sustainability into all of our projects by seeking opportunities for integrated design. We help the architect in building siting and envelope design, and in developing internal MEP pathways conducive to high performance systems. Passive strategies such as natural ventilation and day lighting, solar thermal and PV, rainwater harvesting and water recycling are all part of our design considerations.

LEED® Consulting

Vanderweil has an active practice in advising and guiding owners and design teams through the LEED® process. In this role, we help develop the initial LEED® model and objectives, and we oversee, consult and guide the owner/A/E/ Contractor team through the entire process, until certification is obtained.

Commissioning

It is important that sustainable design intent is carried through in practice. This requires that the operation of HVAC, lighting controls, domestic hot water, and water conservation systems be systematically validated in the field, prior to occupancy. We offer commissioning services to accomplish this, on our projects and projects designed by others. Several of our engineers are certified by the Association of Energy Engineers as Certified Building Commissioning Professionals.

Green Community

Vanderweil Engineers has been a corporate member of the United States Green Building Council since 1999. We support and maintain leadership roles in the Labs 21 Partnership Program, the North East Sustainable Energy Association, and regional chapters of the USGBC. We have over 100 LEED® Accredited Professionals and established a Green Integration Group that routinely meets with our project teams to exchange ideas on sustainability for projects under design. We have extensive experience with LEED® with over 100 LEED certified projects that include platinum, gold and silver rated buildings.

Approach

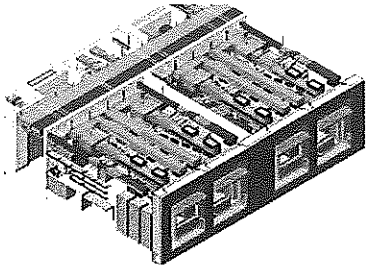
Our approach to sustainable design is characterized by:

- **Integrated Design:** The building and its system operates as a whole, and must be conceived and operated as such. Consequently, we have developed a methodology to import the architects' earliest design sketches directly into our modeling software. We use energy modeling to help architects enhance natural lighting and optimize building configuration and envelope characteristics to reduce HVAC and lighting loads. We integrate our designs with those of the architect in order to minimize the energy required to provide the HVAC and lighting. We are now using Revit in full swing to help develop coordinated integrated MEP systems in 3D.

- **Baseline Green Design:** On every project, we incorporate a baseline of proven sustainable strategies that create value for all clients and serve as a foundation for those seeking further levels of performance.

Revit/BIM Overview

Vanderweil Engineers



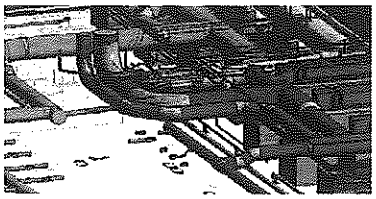
Harvard Fairchild Lab - MEP systems retrofit

Leadership

Vanderweil has been a leader in the development of BIM and its application to projects. For many years we have worked directly with the software developers on beta testing product development issues and pushing enhancements in future versions. We have given presentations and classes to industry professionals including the Society of American Military Engineers and Autodesk University's International Conference, where participants from 18 countries enrolled in our class.

Experience

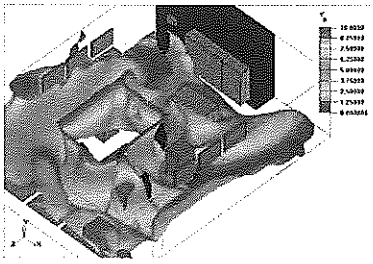
We have designed multiple BIM projects ranging from 5,000 sf up to 100,000 sf utilizing Autodesk Revit MEP. Additionally, Vanderweil has been involved in simultaneous, fast-track BIM projects requiring a parallel design and construction schedule. These provided us the opportunity to define a collaborative process for helping lead the design and owner team through a Revit/BIM project. In addition to the Revit platform, our team has experience using Autodesk Navisworks and Bentley MicroStation.



KAUST - mechanical room coordination

Value

Vanderweil uses BIM to help conceptualize building systems fit and coordination issues before construction starts. We use simulations and analytical models to optimize performance during the design phase when the cost of change is minimized.



Baystate Medical Center - CFD analysis

Integration

We have incorporated Building Information Modeling (BIM) into more than our drafting and document production; we use it in our design development and our engineering decision making processes. We have integrated Revit into our design work flow to allow the same models that are used for construction documents to be leveraged for simulations and calculations throughout the design development.

Sustainability

Vanderweil has successfully developed a methodology to work with architects to import their early conceptual building alternatives into our modeling software. This allows a rapid interactive process during development of sustainable building concepts based on energy and solar modeling. Additionally, with imported BIM models from an architect, we can perform modeling/analysis of the building design and provide feedback regarding design and building optimization.

Exhibit VIII.C.18.b Name, title, office address, email address, direct phone number and fax number of the Applicant's or, if applicable, the Manager's principal contact individual at each such firm

Applicant's and/or Manager's principal contact individual for the below entities:

Architects:
Wimberly Allison Tong & Goo (WATG)
8001 Irvine Center, Suite 500
Irvine, CA 92618
Mark M Yoshizaki, Vice President
(949) 574-8500
myoshizaki@watg.com

Architects/ Engineers:
Wendel WD Architecture, Engineering, Surveying & Landscape Architecture, PC
140 John James Audobon Parkway, Suite 201
Amherst, NY 14228
Mark D. Molnar, Project Sponsor
(716) 688-0766
mmolnar@wendelcompanies.com

Engineer:
Vanderweil Engineers, LLP
274 Summer Street
Boston, MA 02210
Chad Wisler, Managing Principal
(617) 423-7423
cwisler@vanderweil.com

Exhibit VIII.C.19 Submit a detailed construction budget showing the total costs of the Gaming Facility project including hard costs (e.g., land acquisition, site preparation, remediation of environmental conditions or hazardous materials; excavation, grading and earth works; foundation; erection of structures; materials and labor; equipment HVAC; electrical; plumbing; furnishings; landscaping; and site improvements, including infrastructure in direct relation to both construction and operations), construction soft costs (e.g., architectural, engineering and consulting fees; real estate commissions; recordation fees and transfer taxes; insurance; contingency reserve, etc.), financial and other expenses (e.g., financing fees; interest; legal; etc.) and pre-opening expenses (e.g., training;, pre-opening marketing; and initial working capital), and timing of such expenditures, together with a construction cash flow analysis

[redacted]

Exhibit VIII.C.20.a Submit a proposed timeline of construction of the proposed Gaming Facility that includes detailed stages of construction for opening phase of the Gaming Facility and non-gaming structures and all related infrastructure improvements. Include major events/milestones/deadlines, including design plans completed, construction bid award, construction financing received, site secured, start site mitigation/remediation if necessary, excavation, grading and earth works, start construction, approvals, infrastructure completion dates, permanent financing executed, certificate of occupancy, training start, building loading, system testing, dry runs, and the like, and the dates or deadlines associated therewith. Describe any proposed construction phasing plan, including the proposed sequence of any phases, whether any phases are dependent upon future events, and if so, clearly describe such future events, and the approximate dates of beginning and completion of each phase.

Attached as Exhibit VIII.C.20.a-1 is the proposed construction timeline.

Exhibit VIII. C.20.a. a proposed timeline of construction of the proposed Gaming Facility

The Grand Hudson Resort and Casino Project Schedule update 6.25.14

ID		Task Mode	Task Name	Duration	Start	Finish	Predecessors
1			**The Grand Hudson Resort and Casino / Project Schedule**	**656 days**	**Tue 7/1/14**	**Tue 1/3/17**	
2			**Pre-Construction**	**170 days**	**Tue 7/1/14**	**Mon 2/23/15**	
3			Schematic Design & Design Development Drawings	95 days	Tue 7/1/14	Mon 11/10/14	
4			Owner Approval of Design Development Drawings	5 days	Tue 11/11/14	Mon 11/17/14	3
5			Owner to Solicit & Select Construction Manager	35 days	Tue 7/1/14	Mon 8/18/14	
6			CM Pre Construction Services: Site Logistics, Scheduling, Design Workshops, Bid Package Development	119 days	Tue 8/19/14	Fri 1/30/15	5
7			Obtain building permits	35 days	Tue 8/19/14	Mon 10/6/14	5
8			100% CDs for Site Plan, Foundations & Underslab MEP Construction Drawings Approved	25 days	Tue 11/18/14	Mon 12/22/14	4
9			100% Construction Documents Remaining Approved	60 days	Tue 11/18/14	Mon 2/9/15	4
10			Review 100% Construction Documents	10 days	Tue 2/10/15	Mon 2/23/15	9
11			**Procurement**	**135 days**	**Tue 12/23/14**	**Mon 6/29/15**	
12			Site Plan, Foundation & Underslab MEP Notice to Bidders & Subcontract Awards	30 days	Tue 12/23/14	Mon 2/2/15	8
13			Gamining License Award	1 day	Fri 1/30/15	Fri 1/30/15	
14			Notice to Bidders & Subcontract Awards Remaining CDs	45 days	Tue 2/24/15	Mon 4/27/15	10
15			Pre Purchased Materials & Equipment	90 days	Tue 2/24/15	Mon 6/29/15	10
16			**Shop Drawings**	**120 days**	**Tue 2/3/15**	**Mon 7/20/15**	
17			A/E Review of Site Plan, Foundations & Underslab MEP Material & Equipment Data	12 days	Tue 2/3/15	Wed 2/18/15	12
18			A/E Review of Remaining Subcontractor Material & Equipment Data	60 days	Tue 4/28/15	Mon 7/20/15	14
19			**Site Prep & Utilities**	**86 days**	**Thu 2/19/15**	**Thu 6/18/15**	
20			Establish Project Control Benchmarks & Building Layout	6 days	Thu 2/19/15	Thu 2/26/15	17
21			Fence,clear,grub & rough grade site	20 days	Fri 2/27/15	Thu 3/26/15	20
22			Stone site access and temporary parking area / Retaining Wall	60 days	Fri 3/27/15	Thu 6/18/15	21
23			Set up site offices	6 days	Mon 4/13/15	Mon 4/20/15	
24			Install temporary power	10 days	Fri 3/27/15	Thu 4/9/15	21
25			Install temporary water service	10 days	Fri 3/27/15	Thu 4/9/15	21
26			Install storm drainage	25 days	Tue 4/21/15	Mon 5/25/15	23
27			Install exterior domestic water & fire protection service	25 days	Tue 4/21/15	Mon 5/25/15	23
28			Install site electrical service	25 days	Tue 4/21/15	Mon 5/25/15	23
29			**Casino & Hotel**	**460 days**	**Fri 2/27/15**	**Thu 12/1/16**	
30			**Foundations / Underslab Utilities / Slab on Grade**	**90 days**	**Fri 2/27/15**	**Thu 7/2/15**	
31			Excavate Form & Pour column piers,foundations & elevator pits	45 days	Fri 2/27/15	Thu 4/30/15	20
32			Install electrical under slab	45 days	Fri 4/10/15	Thu 6/11/15	24
33			Install plumbing under slab	45 days	Fri 4/10/15	Thu 6/11/15	24
34			Prep & Pour Slab on Grade	15 days	Fri 6/12/15	Thu 7/2/15	33
35			**Steel Erection**	**257 days**	**Tue 4/28/15**	**Wed 4/20/16**	
36			Steel Shop Drawing Process	25 days	Tue 4/28/15	Mon 6/1/15	14
37			Steel Fabrication	25 days	Tue 6/2/15	Mon 7/6/15	36
38			Erect Basement Level	12 days	Tue 7/7/15	Wed 7/22/15	37
39			Erect Casino Level	12 days	Thu 7/23/15	Fri 8/7/15	38
40			Erect Podium Level	12 days	Mon 8/10/15	Tue 8/25/15	39
41			Erect Guest Level 1	12 days	Wed 8/26/15	Thu 9/10/15	40
42			Erect Guest Level 2	12 days	Fri 9/11/15	Mon 9/28/15	41
43			Erect Guest Level 3	12 days	Tue 9/29/15	Wed 10/14/15	42

The Grand Hudson Resort and Casino Project Schedule update 6.25.14

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
44		Erect Guest Level 4	12 days	Thu 10/15/15	Fri 10/30/15	43
45		Erect Guest Level 5	12 days	Mon 11/2/15	Tue 11/17/15	44
46		Erect Guest Level 6	12 days	Wed 11/18/15	Thu 12/3/15	45
47		Erect Guest Level 7	12 days	Fri 12/4/15	Mon 12/21/15	46
48		Erect Guest Level 8	12 days	Tue 12/22/15	Wed 1/6/16	47
49		Erect Guest Level 9	12 days	Thu 1/7/16	Fri 1/22/16	48
50		Erect Guest Level 10	12 days	Mon 1/25/16	Tue 2/9/16	49
51		Erect Guest Level 11	12 days	Wed 2/10/16	Thu 2/25/16	50
52		Erect Guest Level 12	12 days	Fri 2/26/16	Mon 3/14/16	51
53		Erect Guest Level 13	12 days	Tue 3/15/16	Wed 3/30/16	52
54		Erect Roof	15 days	Thu 3/31/16	Wed 4/20/16	53
55		**Form and Pour Concrete**	**181 days**	**Fri 6/12/15**	**Fri 2/19/16**	
56		Prep & Pour Basement Level	15 days	Fri 6/12/15	Thu 7/2/15	33
57		Prep & Pour Casino Level	15 days	Wed 8/26/15	Tue 9/15/15	40
58		Prep & Pour Podium Level	15 days	Wed 9/16/15	Tue 10/6/15	57
59		Prep & Pour Guest Level 1	7 days	Wed 10/7/15	Thu 10/15/15	58
60		Prep & Pour Guest Level 2	7 days	Fri 10/16/15	Mon 10/26/15	59
61		Prep & Pour Guest Level 3	7 days	Tue 10/27/15	Wed 11/4/15	60
62		Prep & Pour Guest Level 4	7 days	Thu 11/5/15	Fri 11/13/15	61
63		Prep & Pour Guest Level 5	7 days	Mon 11/16/15	Tue 11/24/15	62
64		Prep & Pour Guest Level 6	7 days	Wed 11/25/15	Thu 12/3/15	63
65		Prep & Pour Guest Level 7	7 days	Fri 12/4/15	Mon 12/14/15	64
66		Prep & Pour Guest Level 8	7 days	Tue 12/15/15	Wed 12/23/15	65
67		Prep & Pour Guest Level 9	7 days	Thu 12/24/15	Fri 1/1/16	66
68		Prep & Pour Guest Level 10	7 days	Mon 1/4/16	Tue 1/12/16	67
69		Prep & Pour Guest Level 11	7 days	Wed 1/13/16	Thu 1/21/16	68
70		Prep & Pour Guest Level 12	7 days	Fri 1/22/16	Mon 2/1/16	69
71		Prep & Pour Guest Level 13	7 days	Tue 2/2/16	Wed 2/10/16	70
72		Prep & Pour Roof Level	7 days	Thu 2/11/16	Fri 2/19/16	71
73		**Exterior Precast Walls & Glazing**	**200 days**	**Wed 10/7/15**	**Tue 7/12/16**	
74		Basement Level	10 days	Wed 10/7/15	Tue 10/20/15	58
75		Casino Level	20 days	Wed 10/21/15	Tue 11/17/15	74
76		Podium Level	20 days	Wed 11/18/15	Tue 12/15/15	75
77		Guest Level 1	10 days	Wed 12/16/15	Tue 12/29/15	76
78		Guest Level 2	10 days	Wed 12/30/15	Tue 1/12/16	77
79		Guest Level 2	10 days	Wed 1/13/16	Tue 1/26/16	78
80		Guest Level 3	10 days	Wed 1/27/16	Tue 2/9/16	79
81		Guest Level 4	10 days	Wed 2/10/16	Tue 2/23/16	80
82		Guest Level 5	10 days	Wed 2/24/16	Tue 3/8/16	81
83		Guest Level 6	10 days	Wed 3/9/16	Tue 3/22/16	82
84		Guest Level 7	10 days	Wed 3/23/16	Tue 4/5/16	83
85		Guest Level 8	10 days	Wed 4/6/16	Tue 4/19/16	84
86		Guest Level 9	10 days	Wed 4/20/16	Tue 5/3/16	85
87		Guest Level 10	10 days	Wed 5/4/16	Tue 5/17/16	86

Exhibit VIII. C.20.a. a proposed timeline of construction of the proposed Gaming Facility

The Grand Hudson Resort and Casino Project Schedule update 6.25.14

ID		Task Mode	Task Name	Duration	Start	Finish	Predecessors
88			Guest Level 11	10 days	Wed 5/18/16	Tue 5/31/16	87
89			Guest Level 12	10 days	Wed 6/1/16	Tue 6/14/16	88
90			Guest Level 13	10 days	Wed 6/15/16	Tue 6/28/16	89
91			Roof Level	10 days	Wed 6/29/16	Tue 7/12/16	90
92			**Roofing**	**45 days**	**Mon 2/22/16**	**Fri 4/22/16**	
93			Standing Seam Metal Roofing Lower Levels	40 days	Mon 2/22/16	Fri 4/15/16	72
94			EPDM Roofing Lower Levels	25 days	Mon 2/22/16	Fri 3/25/16	72
95			Standing Seam Metal Roofing Hotel Tower	45 days	Mon 2/22/16	Fri 4/22/16	72
96			EPDM Roofing Hotel Tower	30 days	Mon 2/22/16	Fri 4/1/16	72
97			**Porte Cochere**	**100 days**	**Wed 12/30/15**	**Tue 5/17/16**	
98			Steel Framing & Roofing	60 days	Wed 12/30/15	Tue 3/22/16	77
99			Finishes	40 days	Wed 3/23/16	Tue 5/17/16	98
100			**Masonry Work**	**138 days**	**Fri 10/16/15**	**Tue 4/26/16**	
101			CMU at Elevator Shaft & Stair Towers	120 days	Fri 10/16/15	Thu 3/31/16	59
102			Exterior Stone Veneer	75 days	Wed 1/13/16	Tue 4/26/16	78
103			**Lower Levels**	**366 days**	**Fri 7/3/15**	**Fri 11/25/16**	
104			**Basement Level**	**200 days**	**Fri 7/3/15**	**Thu 4/7/16**	
105			MEP Plant & Generators	190 days	Fri 7/3/15	Thu 3/24/16	56
106			Loading Dock	100 days	Fri 7/3/15	Thu 11/19/15	56
107			Maintenance, Sally Port, Offices	160 days	Fri 7/3/15	Thu 2/11/16	56
108			IT & Surveillance Rooms	200 days	Fri 7/3/15	Thu 4/7/16	56
109			Office Finishes	40 days	Fri 2/12/16	Thu 4/7/16	107
110			**Casino Level**	**160 days**	**Mon 4/18/16**	**Fri 11/25/16**	
111			Center Bar	100 days	Mon 4/18/16	Fri 9/2/16	93
112			Raised Floor, Data & Surveillance Cabling	120 days	Mon 4/18/16	Fri 9/30/16	93
113			Restaurants, Buffet,Kitchen, Movie Theater, BOH	160 days	Mon 4/18/16	Fri 11/25/16	93
114			Table Games & Slot Machine Installations	38 days	Mon 10/3/16	Wed 11/23/16	112
115			**Podium Level**	**120 days**	**Mon 4/4/16**	**Fri 9/16/16**	
116			MEP Equipment	120 days	Mon 4/4/16	Fri 9/16/16	96
117			Pool, Spa, Fitness	120 days	Mon 4/4/16	Fri 9/16/16	96
118			Meeting and Ballroom	100 days	Mon 4/4/16	Fri 8/19/16	96
119			Restaurant	100 days	Mon 4/4/16	Fri 8/19/16	96
120			**Hotel Tower**	**192 days**	**Wed 3/9/16**	**Thu 12/1/16**	
121			**Guest Level 1**	**71 days**	**Wed 3/9/16**	**Wed 6/15/16**	
122			Partion Rough	10 days	Wed 3/9/16	Tue 3/22/16	82
123			Inwall MEP	15 days	Wed 3/23/16	Tue 4/12/16	122
124			Wall & Ceiling Finishes	26 days	Wed 4/13/16	Wed 5/18/16	123
125			Floor Finishes	10 days	Thu 5/19/16	Wed 6/1/16	124
126			Room Fixtures & Furnishings	10 days	Thu 6/2/16	Wed 6/15/16	125
127			**Guest Level 2**	**73 days**	**Wed 3/23/16**	**Fri 7/1/16**	
128			Partion Rough	10 days	Wed 3/23/16	Tue 4/5/16	122
129			Inwall MEP	15 days	Wed 4/6/16	Tue 4/26/16	128
130			Wall & Ceiling Finishes	26 days	Wed 4/27/16	Wed 6/1/16	129
131			Floor Finishes	10 days	Thu 6/2/16	Wed 6/15/16	130

The Grand Hudson Resort and Casino Project Schedule update 6.25.14

ID		Task Mode	Task Name	Duration	Start	Finish	Predecessors
132			Room Furnishings	12 days	Thu 6/16/16	Fri 7/1/16	131
133			**Guest Level 3**	**71 days**	**Wed 4/6/16**	**Wed 7/13/16**	
134			Partion Rough	10 days	Wed 4/6/16	Tue 4/19/16	128
135			Inwall MEP	15 days	Wed 4/20/16	Tue 5/10/16	134
136			Wall & Ceiling Finishes	26 days	Wed 5/11/16	Wed 6/15/16	135
137			Floor Finishes	10 days	Thu 6/16/16	Wed 6/29/16	136
138			Room Furnishings	10 days	Thu 6/30/16	Wed 7/13/16	137
139			**Guest Level 4**	**71 days**	**Wed 4/20/16**	**Wed 7/27/16**	
140			Partion Rough	10 days	Wed 4/20/16	Tue 5/3/16	134
141			Inwall MEP	15 days	Wed 5/4/16	Tue 5/24/16	140
142			Wall & Ceiling Finishes	26 days	Wed 5/25/16	Wed 6/29/16	141
143			Floor Finishes	10 days	Thu 6/30/16	Wed 7/13/16	142
144			Room Furnishings	10 days	Thu 7/14/16	Wed 7/27/16	143
145			**Guest Level 5**	**71 days**	**Wed 5/4/16**	**Wed 8/10/16**	
146			Partion Rough	10 days	Wed 5/4/16	Tue 5/17/16	140
147			Inwall MEP	15 days	Wed 5/18/16	Tue 6/7/16	146
148			Wall & Ceiling Finishes	26 days	Wed 6/8/16	Wed 7/13/16	147
149			Floor Finishes	10 days	Thu 7/14/16	Wed 7/27/16	148
150			Room Furnishings	10 days	Thu 7/28/16	Wed 8/10/16	149
151			**Guest Level 6**	**71 days**	**Wed 5/18/16**	**Wed 8/24/16**	
152			Partion Rough	10 days	Wed 5/18/16	Tue 5/31/16	146
153			Inwall MEP	15 days	Wed 6/1/16	Tue 6/21/16	152
154			Wall & Ceiling Finishes	26 days	Wed 6/22/16	Wed 7/27/16	153
155			Floor Finishes	10 days	Thu 7/28/16	Wed 8/10/16	154
156			Room Furnishings	10 days	Thu 8/11/16	Wed 8/24/16	155
157			**Guest Level 7**	**71 days**	**Wed 6/1/16**	**Wed 9/7/16**	
158			Partion Rough	10 days	Wed 6/1/16	Tue 6/14/16	152
159			Inwall MEP	15 days	Wed 6/15/16	Tue 7/5/16	158
160			Wall & Ceiling Finishes	26 days	Wed 7/6/16	Wed 8/10/16	159
161			Floor Finishes	10 days	Thu 8/11/16	Wed 8/24/16	160
162			Room Furnishings	10 days	Thu 8/25/16	Wed 9/7/16	161
163			**Guest Level 8**	**71 days**	**Wed 6/15/16**	**Wed 9/21/16**	
164			Partion Rough	10 days	Wed 6/15/16	Tue 6/28/16	158
165			Inwall MEP	15 days	Wed 6/29/16	Tue 7/19/16	164
166			Wall & Ceiling Finishes	26 days	Wed 7/20/16	Wed 8/24/16	165
167			Floor Finishes	10 days	Thu 8/25/16	Wed 9/7/16	166
168			Room Furnishings	10 days	Thu 9/8/16	Wed 9/21/16	167
169			**Guest Level 9**	**71 days**	**Wed 6/29/16**	**Wed 10/5/16**	
170			Partion Rough	10 days	Wed 6/29/16	Tue 7/12/16	164
171			Inwall MEP	15 days	Wed 7/13/16	Tue 8/2/16	170
172			Wall & Ceiling Finishes	26 days	Wed 8/3/16	Wed 9/7/16	171
173			Floor Finishes	10 days	Thu 9/8/16	Wed 9/21/16	172
174			Room Furnishings	10 days	Thu 9/22/16	Wed 10/5/16	173
175			**Guest Level 10**	**71 days**	**Wed 7/13/16**	**Wed 10/19/16**	

Exhibit VIII. C.20.a. a proposed timeline of construction of the proposed Gaming Facility

The Grand Hudson Resort and Casino Project Schedule update 6.25.14

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
176		Partion Rough	10 days	Wed 7/13/16	Tue 7/26/16	170
177		Inwall MEP	15 days	Wed 7/27/16	Tue 8/16/16	176
178		Wall & Ceiling Finishes	26 days	Wed 8/17/16	Wed 9/21/16	177
179		Floor Finishes	10 days	Thu 9/22/16	Wed 10/5/16	178
180		Room Furnishings	10 days	Thu 10/6/16	Wed 10/19/16	179
181		**Guest Level 11**	**71 days**	**Wed 7/27/16**	**Wed 11/2/16**	
182		Partion Rough	10 days	Wed 7/27/16	Tue 8/9/16	176
183		Inwall MEP	15 days	Wed 8/10/16	Tue 8/30/16	182
184		Wall & Ceiling Finishes	26 days	Wed 8/31/16	Wed 10/5/16	183
185		Floor Finishes	10 days	Thu 10/6/16	Wed 10/19/16	184
186		Room Furnishings	10 days	Thu 10/20/16	Wed 11/2/16	185
187		**Guest Level 12**	**71 days**	**Wed 8/10/16**	**Wed 11/16/16**	
188		Partion Rough	10 days	Wed 8/10/16	Tue 8/23/16	182
189		Inwall MEP	15 days	Wed 8/24/16	Tue 9/13/16	188
190		Wall & Ceiling Finishes	26 days	Wed 9/14/16	Wed 10/19/16	189
191		Floor Finishes	10 days	Thu 10/20/16	Wed 11/2/16	190
192		Room Furnishings	10 days	Thu 11/3/16	Wed 11/16/16	191
193		**Guest Level 13**	**71 days**	**Wed 8/24/16**	**Wed 11/30/16**	
194		Partion Rough	10 days	Wed 8/24/16	Tue 9/6/16	188
195		Inwall MEP	15 days	Wed 9/7/16	Tue 9/27/16	194
196		Wall & Ceiling Finishes	26 days	Wed 9/28/16	Wed 11/2/16	195
197		Floor Finishes	10 days	Thu 11/3/16	Wed 11/16/16	196
198		Room Furnishings	10 days	Thu 11/17/16	Wed 11/30/16	197
199		**Elevator**	**175 days**	**Fri 4/1/16**	**Thu 12/1/16**	
200		Install elevator equipment in shafts	165 days	Fri 4/1/16	Thu 11/17/16	101
201		Install equipment in mechanical room	90 days	Fri 4/1/16	Thu 8/4/16	101
202		Test and align doors and equipment	10 days	Fri 11/18/16	Thu 12/1/16	200
203		**Parking Ramp**	**345 days**	**Tue 4/28/15**	**Mon 8/22/16**	
204		Engineering & Design of Ramp	60 days	Tue 4/28/15	Mon 7/20/15	14
205		Submission of Design	10 days	Tue 7/21/15	Mon 8/3/15	204
206		A/E Review of Ramp	15 days	Tue 8/4/15	Mon 8/24/15	205
207		Fabrication & Delivery	90 days	Tue 8/25/15	Mon 12/28/15	206
208		Construction of the Ramp	170 days	Tue 12/29/15	Mon 8/22/16	207
209		**Event Center Construction**	**270 days**	**Tue 7/21/15**	**Mon 8/1/16**	
210		Foundations	30 days	Tue 7/21/15	Mon 8/31/15	18
211		Steel Erection	50 days	Tue 9/1/15	Mon 11/9/15	210
212		Concrete Pours	30 days	Tue 11/10/15	Mon 12/21/15	211
213		Exterior Walls & Glazing	40 days	Tue 12/22/15	Mon 2/15/16	212
214		Roof	20 days	Tue 2/16/16	Mon 3/14/16	213
215		Interior / MEP Installation	100 days	Tue 3/15/16	Mon 8/1/16	214
216		**Paving & Landscaping**	**120 days**	**Mon 4/4/16**	**Fri 9/16/16**	
217		Prepare Road & Parking Lot Base	60 days	Mon 4/4/16	Fri 6/24/16	96
218		Form & Pour Planters, Stairs, Sidewalks & Curbs	80 days	Mon 4/4/16	Fri 7/22/16	96
219		Pave Road and Parking Lots	20 days	Mon 7/25/16	Fri 8/19/16	218

Exhibit VIII. C.20.a. a proposed timeline of construction of the proposed Gaming Facility

The Grand Hudson Resort and Casino Project Schedule update 6.25.14

ID		Task Mode	Task Name	Duration	Start	Finish	Predecessors
220			Landscape & Install Plantings	30 days	Mon 7/25/16	Fri 9/2/16	218
221			Stripe Pavings	15 days	Mon 8/22/16	Fri 9/9/16	219
222			Install Exterior Signage	20 days	Mon 8/22/16	Fri 9/16/16	219
223			**Final Clean-up and Occupancy**	**27 days**	**Thu 11/24/16**	**Fri 12/30/16**	
224			Remove debris from building and do final clean-up	6 days	Thu 11/24/16	Thu 12/1/16	114
225			Substantial completion date / Temporary Certificate of Occupancy	1 day	Fri 12/2/16	Fri 12/2/16	224
226			Owner Staffing and Training	20 days	Mon 12/5/16	Fri 12/30/16	225
227			**Complete Final Inspections**	**22 days**	**Mon 12/5/16**	**Tue 1/3/17**	
228			Complete elevator inspection and certification	5 days	Mon 12/5/16	Fri 12/9/16	225
229			Perform architect's inspection	5 days	Mon 12/5/16	Fri 12/9/16	225
230			Perform local building agency inspection	5 days	Mon 12/5/16	Fri 12/9/16	225
231			Perform Fire Marshal's inspection	5 days	Mon 12/5/16	Fri 12/9/16	225
232			Complete punch list items from all inspections	5 days	Mon 12/12/16	Fri 12/16/16	231
233			Obtain certificate of occupancy	4 days	Mon 12/19/16	Thu 12/22/16	232
234			Issue final completion documents including warranties	6 days	Mon 12/19/16	Mon 12/26/16	232
235			Issue final request for payment	6 days	Tue 12/27/16	Tue 1/3/17	234

The Grand Hudson Resort & Casino Quarterly Project Billing

CONSTRUCTION	Last Half 2014	1st Qtr 2015	2nd Qtr 2015	3rd Qtr 2015	4th Qtr 2015	1st Qtr 2016	2nd Qtr 2016	3rd Qtr 2016	4th Qtr 2016	1st Qtr 2017	TOTALS
Construction Management Labor	$ 316,400	$ 460,200	$ 498,000	$ 487,000	$ 465,000	$ 450,000	$ 436,600	$ 431,400	$ 431,400	$ 198,700	$ 4,176,700
Const. Management Gen. Cond.	$ 71,300	$ 104,625	$ 126,775	$ 128,475	$ 128,775	$ 128,775	$ 128,775	$ 128,775	$ 128,775	$ 52,620	$ 1,127,670
General Conditions	$ -	$ 1,625,000	$ 2,975,000	$ 3,200,000	$ 3,050,000	$ 3,750,000	$ 2,625,000	$ 2,950,000	$ 3,750,000	$ 988,085	$ 24,913,085
Sitework / Landscaping	$ -	$ 2,500,000	$12,800,000	$11,450,000	$ 2,350,000	$ -	$ 850,000	$ 1,275,000	$ 630,000	$ -	$ 31,855,000
Concrete	$ -	$ -	$ 3,830,000	$ 6,060,000	$ 5,940,000	$ 5,940,000	$ 2,175,000	$ 600,000	$ -	$ -	$ 24,565,000
Masonry	$ -	$ -	$ 350,000	$ 715,000	$ 1,225,000	$ 1,069,750	$ 967,125	$ 450,000	$ -	$ -	$ 4,776,875
Steel & Metals	$ -	$ -	$ 5,416,000	$ 6,150,000	$ 7,750,000	$ 6,150,000	$ 5,289,000	$ 3,620,500	$ -	$ -	$ 34,377,500
Wood & Plastics	$ -	$ -	$ -	$ -	$ -	$ 135,000	$ 1,480,000	$ 3,030,000	$ 3,030,000	$ 910,000	$ 8,585,000
Thermal & Moisture	$ -	$ -	$ -	$ -	$ -	$ 3,550,000	$10,274,000	$ 4,968,000	$ -	$ -	$ 18,792,000
Doors & Windows	$ -	$ -	$ 95,000	$ 495,000	$ 495,000	$ 575,000	$ 1,381,800	$ 4,790,000	$ 5,290,000	$ 987,500	$ 14,109,300
Finishes	$ -	$ -	$ 105,000	$ 1,425,000	$ 2,775,000	$ 4,700,000	$ 5,400,000	$ 8,325,000	$ 9,710,000	$ 1,385,870	$ 33,825,870
Specialties	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 900,000	$ 870,000	$ 285,000	$ 2,055,000
Equipment	$ -	$ -	$ -	$ 125,000	$ 800,000	$ 1,125,000	$ 609,000	$ 351,000	$ 351,000	$ 117,000	$ 3,478,000
Furnishings	$ -	$ -	$ -	$ -	$ -	$ -	$ 650,000	$ 830,000	$ 1,480,000	$ 325,000	$ 3,085,000
Special Construction	$ -	$ -	$ -	$ -	$ 450,000	$ 1,560,000	$ 1,560,000	$ 1,947,000	$ 1,560,000	$ 520,000	$ 7,597,000
Conveying Devices	$ -	$ -	$ -	$ -	$ -	$ 725,000	$ 1,420,000	$ 3,750,000	$ 3,895,000	$ 450,000	$ 10,240,000
Fire Protection	$ -	$ -	$ 300,000	$ 1,225,000	$ 1,275,000	$ 1,150,000	$ 900,000	$ 1,350,000	$ 725,000	$ -	$ 6,925,000
Plumbing	$ -	$ 48,000	$ 1,775,000	$ 1,950,000	$ 1,950,000	$ 2,550,000	$ 2,550,000	$ 2,925,000	$ 2,050,000	$ 375,000	$ 16,173,000
HVAC	$ -	$ 825,000	$ 4,175,000	$ 5,559,000	$ 8,859,000	$ 8,859,000	$ 8,453,000	$ 5,855,000	$ 4,250,000	$ 875,000	$ 47,711,000
Electrical	$ -	$ 720,000	$ 4,030,000	$ 7,560,000	$ 7,560,000	$ 6,765,000	$ 7,255,000	$ 7,450,000	$ 5,512,000	$ 985,000	$ 47,837,000
Food Service Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ 750,000	$ 2,055,000	$ 2,055,000	$ 825,000	$ 5,485,000
Laundry Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,857,000	$ -	$ 1,857,000
Signage	$ -	$ -	$ -	$ -	$ -	$ -		$ 1,215,000	$ 1,155,000	$ -	$ 2,370,000
Theming	$ -	$ -	$ -	$ -	$ -	$ -	$ 550,000	$ 930,000	$ 660,000	$ -	$ 2,140,000
Winter Feature	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,702,000	$ -	$ 1,702,000
Parking Ramp	$ -	$ -	$ 5,800,000	$ 9,200,000	$ 9,300,000	$ 9,200,000	$ 9,150,000	$ 6,100,000	$ -	$ -	$ 48,750,000
Monthly Billing	$ 387,700	$ 6,283,825	$42,277,775	$55,749,475	$54,372,775	$58,382,525	$64,856,300	$ 66,026,675	$ 51,092,175	$ 9,079,775	$ 408,509,000
OWNER											
Construction Contingency	$ -	$ 3,552,000	$ 5,328,000	$ 5,328,000	$ 5,328,000	$ 5,328,000	$ 5,328,000	$ 5,328,000	$ 5,331,000	$ -	$ 40,851,000
Owner Contingency	$ -	$ 833,334	$ 1,250,001	$ 1,250,001	$ 1,250,001	$ 1,250,001	$ 1,250,001	$ 1,250,001	$ 1,250,001	$ 416,659	$ 10,000,000
Design-A/E Fees	$ 7,229,732	$ 3,172,299	$ 3,172,299	$ 3,172,299	$ 3,172,299	$ 3,172,299	$ 3,172,299	$ 3,172,299	$ 3,172,299	$ 2,114,866	$ 34,722,990
Other Soft Costs	$ 1,652,668	$ 752,001	$ 752,001	$ 752,001	$ 752,001	$ 752,001	$ 752,001	$ 752,001	$ 752,001	$ 501,334	$ 8,170,010
Legal	$ 650,000	$ 200,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 100,000	$ 2,000,000
FF&E	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 1,000,000	$ 10,000,000
Public Golf Course Partner	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Slot Machines	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,000,000	$ 21,310,000	$ 4,590,000	$ 45,900,000
Slot Bases & Stools	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 400,000	$ 450,500	$ 94,500	$ 945,000
Table Games & Chairs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,425,000	$ 1,500,000	$ 325,000	$ 3,250,000
Slot Data System	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 450,000	$ 450,000	$ 100,000	$ 1,000,000
WWTF Improvements	$ -	$ -	$ 1,000,000	$ 2,500,000	$ 2,000,000	$ -	$ -	$ -	$ -	$ -	$ 5,500,000
Fire, Police, EMT Improvements	$ -	$ 3,100,000	$ 500,000	$ 500,000	$ 500,000	$ -	$ -	$ -	$ -	$ -	$ 4,600,000
Youth Athletic Facility	$ -	$ -	$ 500,000	$ 750,000	$ 750,000	$ -	$ -	$ -	$ -	$ -	$ 2,000,000
Other		$ 1,000,000	$ 1,000,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,000,000
Site Acquisition	$ 650,000	$ 600,000	$ 450,000	$ 300,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,000,000
Filing Fees	$ 1,000,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,000,000
NYS Licensing Fee Post Award	$ -	$ 70,000,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 70,000,000
Minimum Const Deposit		$ 56,984,800									$ 56,984,800
IT & Slot Data License Fee	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 500,000	$ -	$ -	$ 500,000
IT Systems Hardware	$ -	$ -	$ -	$ -	$ 1,000,000	$ 1,000,000	$ -	$ -	$ -	$ -	$ 2,000,000
Slot Signage	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,000,000	$ 1,000,000	$ 2,000,000
Owner Décor	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,800,000	$ 1,200,000	$ -	$ -	$ 3,000,000
Uniforms & Small Ware	$ -	$ -	$ -	$ -	$ -	$ -	$ 250,000	$ 750,000	$ -	$ -	$ 1,000,000
Pre-Opening	$ -	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 300,000	$ 500,000	$ 750,000	$ 2,015,200	$ -	$ 4,065,200
Other	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,000		$ 2,000
Cage Cash	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,000,000	$ -	$ 10,000,000
Owner Monthly Billing	$11,182,400	$ 140,319,434	$14,227,301	$14,827,301	$15,027,301	$11,952,301	$16,202,301	$ 39,127,301	$ 50,383,001	$10,242,359	$ 323,491,000
Construction Monthly Billing	$ 387,700	$ 6,283,825	$42,277,775	$55,749,475	$54,372,775	$58,382,525	$64,856,300	$ 66,026,675	$ 51,092,175	$ 9,079,775	$ 408,509,000
Total Project Monthly Billing	$11,570,100	$ 146,603,259	$56,505,076	$70,576,776	$69,400,076	$70,334,826	$81,058,601	$ 105,153,976	$ 101,475,176	$19,322,134	$ 732,000,000

Application Fee	$ 1,000										
Licensing Fee		$ 70,000									
Minimum Const Dep		$ 56,985									
Remaining Costs	$ 10,570	$ 19,618	$ 56,505	$ 70,577	$ 69,400	$ 70,335	$ 81,059	$ 105,154	$ 101,475	$ 19,322	$ 732,000
Total Project Quartery (in 000's)	$ 11,570	$ 146,603	$ 56,505	$ 70,577	$ 69,400	$ 70,335	$ 81,059	$ 105,154	$ 101,475	$ 19,322	$ 732,000
(000's omitted)											
Equity Funding	$ 11,570	$ 146,603	$ 56,505	$ 70,577	$ 69,400	$ 11,345					$ 366,000
Bond Funding						$ 58,990	$ 81,059	$ 100,951			$ 241,000
Bank Funding								$ 4,203	$ 101,475	$ 19,322	$ 125,000

Exhibit VIII.C.20.b Description of Anticipated Street and Sidewalk Closures, Plans for Redirecting Traffic, Impacts on Existing Parking

The following streets would be closed and abandoned as part of the Grand Hudson Hotel and Casino project.

- World Trade Way from Aviation Avenue to Sue Kelly Avenue.
- Tozolli Avenue from World Trade Way to International Boulevard.
- Approximately 340 feet of Bill Larkin Drive.

During construction of the project, temporary lane and sidewalk closure may be required. These temporary closures will be coordinated with the agencies having jurisdiction over these affected streets and sidewalks. Jurisdictional agencies include the New York State Department of Transportation (NYSDOT) and the Town of New Windsor. Work zone traffic control would be provided in accordance with the provisions set forth in the MUTCD.

Although the Applicant has presented proposed areas for expansion, no plans currently exist for phasing the project. The Applicant intends to complete the entire facility presented here-in within twenty-four (24) months following the award of the license.

Exhibit VIII.C.20.c Commencement of Construction of the Gaming Facility

Exhibit VIII.C.20.c Submit an explanation as to how quickly after issuance of a License the Applicant would expect to commence construction of the Gaming Facility and explain conditions precedent to be satisfied prior to the Applicant being able to commence said construction.

The status of the Greenetrack project (SEQR complete, previous work completed for the NYIP project, and work presently being completed) will allow project/building construction to start almost immediately after the license is issued. Building permits have been issued (conditioned upon licensure) and the Stormwater Management Report for Site Demolition and Stabilization has been accepted. Once site plan approval is received (projected to be in September/ October) full building construction could begin.

Refer to Sub-Binder 2, binders 2 of 3 and 3 of 3 for documentation of SEQR results.

With the work completed to date, including the completion of the SEQR process, the Town has issued demolition permits to allow work to begin on the site. Attached to this Exhibit VIII.C.20.c is a copy of the ten Commercial Demolition permits issued June 24, 2014 to Greenetrack, Inc. covering the old Army Barracks at 1800 through 1818 Reed Street, Town of New Windsor.

The Town has approved the Stormwater Pollution Prevention Plan (SWPPP) for site demolition and stabilization and issued an MS4 SWPPP Acceptance Form on June 26, 2014. A Notice of Intent (NOI) has been filed with the New York State Department of Environmental Conservation, Division of Water for construction activity. Attached is a copy of the submitted NOI.

BUILDING PERMIT

The Town of New Windsor Building Department, County of Orange, State Of New York
hereby issues permit for project as described herein:

Permit No. **PA2014-414**

Permit Valid Until: **12/24/2015**

Issued Date: **6/24/2014**

Location of Property: **1800 Reed St**

Type of Permit **Commercial Demolition**

Tax Parcel ID: **91-1-14.2**

Fee: **$0.00**

Owner: **Town Of New Windsor,**
,
555 Union Ave
New Windsor, NY 12553

Applicant: **GREENTRACK, INC.**
ROBERT McLAUGHLIN, ESQ.
677 BROADWAY, SUITE 300

ALBANY, NY 12207

Description Of Work

DEMOLITION OF BUILDING # 1800

I am familiar with the Zoning/Building Ordinance(s) and the New York State Uniform Fire Prevention and Building Code requirements related to this permit and do hereby agree to abide by them. The information stated above is correct and accurate.

George A. Green

Signature Of Applicant

BUILDING PERMIT FEE NON-REFUNDABLE

A permit, under which no work has commenced within six (6) months after issuance, shall expire by limitation. Furthermore, a permit that no Certificate of Occupancy or Certificate of Compliance has been issued within eighteen (18) months after issuance shall expire by limitation. Under either circumstance a new building permit shall be secured before work can begin or be completed.

It is the responsibility of the Owner/Occupant and/or Contractor to comply with all applicable ordinances. Notification requests for inspection must be made at least 24 hours in advance to the number shown below. Voice mail requests for inspection will not be scheduled. YOU MUST HAVE YOUR BUILDING PERMIT NUMBER AVAILABLE when calling for any inspections or inquiries.

You must call for the following inspections:

1. CO OR CC - (845) 563-4618

Louis Krychear

Louis Krychear, Asst. Building Inspector

BUILDING PERMIT

The Town of New Windsor Building Department, County of Orange, State Of New York
hereby issues permit for project as described herein:

Permit No. **PA2014-415**

Permit Valid Until: **12/24/2015**

Issued Date: **6/24/2014**

Location of Property: **1802 Reed St**

Type of Permit **Commercial Demolition**

Tax Parcel ID: **91-1-14.2**

Fee: **$0.00**

Owner: **Town Of New Windsor,**
,
555 Union Ave
New Windsor, NY 12553

Applicant: **GREENTRACK, INC.**
ROBERT McLAUGHLIN, ESQ.
677 BROADWAY, SUITE 300

ALBANY, NY 12207

Description Of Work

DEMOLITION OF BUILDING # 1802

I am familiar with the Zoning/Building Ordinance(s) and the New York State Uniform Fire Prevention and Building Code requirements related to this permit and do hereby agree to abide by them. The information stated above is correct and accurate.

George A. Green

Signature Of Applicant

BUILDING PERMIT FEE NON-REFUNDABLE

A permit, under which no work has commenced within six (6) months after issuance, shall expire by limitation. Furthermore, a permit that no Certificate of Occupancy or Certificate of Compliance has been issued within eighteen (18) months after issuance shall expire by limitation. Under either circumstance a new building permit shall be secured before work can begin or be completed.

It is the responsibility of the Owner/Occupant and/or Contractor to comply with all applicable ordinances. Notification requests for inspection must be made at least 24 hours in advance to the number shown below. Voice mail requests for inspection will not be scheduled. YOU MUST HAVE YOUR BUILDING PERMIT NUMBER AVAILABLE when calling for any inspections or inquiries.

You must call for the following inspections:

1. CO OR CC - (845) 563-4618

Louis Krychear

Louis Krychear, Asst. Building Inspector

BUILDING PERMIT

The Town of New Windsor Building Department, County of Orange, State Of New York
hereby issues permit for project as described herein:

Permit No. **PA2014-416**

Permit Valid Until: **12/24/2015**

Issued Date: **6/24/2014**

Location of Property: **1804 Reed St**

Type of Permit **Commercial Demolition**

Tax Parcel ID: **91-1-14.2**

Fee: **$0.00**

Owner: **Town Of New Windsor,**
,
555 Union Ave
New Windsor, NY 12553

Applicant: **GREENTRACK, INC.**
ROBERT McLAUGHLIN, ESQ.
677 BROADWAY, SUITE 300

ALBANY, NY 12207

Description Of Work

DEMOLITION OF BUILDING # 1804

I am familiar with the Zoning/Building Ordinance(s) and the New York State Uniform Fire Prevention and Building Code requirements related to this permit and do hereby agree to abide by them. The information stated above is correct and accurate.

George A. Green

Signature Of Applicant

BUILDING PERMIT FEE NON-REFUNDABLE

A permit, under which no work has commenced within six (6) months after issuance, shall expire by limitation. Furthermore, a permit that no Certificate of Occupancy or Certificate of Compliance has been issued within eighteen (18) months after issuance shall expire by limitation. Under either circumstance a new building permit shall be secured before work can begin or be completed.

It is the responsibility of the Owner/Occupant and/or Contractor to comply with all applicable ordinances. Notification requests for inspection must be made at least 24 hours in advance to the number shown below. Voice mail requests for inspection will not be scheduled. YOU MUST HAVE YOUR BUILDING PERMIT NUMBER AVAILABLE when calling for any inspections or inquiries.

You must call for the following inspections:

1. CO OR CC - (845) 563-4618

Louis Krychear

Louis Krychear, Asst. Building Inspector

BUILDING PERMIT

The Town of New Windsor Building Department, County of Orange, State Of New York
hereby issues permit for project as described herein:

Permit No. **PA2014-417**

Permit Valid Until: **12/24/2015**

Issued Date: **6/24/2014**

Location of Property: **1806 Reed St**

Type of Permit **Commercial Demolition**

Tax Parcel ID: **91-1-14.2**

Fee: **$0.00**

Owner: **Town Of New Windsor,**
,
555 Union Ave
New Windsor, NY 12553

Applicant: **GREENTRACK, INC.**
ROBERT McLAUGHLIN, ESQ.
677 BROADWAY, SUITE 300

ALBANY, NY 12207

Description Of Work

DEMOLITION OF BUILDING # 1806

I am familiar with the Zoning/Building Ordinance(s) and the New York State Uniform Fire Prevention and Building Code requirements related to this permit and do hereby agree to abide by them. The information stated above is correct and accurate.

George A. Green

Signature Of Applicant

BUILDING PERMIT FEE NON-REFUNDABLE

A permit, under which no work has commenced within six (6) months after issuance, shall expire by limitation. Furthermore, a permit that no Certificate of Occupancy or Certificate of Compliance has been issued within eighteen (18) months after issuance shall expire by limitation. Under either circumstance a new building permit shall be secured before work can begin or be completed.

It is the responsibility of the Owner/Occupant and/or Contractor to comply with all applicable ordinances. Notification requests for inspection must be made at least 24 hours in advance to the number shown below. Voice mail requests for inspection will not be scheduled. YOU MUST HAVE YOUR BUILDING PERMIT NUMBER AVAILABLE when calling for any inspections or inquiries.

You must call for the following inspections:

1. CO OR CC - (845) 563-4618

Louis Krychear

Louis Krychear, Asst. Building Inspector

BUILDING PERMIT

The Town of New Windsor Building Department, County of Orange, State Of New York
hereby issues permit for project as described herein:

Permit No. **PA2014-418**

Permit Valid Until: **12/24/2015**

Issued Date: **6/24/2014**

Location of Property: **1808 Reed St**

Type of Permit **Commercial Demolition**

Tax Parcel ID: **91-1-14.2**

Fee: **$0.00**

Owner: **Town Of New Windsor,**
,
555 Union Ave
New Windsor, NY 12553

Applicant: **GREENTRACK, INC.**
ROBERT McLAUGHLIN, ESQ.
677 BROADWAY, SUITE 300

ALBANY, NY 12207

Description Of Work

DEMOLITION OF BUILDING # 1808

I am familiar with the Zoning/Building Ordinance(s) and the New York State Uniform Fire Prevention and Building Code requirements related to this permit and do hereby agree to abide by them. The information stated above is correct and accurate.

George A. Green

Signature Of Applicant

BUILDING PERMIT FEE NON-REFUNDABLE

A permit, under which no work has commenced within six (6) months after issuance, shall expire by limitation. Furthermore, a permit that no Certificate of Occupancy or Certificate of Compliance has been issued within eighteen (18) months after issuance shall expire by limitation. Under either circumstance a new building permit shall be secured before work can begin or be completed.

It is the responsibility of the Owner/Occupant and/or Contractor to comply with all applicable ordinances. Notification requests for inspection must be made at least 24 hours in advance to the number shown below. Voice mail requests for inspection will not be scheduled. YOU MUST HAVE YOUR BUILDING PERMIT NUMBER AVAILABLE when calling for any inspections or inquiries.

You must call for the following inspections:

1. CO OR CC - (845) 563-4618

Louis Krychear

Louis Krychear, Asst. Building Inspector

BUILDING PERMIT

The Town of New Windsor Building Department, County of Orange, State Of New York
hereby issues permit for project as described herein:

Permit No. **PA2014-419**

Permit Valid Until: **12/24/2015**

Issued Date: **6/24/2014**

Location of Property: **1810 Reed St**

Type of Permit **Commercial Demolition**

Tax Parcel ID: **91-1-14.2**

Fee: **$0.00**

Owner: **Town Of New Windsor,**
,
555 Union Ave
New Windsor, NY 12553

Applicant: **GREENTRACK, INC.**
ROBERT McLAUGHLIN, ESQ.
1810 REED STREET

NEW WINDSOR, NY 12553

Description Of Work

DEMOLITION OF BUILDING # 1810

I am familiar with the Zoning/Building Ordinance(s) and the New York State Uniform Fire Prevention and Building Code requirements related to this permit and do hereby agree to abide by them. The information stated above is correct and accurate.

George A. Green
Signature Of Applicant

BUILDING PERMIT FEE NON-REFUNDABLE

A permit, under which no work has commenced within six (6) months after issuance, shall expire by limitation. Furthermore, a permit that no Certificate of Occupancy or Certificate of Compliance has been issued within eighteen (18) months after issuance shall expire by limitation. Under either circumstance a new building permit shall be secured before work can begin or be completed.

It is the responsibility of the Owner/Occupant and/or Contractor to comply with all applicable ordinances. Notification requests for inspection must be made at least 24 hours in advance to the number shown below. Voice mail requests for inspection will not be scheduled. YOU MUST HAVE YOUR BUILDING PERMIT NUMBER AVAILABLE when calling for any inspections or inquiries.

You must call for the following inspections:

1. CO OR CC - (845) 563-4618

Louis J Krychear
Louis Krychear, Asst. Building Inspector

BUILDING PERMIT

The Town of New Windsor Building Department, County of Orange, State Of New York
hereby issues permit for project as described herein:

Permit No. **PA2014-420**

Permit Valid Until: **12/24/2015**

Issued Date: **6/24/2014**

Location of Property: **1812 Reed St**

Type of Permit **Commercial Demolition**

Tax Parcel ID: **91-1-14.2**

Fee: **$0.00**

Owner: **Town Of New Windsor,**
,
555 Union Ave
New Windsor, NY 12553

Applicant: **GREENTRACK, INC.**
ROBERT McLAUGHLIN, ESQ.
677 BROADWAY, SUITE 300

NEW WINDSOR, NY 12553

Description Of Work

DEMOLITION OF BUILDING # 1812

I am familiar with the Zoning/Building Ordinance(s) and the New York State Uniform Fire Prevention and Building Code requirements related to this permit and do hereby agree to abide by them. The information stated above is correct and accurate.

BUILDING PERMIT FEE NON-REFUNDABLE

George A. Green
Signature Of Applicant

A permit, under which no work has commenced within six (6) months after issuance, shall expire by limitation. Furthermore, a permit that no Certificate of Occupancy or Certificate of Compliance has been issued within eighteen (18) months after issuance shall expire by limitation. Under either circumstance a new building permit shall be secured before work can begin or be completed.

It is the responsibility of the Owner/Occupant and/or Contractor to comply with all applicable ordinances. Notification requests for inspection must be made at least 24 hours in advance to the number shown below. Voice mail requests for inspection will not be scheduled. YOU MUST HAVE YOUR BUILDING PERMIT NUMBER AVAILABLE when calling for any inspections or inquiries.

You must call for the following inspections:

1. CO OR CC - (845) 563-4618

Louis Krychear
Louis Krychear, Asst. Building Inspector

BUILDING PERMIT

The Town of New Windsor Building Department, County of Orange, State Of New York
hereby issues permit for project as described herein:

Permit No. **PA2014-421**

Permit Valid Until: **12/24/2015**

Issued Date: **6/24/2014**

Location of Property: **1814 Reed St**

Type of Permit **Commercial Demolition**

Tax Parcel ID: **91-1-14.2**

Fee: **$0.00**

Owner: **Town Of New Windsor,**
,
555 Union Ave
New Windsor, NY 12553

Applicant: **GREENTRACK, INC.**
ROBERT McLAUGHLIN, ESQ.
677 BROADWAY, SUITE 300

ALBANY, NY 12207

Description Of Work

DEMOLITION OF BUILDING # 1814

I am familiar with the Zoning/Building Ordinance(s) and the New York State Uniform Fire Prevention and Building Code requirements related to this permit and do hereby agree to abide by them. The information stated above is correct and accurate.

George A. Green

Signature Of Applicant

BUILDING PERMIT FEE NON-REFUNDABLE

A permit, under which no work has commenced within six (6) months after issuance, shall expire by limitation. Furthermore, a permit that no Certificate of Occupancy or Certificate of Compliance has been issued within eighteen (18) months after issuance shall expire by limitation. Under either circumstance a new building permit shall be secured before work can begin or be completed.

It is the responsibility of the Owner/Occupant and/or Contractor to comply with all applicable ordinances. Notification requests for inspection must be made at least 24 hours in advance to the number shown below. Voice mail requests for inspection will not be scheduled. YOU MUST HAVE YOUR BUILDING PERMIT NUMBER AVAILABLE when calling for any inspections or inquiries.

You must call for the following inspections:

1. CO OR CC - (845) 563-4618

Louis J Krychear

Louis Krychear, Asst. Building Inspector

BUILDING PERMIT

The Town of New Windsor Building Department, County of Orange, State Of New York
hereby issues permit for project as described herein:

Permit No. **PA2014-422**

Permit Valid Until: **12/24/2015**

Issued Date: **6/24/2014**

Location of Property: **1816 Reed St**

Type of Permit **Commercial Demolition**

Tax Parcel ID: **91-1-14.2**

Fee: **$0.00**

Owner: **Town Of New Windsor,**
,
555 Union Ave
New Windsor, NY 12553

Applicant: **GREENTRACK, INC.**
ROBERT McLAUGHLIN, ESQ.
677 BROADWAY, SUITE 300

ALBANY, NY 12207

Description Of Work

DEMOLITION OF BUILDING # 1816

I am familiar with the Zoning/Building Ordinance(s) and the New York State Uniform Fire Prevention and Building Code requirements related to this permit and do hereby agree to abide by them. The information stated above is correct and accurate.

George A. Green

Signature Of Applicant

BUILDING PERMIT FEE NON-REFUNDABLE

A permit, under which no work has commenced within six (6) months after issuance, shall expire by limitation. Furthermore, a permit that no Certificate of Occupancy or Certificate of Compliance has been issued within eighteen (18) months after issuance shall expire by limitation. Under either circumstance a new building permit shall be secured before work can begin or be completed.

It is the responsibility of the Owner/Occupant and/or Contractor to comply with all applicable ordinances. Notification requests for inspection must be made at least 24 hours in advance to the number shown below. Voice mail requests for inspection will not be scheduled. YOU MUST HAVE YOUR BUILDING PERMIT NUMBER AVAILABLE when calling for any inspections or inquiries.

You must call for the following inspections:

1. CO OR CC - (845) 563-4618

Louis Krychear

Louis Krychear, Asst. Building Inspector

BUILDING PERMIT

The Town of New Windsor Building Department, County of Orange, State Of New York
hereby issues permit for project as described herein:

Permit No. **PA2014-423**

Permit Valid Until: **12/24/2015**

Issued Date: **6/24/2014**

Location of Property: **1818 Reed St**

Type of Permit **Commercial Demolition**

Tax Parcel ID: **91-1-14.2**

Fee: **$0.00**

Owner: **Town Of New Windsor,**
,
555 Union Ave
New Windsor, NY 12553

Applicant: **GREENTRACK, INC.**
ROBERT McLAUGHLIN, ESQ.
677 BROADWAY, SUITE 300

ALBANY, NY 12207

Description Of Work

DEMOLITION OF BUILDING # 1818

I am familiar with the Zoning/Building Ordinance(s) and the New York State Uniform Fire Prevention and Building Code requirements related to this permit and do hereby agree to abide by them. The information stated above is correct and accurate.

George A. Green

Signature Of Applicant

BUILDING PERMIT FEE NON-REFUNDABLE

A permit, under which no work has commenced within six (6) months after issuance, shall expire by limitation. Furthermore, a permit that no Certificate of Occupancy or Certificate of Compliance has been issued within eighteen (18) months after issuance shall expire by limitation. Under either circumstance a new building permit shall be secured before work can begin or be completed.

It is the responsibility of the Owner/Occupant and/or Contractor to comply with all applicable ordinances. Notification requests for inspection must be made at least 24 hours in advance to the number shown below. Voice mail requests for inspection will not be scheduled. YOU MUST HAVE YOUR BUILDING PERMIT NUMBER AVAILABLE when calling for any inspections or inquiries.

You must call for the following inspections:

1. CO OR CC - (845) 563-4618

Louis Krychear

Louis Krychear, Asst. Building Inspector

6154147110

NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR _____ (for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-10-001

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-

RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR **MUST SIGN FORM**

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
Greenetrack, Inc. c/o Hodgson Russ LLP

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
McLaughlin, Esq.

Owner/Operator Contact Person First Name
Robert J.

Owner/Operator Mailing Address
677 Broadway, Suite 301

City
Albany

State
NY

Zip
12207-

Phone (Owner/Operator)
518-433-2421

Fax (Owner/Operator)
-

Email (Owner/Operator)
rmclaughlin@hodgsonruss.com

FED TAX ID
63-1151741 (not required for individuals)

Project Site Information

Project/Site Name
Former Stewart Army Base Site

Street Address (NOT P.O. BOX)
International Blvd.

Side of Street
○ **North** ○ **South** ○ **East** ○ **West**

The project site includes parcels on the north and south side of International Blvd.

City/Town/Village (THAT ISSUES BUILDING PERMIT)
New Windsor

State: NY
Zip: 12553 -
County: Orange
DEC Region: 3

Name of Nearest Cross Street
Bruenig Rd.

Distance to Nearest Cross Street (Feet)
500

Project In Relation to Cross Street
○ **North** ○ **South** ○ **East** ○ **West**

SITE INCLUDES 4 DIFFERENT SBL'S

Tax Map Numbers
Section-Block-Parcel
91-1-14.2
91-1-20

Tax Map Numbers
91-1-20
91-1-19

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting): 574866

Y Coordinates (Northing): 4544093

2. What is the nature of this construction project?

○ **New Construction**

○ **Redevelopment with increase in impervious area**

○ **Redevelopment with no increase in impervious area**

3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use

- ○ FOREST
- ○ PASTURE/OPEN LAND
- ○ CULTIVATED LAND
- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY
- ○ PARKING LOT
- ○ OTHER

ARMY BASE

Post-Development Future Land Use

- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION — Number of Lots [ ]
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ MUNICIPAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY (water, sewer, gas, etc.)
- ○ PARKING LOT
- ○ CLEARING/GRADING ONLY
- ○ DEMOLITION, NO REDEVELOPMENT
- ○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- ○ OTHER

***Note:** for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area
29.1	6.0		0.0

5. Do you plan to disturb more than 5 acres of soil at any one time? ○ **Yes** ○ **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D
%	%	%	100 %

7. Is this a phased project? ● **Yes** ○ **No**

8. Enter the planned start and end dates of the disturbance activities.

Start Date 12/20/2014 – **End Date** 10/05/2015

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name

Silver Stream

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ✓ Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-10-001? ○ **Yes** ○ **No**

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-10-001? ○ **Yes** ○ **No**

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ **Yes** ○ **No**
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ **Yes** ○ **No**
If Yes, what is the acreage to be disturbed?

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ **Yes** ○ **No**

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ● Yes ○ No ○ Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

Town of New Windsor

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ○ No ○ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ○ No

19. Is this property owned by a state authority, state agency, federal government or local government? ● Yes ○ No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ Yes ○ No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ● Yes ○ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ○ Yes ○ No
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ○ Yes ○ No

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ⊘ Professional Engineer (P.E.)
- ○ Soil and Water Conservation District (SWCD)
- ○ Registered Landscape Architect (R.L.A)
- ○ Certified Professional in Erosion and Sediment Control (CPESC)
- ○ Owner/Operator
- ○ Other

SWPPP Preparer
Wendel

Contact Name (Last, Space, First)
CIOLKO, OREST

Mailing Address
140 JOHN JAMES AUDUBON PKWY.

City
AMHERST

State NY Zip 14228 -

Phone 716 - 688 - 0766

Fax 716 - 625 - 6825

Email
OCIOLKO@WENDELCOMPANIES.COM

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-10-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name
OREST

MI
P

Last Name
CIOLKO

Signature

Date / /

25. Has a construction sequence schedule for the planned management practices been prepared? ● Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ☑ Check Dams
- ○ Construction Road Stabilization
- ☑ Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ☑ Sediment Traps
- ☑ Silt Fence
- ☑ Stabilized Construction Entrance
- ☑ Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ☑ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ○ Mulching
- ☑ Protecting Vegetation
- ○ Recreation Area Improvement
- ☑ Seeding
- ○ Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ☑ Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ○ Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ○ Rock Outlet Protection
- ○ Streambank Protection

Other

Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ○ **Preservation of Undisturbed Areas**
- ○ **Preservation of Buffers**
- ○ **Reduction of Clearing and Grading**
- ○ **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ○ **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ○ All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

[ ][ ][ ].[ ][ ][ ] **acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area (acres)
RR Techniques (Area Reduction)			
○ Conservation of Natural Areas (RR-1) ...	___.___	and/or	___.___
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)	___.___	and/or	___.___
○ Tree Planting/Tree Pit (RR-3)	___.___	and/or	___.___
○ Disconnection of Rooftop Runoff (RR-4) ..	___.___	and/or	___.___
RR Techniques (Volume Reduction)			
○ Vegetated Swale (RR-5)			___.___
○ Rain Garden (RR-6)			___.___
○ Stormwater Planter (RR-7)			___.___
○ Rain Barrel/Cistern (RR-8)			___.___
○ Porous Pavement (RR-9)			___.___
○ Green Roof (RR-10)			___.___
Standard SMPs with RRv Capacity			
○ Infiltration Trench (I-1)			___.___
○ Infiltration Basin (I-2)			___.___
○ Dry Well (I-3)			___.___
○ Underground Infiltration System (I-4)			___.___
○ Bioretention (F-5)			___.___
○ Dry Swale (O-1)			___.___
Standard SMPs			
○ Micropool Extended Detention (P-1)			___.___
○ Wet Pond (P-2)			___.___
○ Wet Extended Detention (P-3)			___.___
○ Multiple Pond System (P-4)			___.___
○ Pocket Pond (P-5)			___.___
○ Surface Sand Filter (F-1)			___.___
○ Underground Sand Filter (F-2)			___.___
○ Perimeter Sand Filter (F-3)			___.___
○ Organic Filter (F-4)			___.___
○ Shallow Wetland (W-1)			___.___
○ Extended Detention Wetland (W-2)			___.___
○ Pond/Wetland System (W-3)			___.___
○ Pocket Wetland (W-4)			___.___
○ Wet Swale (O-2)			___.___

Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area (acres)
○ **Hydrodynamic**	___.___
○ **Wet Vault**	___.___
○ **Media Filter**	___.___
○ **Other** _____	___.___

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name _____

Manufacturer _____

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

___.___ **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ○ **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

___.___ **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

○ **Yes** ○ **No**

If Yes, go to question 33.
If No, the sizing criteria has not been met. Contact Regional Office stormwater contact person to discuss next steps.

Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

[ ][ ][ ].[ ][ ][ ] **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a). [ ][ ][ ].[ ][ ][ ]

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ○ **Yes** ○ **No**

If Yes, go to question 36.
If No, the sizing criteria has not been met. Contact Regional Office stormwater contact person to discuss next steps.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

[ ][ ][ ].[ ][ ][ ] **acre-feet**

CPv Provided

[ ][ ][ ].[ ][ ][ ] **acre-feet**

36a. The need to provide channel protection has been waived because:

○ Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

[ ][ ][ ].[ ][ ][ ] **CFS**

Post-development

[ ][ ][ ].[ ][ ][ ] **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

[ ][ ][ ].[ ][ ][ ] **CFS**

Post-development

[ ][ ][ ].[ ][ ][ ] **CFS**

37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ○ **Yes** ○ **No**

If Yes, Identify the entity responsible for the long term Operation and Maintenance

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ○ Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP N Y R
- ○ Other
- ⊘ None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ○ **No**
If Yes, Indicate Size of Impact. .

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ● **Yes** ○ **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ● **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. N Y R

9366147118

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name: Robert

MI: J

Print Last Name: McLaughlin, Esq.

Owner/Operator Signature:

Date: 06/27/2014

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information	
1. Owner/Operator Name:	Greenetrack Inc. c/o Hodgson Russ LLP
2. Contact Person:	Robert J. McLaughlin, Esq
3. Street Address:	677 Broadway, Suite 301
4. City/State/Zip:	Albany, New York 12207
II. Project Site Information	
5. Project/Site Name:	Demolition at former Stewart Army Base
6. Street Address:	International Blvd.
7. City/State/Zip:	New Windsor, New York 12553
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	John Szarowski, P.E., CPESC, CPSWQ, CMS4S, LEED-AP
9. Title/Position:	Senior Engineer, McGoey Hauser and Edsall, D.P.C.
10. Date Final SWPPP Reviewed and Accepted:	26 June 2014
IV. Regulated MS4 Information	
11. Name of MS4:	Town if New Windsor
12. MS4 SPDES Permit Identification Number: NYR20A	241
13. Contact Person:	Mark Edsall, P.E. Engineer for the Town
14. Street Address:	555 Union Avenue
15. City/State/Zip:	New Windsor New York 12553
16. Telephone Number:	845-567-3100

(NYS DEC - MS4 SWPPP Acceptance Form - January 2010)

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s).
Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name: Mark J. Edsall, P.E., P.P.

Title/Position: SWPPP Review Officer

Signature:

Date: 6-27-2014

VI. Additional Information

Greentrack – Demolition at former Stewart Army Base

Exhibit VIII.C.20.d Applicant's plans for relocating or compensating such displaced parties

The Applicant's plans for their gaming facility includes the relocation of two existing services. The Applicant's Host Municipality Agreement addresses these two services, for more information see Exhibit IX.A.1.b.

Police Headquarters and Academy – within ninety (90) days from the award of the Gaming License the Developer shall pay $3.1 million to the Town of New Windsor for the rehabilitation and refurbishment of the former Army Reserve Headquarters into the new Police Academy and Headquarters. Once completed the Developer is required to remove the old Police Headquarters currently existing on the property to be utilized for the gaming facility.

Gymnasium – not earlier than ninety (90) days from the award of the Gaming License and not later than sixty (60) days after the Town's request for payment the Developer shall pay $2.0 million to the Town of New Windsor as a deposit towards the full cost for the construction and replacement of the gymnasium. The Developer will pay any additional sums reasonably required by the Town to complete the project. The Developer is required to remove the old Gymnasium no later than eighteen (18) months from the award of the gaming license.

Exhibit VIII.C.20.e. Submit a proposed date for the proposed Gaming Facility to open for gaming and indicate major risks to such proposed opening date and the range of probable delays associated with each. Describe plans to mitigate such risks. Indicate whether the proposed Gaming Facility will open in phases or all at one time. If the facility is to open in phases, provide a detailed description of what will open in each phase and the proposed opening date for each phase and/or what conditions each such opening date will be contingent upon. Provide Applicant's commitment for a proposed outside date, notwithstanding any delays, for substantial completion of the initial fully operational phase of the proposed Gaming Facility

Our team is firmly committed to having an open and operational facility within the 24-month duration set forth in the NYS Gaming RFA. For the purpose of establishing both a design and construction schedule we have assumed January 31st, 2015 as the date of license award; the License Award date is of course not known at this time and remains variable. Based on this date of license award, the opening of the Grand Hudson Resort and Casino will be no later than January 31, 2017.

Upon license award, we will begin construction immediately. Our enabling process to assure a timely construction start includes: having all necessary design work completed for early-bid packages, including Structural Steel, Foundation and Site Work; preparing, advertising, receiving, reviewing; and awarding early Subcontractor bid-packages pending only the NYS license before construction begins. Demolition, SWWP and Site Grading Permits have been issued for this site. All other necessary permits to allow construction to begin will be approved prior to the anticipated award date.

If excessive schedule delays are experienced, for reasons beyond the control of the owner or contractor (i.e. severe weather delays), completion of the Event Center and/or certain floors of the Hotel Tower may be completed after the Casino floor and restaurants are open for business. If unanticipated schedule delays affect the completion of any non-gaming or F&B service amenities, substantial completion would extend no further than three to six months beyond the January 31, 2017 opening.

MAJOR RISKS

WEATHER

The construction schedule is based on 20-year averages for annual precipitation, rainfall, snowfall, winds and low temperatures for New Windsor, New York. Excessive inclement weather would have an effect on construction activities and productivity. Temporary protection will be installed to minimize the impact of weather sensitive activities and weather delay days are built into the construction schedule. Labor forces will be increased to double, triple shifts and/or weekend shifts to offset weather related delays.

LICENSE AWARD DATE

Anticipated to be late January 2015, our intent is to begin to abate and demolish existing buildings on site immediately post award and begin site utility preparation and utility work in early March 2015. License award in late November 2014 through mid-January 2015 would pose a challenge to our team's

ability to begin sitework and earthwork in the snow covered and frozen ground in New Windsor, New York. As with weather related delays, an earlier start based on award of the NYS license before our anticipated January 31, 2015 date will be mitigated by increasing labor forces to double, triple shifts and/or weekend shifts.

MATERIAL AVAILABILITY

Construction materials can occasionally have long-lead times to procure. Typical long-lead items include: structural steel, high end finishes common to Casinos, and specialty lighting. To minimize delays based on long-lead items, our design primarily includes materials that are readily available within North America and are specifically USA produced. For items procured outside the US, our team will pre-purchase and store them on site in advance of the early start date for their associated tasks. Structural steel designs will emphasize the use of non-custom steel sizes and requirements, expediting shop drawings, and early award of the steel contract to minimize this risk.

LABOR AVAILABILITY

Our team has had early discussions with local union leaders and we have gained their support for our project. During the anticipated negotiation and establishment of a Project Labor Agreement (PLA) we will obtain assurances from all trade union representatives that adequate local labor forces will be available for our project. Our preliminary discussions have clearly defined the project's potential requirement for multi-shift work, overtime and weekend work to complete the project within schedule. We have been given assurances that the local union labor force will fulfill this project's needs.

AGENCY APPROVALS

As mentioned elsewhere in this application, our site has already received SEQR approval through a Negative Declaration from the Town of New Windsor; all departments of the Town have provided tremendous support for this successful project. The risk for delays caused by late or untimely approvals from agencies outside of the Town of New Windsor is beyond our control. These agencies include: NYS DOT, FAA and utility companies as well as others. Our plan to mitigate the risks is to engage all agencies well in advance of needed approval to begin discussions. This plan is already in process and will continue prior to actual license award.

Exhibit VIII.C.21 Table indicating by trade and calendar quarter the number of construction hours, the average daily number of full time equivalent ("FTE's") workers expected to work on the project, the average monthly compensation and benefits per FTE, the average monthly total labor cost per FTE (compensation plus benefits). Provide overall and by trade the total construction hours, FTEs, compensation, benefits, and labor cost for the entire construction period

Attached as Exhibit VIII.C.21-1 is the proposed schedule of construction jobs.

Greenetrack Inc.

Exhibit VIII.C.21

Construction Jobs

	2015				2016				2017	TOTAL PROJECT
	First Jan-Mar 2015	Second Apr-June 2015	Third July-Sept 2015	Fourth Oct-Dec 2015	First Jan-Mar 2016	Second Apr-June 2016	Third July-Sept 2016	Fourth Oct-Dec 2016	First Jan-Feb 2017	
Labor Cost	$2,018,807.00	$14,703,509.00	$19,462,302.00	$18,983,987.00	$20,404,723.75	$22,780,475.53	$23,023,189.50	$17,837,796.00	$3,116,444.62	$142,331,234.40
Man Hours per Qtr	22,431	163,372	216,248	210,933	226,719	253,116	255,813	198,198	34,627	1,581,458
Man Hours per Wk	1,725	12,567	16,634	16,226	17,440	19,470	19,678	15,246	2,664	121,651
Average Daily FTE	35	251	333	325	349	389	394	305	53	2,433
Insulator	0	0	0	2	4	12	16	6	0	40
Boilermaker										
Carpenter	8	56	66	70	70	70	70	68	11	489
Electrician	6	35	35	35	35	46	52	42	10	296
Elevator	0	0	2	2	2	10	10	10	1	37
Glazier	0	0	0	3	11	17	26	18	4	79
Iron Worker	0	0	47	40	40	40	10	4	0	181
Laborer	10	62	66	66	70	70	72	44	12	472
Mason	0	20	22	21	24	20	16	8	0	131
Millwright	0	0	0	2	2	3	4	1	0	12
Operating Engineer	5	20	25	16	16	16	10	6	1	115
Painter	0	0	0	0	0	6	16	20	3	45
Plumber/Fitter	4	32	40	40	40	41	51	40	7	295
Roofer	0	0	0	0	17	20	4	0	0	41
Sheet Metal	0	4	8	8	8	10	23	24	2	87
Sprinkler Fitter	0	4	4	4	4	4	12	14	2	48
Teamster	2	18	18	16	6	4	2	0	0	66

AVERAGE MONTHLY COMPENSATION PER FTE (COMPENSATION PLUS BENEFITS) $14,300

MAN HOUR WEEKS BASED ON 10 HOURS PER DAY 5 DAYS PER WEEK (50 HOURS PER FTE)

Exhibit VIII.C.22 Names Of All Proposed Vendors Of Gaming Equipment to the best of your present knowledge and belief, including, without limitation, Slot Machines, Table Games, Bases and Chairs, Signage, Cage and Count Room Equipment, Player Club Systems, Accounting and TITO Systems, Etc.

There currently exists a multitude of companies that have joined the horde to supply various casino supplies to the industry including everything from slot machines down to live table game lay-out. Following is a list of suppliers the Applicant and/or the manager intends to reach out to fulfill their casino and gaming equipment and supplies. This listing does not intend to, nor does it encompass 100% of the vendors that will ultimately get utilized for gaming supplies.

Gaming and Related Vendors	
Vendor	**Product**
Graphic Controls	Slot Tickets
Aristocrat Technologies, Inc.	Slots
Aruze Gaming	Slots
Bally Technologies	Slots
KGM Gaming	Slots, Chairs, Bases
Modern Gaming East (Konami)	Slots
IGT - International Game Tech.	Slots
Lightning Gaming, Inc.	Slots
MEI Bill Validators	Bill Validators
Multimedia Games	Slots
Spielo Gaming	Slots
Transact	Printers
Suzo Happ	Slot Parts
WMS Gaming	Slots
Interblock	Electronic Table Games
Patriot Gaming & Electronics	Slot Parts
Northeast Lock	Slot Locks
US Playing Card Co.	Cards
Genesis Gaming	Layouts
Rainbow Polybag	Card & Dice Bags
GPI	Table Game Supplies
American Casino Equipment Manufacturers	Table Game Supplies
Avalon Gaming, Inc.	Table Game Supplies
Casino Games Supply	Table Game Supplies
Spinettis Gaming Supply	Table Game Supplies
No Peek 21	No Peek Devices

Exhibit VIII.C.22 Gaming Equipment Vendors

Signs Visual Industries of New York, Inc.	Signage
YESCO	Signage
Cash Management Systems, Inc.	Cage and Cash Handling
Cummins-Allison Corp.	Cage and Cash Handling
Data Financial, Inc.	Cage and Cash Handling
Glory (U.S.A.) Inc.	Cage and Cash Handling
JCM Global	Cage and Cash Handling
DEQ Systems Corp.	EZ Baccarat/EZ Trak
Galaxy Gaming	Emperors Challenge, Envy Buttons
In Bet, LLC	In Bet
Masque Publishing	Match the Dealer
SHFL Entertainment	Electronic Table Games and Shufflers
Totalup	Sic Bo Leases and Parts
TCS John Huxley	Chipper Champs
Anixter	Velcro
Banksupplies Inc.	Counterfeit Detection Pens
Bayworld Industries Inc.	Parts for Emperor's Challenge
Beaules	Badge Pulleys
Carmanah Signs Inc.	Table Limit Signs
Copy Cats Inc.	Baccarat Score Cards
Crowd Control Warehouse	Stanchions and Rope
Diamond Casino Products	Chip Cleaner, Rollers for Cleaner
Erwyn Promotions Co. Inc.	"Gaming Operations" Stic Pens
Fastenal Company	Hardware items
Gasser Chair Company	Slot Bases, Chairs and Stools
King Cabinet	Slot Bases, Chairs and Stools
Midwest Casino Supply	Slot Bases, Chairs and Stools
TC Millwork	Slot Bases, Chairs and Stools
VSR industries	Slot Bases, Chairs and Stools
Griswold Rubber	Black rubber for table tops
Kardwell Intl. Inc.	Clear Chip Spacers
Leamark Inc.	Green felt
McErgo	Task Chairs
Paltronics	Table Game Supplies
Sherry Stylo LLC	Baccarat Pens
Soaptronic	GermStar Products
South Jersey Precision Tool	Pai Gow Tile Sets
WW Grainger	Maintenance and Repair Supplies
S & J Enterprises	Signage

Exhibit VIII.C.22 Gaming Equipment Vendors

NRT Technologies, Inc	Cage and Cash Handling
Global Cash Access	Cash Advance and TITO
Global Payments Gaming Services, Inc.	Cash Advance and TITO
NRT Technologies, Inc	Cash Advance and TITO
CCS Technology (Infinium)	Accounting Software
Lawson Software	Accounting Software
Aristocrat Technologies, Inc.	Slot Sytstem, Player's Club, TITO
Bally Technologies, Inc.	Slot Sytstem, Player's Club, TITO

Exhibit VIII.D.1.a Full description of the proposed internal controls, electronic surveillance systems, and security systems for the proposed Gaming Facility and any related facilities, including, for example, any contemplated internal audits, independent external audits, separation of accounting and cage processes for independent verifications, cage and count room supervision, gaming floor drop processes, and other asset preservation and secure cash handling systems and processes. Where third-parties are to be engaged (e.g., external audit and law enforcement/safety entities), so indicate. Indicate how these efforts will achieve risk management/control goals at the enterprise/Licensee level as well as regulatory, law enforcement, and other local, regional, State, and Federal levels as applicable

Full House Resorts, Inc. (FLL) is a publicly traded company and currently is approved to conduct gaming in Indiana, Mississippi and Nevada. As a publicly traded company FLL is subject to certain internal control reporting responsibilities by the CEO and CFO. Full House takes great care when developing internal control policies and procedures in each of their markets at a minimum to address a particular state's regulations and requirements, but more importantly to protect their assets.

As part of their normal Pre-opening Plan, FLL would develop a complete Internal Control Program (ICP) as well as a comprehensive Security System Plan with corresponding policies and procedures that would provide coverage to the gaming facility and included amenities. The ICP would be tailored after the Minimum Internal Control Procedures adopted by the State of New York.

An organization report chart and staffing levels to support the requirements of the ICP would be developed in concert with the regulators and completed as part of the Pre-opening plan.

In addition the newly formed entity would develop policies and practices that covered the following areas;

Code of Ethics	Record Retention
Vendor Registration	Charter for Audit Committee
Audit Schedule	Contract Approval
Compliance & Accounting	Financial Reporting

This is only a representative sampling of the administrative areas where policy and operating procedures would be developed to support the ICP and Security protocols.

Attached below is a typical index and table of contents used by FLL to guide the development of the ICP. As you can surmise, this program is a very detailed program and is customized to each and every department. It is an encompassing development plan that is thoroughly scrubbed to arrive at the appropriate controls and procedures required in order to effectively preserve assets.

INTERNAL OPERATING POLICIES AND PROCEDURES TABLE OF CONTENTS SAMPLE INDEX

	Refer. # and Page #	Last Date Submitted	Last Date Approved
Count Team Index			
Positions, Signatory Authority and Access to Sensitive Areas			
Count Room Characteristics			
Count Team Authorized Personnel			
Live Gaming Device Currency Collection			
Live Gaming Device Emergency Currency Collection			
Count Team Process			
Bill Validator Currency Collection			
Bill Validator Emergency Currency Collection			
Bill Validator Count Team Process			
Currency Counters			
Count Team TITO			
Cashier's Cage Index			
Positions, Signatory Authority and Access to Sensitive Areas			
Cage Characteristics			
Authorized Personnel			
Deposits Into the Main Bank			
Exchanges with the Cashier's Cage			
Cash Buys from the Main Bank			
Patron Safekeeping Deposits			
Cashing of Patron Checks and Cash Equivalents			

Currency Transaction Reports (CTRs)

Live Gaming Device Fills and Credits

Live Gaming Device and Electronic Gaming Device Tournaments

Financial Institution Deposits

Receivables

Tips and Gratuities

Hand Paid Jackpots - Cage

Unclaimed Electronic Gaming Device Jackpots

Ticket Redemption Center Patron Self Service Dispensing System Transaction Controls

Shift Reconciliations

Credit

Chips

Jet Sort Testing

Chips Specifications

Cashier's Cage – Paid Outs/Paid Ins

Slot Department Index

Positions, Signatory Authority and Access to Sensitive Areas

Electronic Gaming Device Floor Changes

Slot Location and Records

Progressive Electronic Gaming Devices

Free Play Electronic Gaming Device

Duplication of EPROMS

Computer Monitoring of Electronic Gaming Devices

Electronic Gaming Device Tournament Rules

Electronic Gaming Device Entry

Electronic Gaming Device Inventory Requirements

Electronic Gaming Device Movements

Ticket In/Ticket Out

Networked Systems

Players Club ("Marketing Services")

Table Games Department Index

Positions, Signatory Authority and Access to Sensitive Areas

Cash and Coupons Presented at Live Gaming Devices

Live Gaming Device Inventory

Gaming Equipment

Table Requirements

Table Game Requirements

Table Game Movements

Security Department Index

Positions, Signatory Authority and Access to Sensitive Areas

Duties and Responsibilities

Emergency Procedures

Logs and Reports

Vehicle Fleet Safety - Operations and Maintenance

Lost and Found

Sensitive Key Control

Dispute Procedures

Eviction Procedures

IGC Voluntary Exclusion Program

Traka Key System

Surveillance Department Index

Positions, Signatory Authority and Access to Sensitive Areas

General Comments

Surveillance Room

Departmental Procedures

Accounting Department Index

Positions, Signatory Authority and Access to Sensitive Areas

Electronic Gaming Device Audit

Live Gaming Device Audit

Admission Tax-Revenue Audit

Currency Transaction Reports (CTRs) & Suspicious Activity Reports – Casinos (SARCs)

Returned Checks

Destruction of Records

Accounting Records

Wagering Taxes

Internal Audit Department Index

Positions, Signatory Authority and Access to Sensitive Areas

Duties and Responsibilities

Audit Plan

Audit Report

Marketing Department Index

Positions, Signatory Authority and Access to Sensitive Areas

Players Club

Comps

Coupons

Promotional Credits

Promotions

Rules of the Games - Index

Craps Rules/Procedures

Roulette Rules/Procedures

Caribbean Stud Poker Rules/Procedures

Let it Ride Rules/Procedures

Blackjack Rules/Procedures

Tournament Rules/Blackjack/Craps/Roulette

Three Card Poker Rules/Procedures

Spanish 21 Rules/Procedures

Blackjack 21 + 3 Rules/Procedures

Rules - Poker

Rules – Mini Baccarat Dragon Bonus

Rules – Texas Hold'Em Bonus

Rules – Ultimate Texas Hold'Em Bonus

Rules – Pai Gow Poker

Rules – Big Six

Rules – Crazy Four Poker

Rules – Mississippi Stud Progressive

Purchasing, MBE/WBE, Petty Cash Index

Positions, Signatory Authority and Access to Sensitive Areas
Procurement Procedures

MBE/WBE

Petty Cash Procedures

Office Supplies

Exhibit VIII.D.1.a Full description of the proposed internal controls, electronic surveillance systems, and security systems for the proposed Gaming Facility and any related facilities, including, for example, any contemplated internal audits, independent external audits, separation of accounting and cage processes for independent verifications, cage and count room supervision, gaming floor drop processes, and other asset preservation and secure cash handling systems and processes. Where third-parties are to be engaged (e.g., external audit and law enforcement/safety entities), so indicate. Indicate how these efforts will achieve risk management/control goals at the enterprise/Licensee level as well as regulatory, law enforcement, and other local, regional, State, and Federal levels as applicable

Full House Resorts, Inc. (FLL) is a publicly traded company and currently is approved to conduct gaming in Indiana, Mississippi and Nevada. As a publicly traded company FLL is subject to certain internal control reporting responsibilities by the CEO and CFO. Full House takes great care when developing internal control policies and procedures in each of their markets at a minimum to address a particular state's regulations and requirements, but more importantly to protect their assets.

As part of their normal Pre-opening Plan, FLL would develop a complete Internal Control Program (ICP) as well as a comprehensive Security System Plan with corresponding policies and procedures that would provide coverage to the gaming facility and included amenities. The ICP would be tailored after the Minimum Internal Control Procedures adopted by the State of New York.

An organization report chart and staffing levels to support the requirements of the ICP would be developed in concert with the regulators and completed as part of the Pre-opening plan.

In addition the newly formed entity would develop policies and practices that covered the following areas;

Code of Ethics	Record Retention
Vendor Registration	Charter for Audit Committee
Audit Schedule	Contract Approval
Compliance & Accounting	Financial Reporting

This is only a representative sampling of the administrative areas where policy and operating procedures would be developed to support the ICP and Security protocols.

Attached below is a typical index and table of contents used by FLL to guide the development of the ICP. As you can surmise, this program is a very detailed program and is customized to each and every department. It is an encompassing development plan that is thoroughly scrubbed to arrive at the appropriate controls and procedures required in order to effectively preserve assets.

INTERNAL OPERATING POLICIES AND PROCEDURES TABLE OF CONTENTS SAMPLE INDEX

	Refer. # and Page #	Last Date Submitted	Last Date Approved
Count Team Index			
Positions, Signatory Authority and Access to Sensitive Areas			
Count Room Characteristics			
Count Team Authorized Personnel			
Live Gaming Device Currency Collection			
Live Gaming Device Emergency Currency Collection			
Count Team Process			
Bill Validator Currency Collection			
Bill Validator Emergency Currency Collection			
Bill Validator Count Team Process			
Currency Counters			
Count Team TITO			
Cashier's Cage Index			
Positions, Signatory Authority and Access to Sensitive Areas			
Cage Characteristics			
Authorized Personnel			
Deposits Into the Main Bank			
Exchanges with the Cashier's Cage			
Cash Buys from the Main Bank			
Patron Safekeeping Deposits			
Cashing of Patron Checks and Cash Equivalents			

Currency Transaction Reports (CTRs)

Live Gaming Device Fills and Credits

Live Gaming Device and Electronic Gaming Device Tournaments

Financial Institution Deposits

Receivables

Tips and Gratuities

Hand Paid Jackpots - Cage

Unclaimed Electronic Gaming Device Jackpots

Ticket Redemption Center Patron Self Service Dispensing System Transaction Controls

Shift Reconciliations

Credit

Chips

Jet Sort Testing

Chips Specifications

Cashier's Cage – Paid Outs/Paid Ins

Slot Department Index

Positions, Signatory Authority and Access to Sensitive Areas

Electronic Gaming Device Floor Changes

Slot Location and Records

Progressive Electronic Gaming Devices

Free Play Electronic Gaming Device

Duplication of EPROMS

Computer Monitoring of Electronic Gaming Devices

Electronic Gaming Device Tournament Rules

Electronic Gaming Device Entry

Electronic Gaming Device Inventory Requirements

Electronic Gaming Device Movements

Ticket In/Ticket Out

Networked Systems

Players Club ("Marketing Services")

Table Games Department Index

Positions, Signatory Authority and Access to Sensitive Areas

Cash and Coupons Presented at Live Gaming Devices

Live Gaming Device Inventory

Gaming Equipment

Table Requirements

Table Game Requirements

Table Game Movements

Security Department Index

Positions, Signatory Authority and Access to Sensitive Areas

Duties and Responsibilities

Emergency Procedures

Logs and Reports

Vehicle Fleet Safety - Operations and Maintenance

Lost and Found

Sensitive Key Control

Dispute Procedures

Eviction Procedures

IGC Voluntary Exclusion Program

Traka Key System

Surveillance Department Index

Positions, Signatory Authority and Access to Sensitive Areas

General Comments

Surveillance Room

Departmental Procedures

Accounting Department Index

Positions, Signatory Authority and Access to Sensitive Areas

Electronic Gaming Device Audit

Live Gaming Device Audit

Admission Tax-Revenue Audit

Currency Transaction Reports (CTRs) & Suspicious Activity Reports – Casinos (SARCs)

Returned Checks

Destruction of Records

Accounting Records

Wagering Taxes

Internal Audit Department Index

Positions, Signatory Authority and Access to Sensitive Areas

Duties and Responsibilities

Audit Plan

Audit Report

Marketing Department Index

Positions, Signatory Authority and Access to Sensitive Areas

Players Club

Comps

Coupons

Promotional Credits

Promotions

Rules of the Games - Index

Craps Rules/Procedures

Roulette Rules/Procedures

Caribbean Stud Poker Rules/Procedures

Let it Ride Rules/Procedures

Blackjack Rules/Procedures

Tournament Rules/Blackjack/Craps/Roulette

Three Card Poker Rules/Procedures

Spanish 21 Rules/Procedures

Blackjack 21 + 3 Rules/Procedures

Rules - Poker

Rules – Mini Baccarat Dragon Bonus

Rules – Texas Hold'Em Bonus

Rules – Ultimate Texas Hold'Em Bonus

Rules – Pai Gow Poker

Rules – Big Six

Rules – Crazy Four Poker

Rules – Mississippi Stud Progressive

Purchasing, MBE/WBE, Petty Cash Index

Positions, Signatory Authority and Access to Sensitive Areas
Procurement Procedures

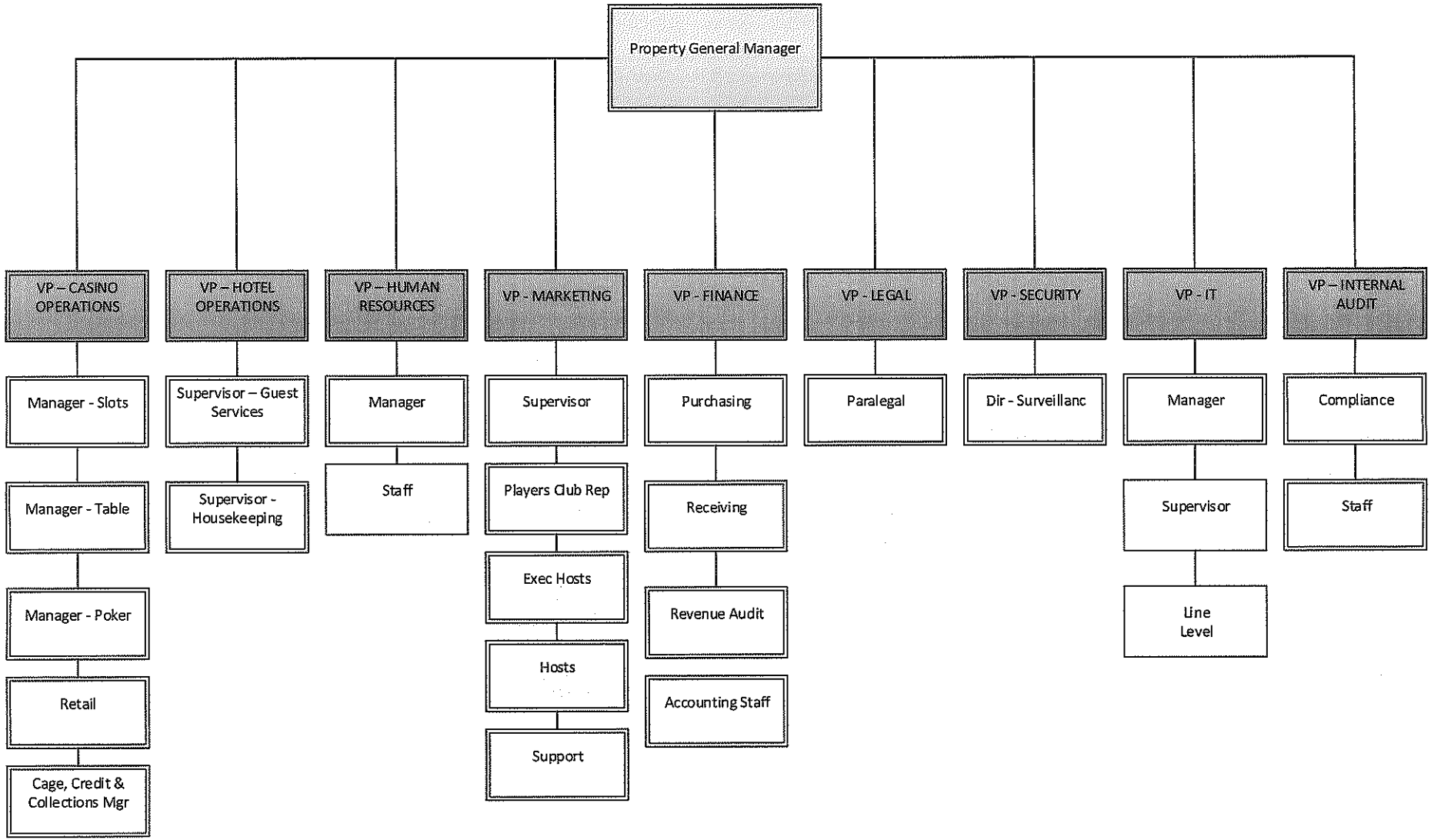
MBE/WBE

Petty Cash Procedures

Office Supplies

Exhibit VIII.D.1.b Organization Chart

Exhibit VIII. D.1.b. Submit a projected table of organization for the entire project. For compliance, accounting, audit (both financial and internal control), security, and surveillance show additional detail that includes staffing levels and identifies the critical departments of detailed organization charts for each control/risk management related activity (e.g., positions in compliance, accounting, cage, cashiering, count room(s), credit issuance, credit collection, asset management, and income control), data processing, internal audit, compliance and security, and surveillance. Show staffing levels for each position. If risk management/control is vested in other departments, functions or activities, identify them and describe their role. Indicate which staff position(s) would be responsible for communications with the Commission.


Property General Manager
VP – CASINO OPERATIONS
VP – HOTEL OPERATIONS
VP – HUMAN RESOURCES
VP - MARKETING
VP - FINANCE
VP - LEGAL
VP - SECURITY
VP - IT
VP – INTERNAL AUDIT
Manager - Slots
Manager - Table
Manager - Poker
Retail
Cage, Credit & Collections Mgr
Supervisor – Guest Services
Supervisor - Housekeeping
Manager
Staff
Supervisor
Players Club Rep
Exec Hosts
Hosts
Support
Purchasing
Receiving
Revenue Audit
Accounting Staff
Paralegal
Dir - Surveillanc
Manager
Supervisor
Line Level
Compliance
Staff

THE GRAND HUDSON RESORT AND CASINO

	Number of Part time employees	Number of Full time employees
EXECUTIVE OFFICES		
Administrative		12
Directors/VP's		10
AGM		1
GM/ COO		1
DIRECTOR OF LEGAL SERVICES		see exec
DIRECTOR OF HUMAN RESOURCES		see exec
Manager of HR		3
Staff		4
DIRECTOR OF IT		see exec
IT Manager		
Manager		1
Supervisor		2
Line Level	2	5
FINANCE DIRECTOR		see exec
Finance		
Director		
Manager/Supervisor		2
Staff		3
Purchasing		
Director		1
Manager/Supervisor		1
Staff		1
Receiving		
Director		1
Manager/Supervisor		1
Staff		5
INTERNAL AUDIT		
Manager/Supervisor		1
Staff		1
Compliance		
Director		
Manager/Supervisor		1
Staff		
Revenue Audit		
Director		
Manager/Supervisor		2
Staff		
Other		
Director		
Manager/Supervisor		1
Staff		7
Slots		

THE GRAND HUDSON RESORT AND CASINO

	Number of Part time employees	Number of Full time employees
Director		see exec
Managers		3
Supervisors (Ops)		8
Techs (Salary = Sup)		120
Attendants	10	70
Table		
Director		see exec
Managers		8
Supervisors/Floors		90
Dealers	50	399
Poker		
Manager		4
Supervisors/Floors		16
Dealers	10	106
Retail		
Manager		1
Supervisors/Floors		3
Staff	4	18
Cage, Credit, Collections Manager		4
Supervisors		10
Drop Team		10
Cashiers/Kiosk/Impress		25
EVS Manager		1
Supervisors		8
Line Level		60
Facilities/Engineering Manager		2
Supervisors		6
Line Level		30
Security Manager		3
Supervisors		8
Officers	12	85
Surveillance Manager		1
Supervisors		6
Line Level		18
Transportation Manager		1
Supervisors		10
Shuttle/Drivers		9
Valet		24
DIRECTOR OF MARKETING		see exec
Managers/ Database		3
Supervisors		6
Player's Club Reps		31
Executive Hosts		12

THE GRAND HUDSON RESORT AND CASINO

	Number of Part time employees	Number of Full time employees
Hosts		18
Support		6
DIRECTOR OF HOTEL SERVICES		see exec
Hotel Manager		5
Supervisors		15
Guest Services	4	19
Housekeeping		75
DIRECTOR OF FOOD		see exec
Food Manager		6
Banquets/Meetings	15	21
Supervisors		21
Cooks		
Barbacks	5	20
Bartenders	5	32
Beverage Manager		see exec
Front of House - All F&B Outlets Manager		12
Supervisors		30
Bartenders	9	50
Servers	60	150
Cashiers/Hostess	12	82
Bussers	17	70
Back of House - All F&B Outlets Chef/Manager		7
Cooks	15	105
Food Preps	7	60
Dishwashers	10	40

THE GRAND HUDSON RESORT AND CASINO

	Number of Part time employees	Number of Full time employees
EXECUTIVE OFFICES		
Administrative		12
Directors/VP's		10
AGM		1
GM/ COO		1
DIRECTOR OF LEGAL SERVICES		see exec
DIRECTOR OF HUMAN RESOURCES		see exec
Manager of HR		3
Staff		4
DIRECTOR OF IT		see exec
IT Manager		
Manager		1
Supervisor		2
Line Level	2	5
FINANCE DIRECTOR		see exec
Finance		
Director		
Manager/Supervisor		2
Staff		3
Purchasing		
Director		1
Manager/Supervisor		1
Staff		1
Receiving		
Director		1
Manager/Supervisor		1
Staff		5
INTERNAL AUDIT		
Manager/Supervisor		1
Staff		1
Compliance		
Director		
Manager/Supervisor		1
Staff		
Revenue Audit		
Director		
Manager/Supervisor		2
Staff		
Other		
Director		
Manager/Supervisor		1
Staff		7
Slots		

THE GRAND HUDSON RESORT AND CASINO

	Number of Part time employees	Number of Full time employees
Director		see exec
Managers		3
Supervisors (Ops)		8
Techs (Salary = Sup)		120
Attendants	10	70
Table		
Director		see exec
Managers		8
Supervisors/Floors		90
Dealers	50	399
Poker		
Manager		4
Supervisors/Floors		16
Dealers	10	106
Retail		
Manager		1
Supervisors/Floors		3
Staff	4	18
Cage, Credit, Collections Manager		4
Supervisors		10
Drop Team		10
Cashiers/Kiosk/Impress		25
EVS Manager		1
Supervisors		8
Line Level		60
Facilities/Engineering Manager		2
Supervisors		6
Line Level		30
Security Manager		3
Supervisors		8
Officers	12	85
Surveillance Manager		1
Supervisors		6
Line Level		18
Transportation Manager		1
Supervisors		10
Shuttle/Drivers		9
Valet		24
DIRECTOR OF MARKETING		see exec
Managers/ Database		3
Supervisors		6
Player's Club Reps		31
Executive Hosts		12

THE GRAND HUDSON RESORT AND CASINO

	Number of Part time employees	Number of Full time employees
Hosts		18
Support		6
DIRECTOR OF HOTEL SERVICES		see exec
Hotel Manager		5
Supervisors		15
Guest Services	4	19
Housekeeping		75
DIRECTOR OF FOOD		see exec
Food Manager		6
Banquets/Meetings	15	21
Supervisors		21
Cooks		
Barbacks	5	20
Bartenders	5	32
Beverage Manager		see exec
Front of House - All F&B Outlets Manager		12
Supervisors		30
Bartenders	9	50
Servers	60	150
Cashiers/Hostess	12	82
Bussers	17	70
Back of House - All F&B Outlets Chef/Manager		7
Cooks	15	105
Food Preps	7	60
Dishwashers	10	40